CITY OF COQUITLAM

WIRELESS COMMUNICATION FACILITIES (WCF) PROTOCOL

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October 2019

Coquitlam

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1. Purpose of the WCF Protocol

This WCF Protocol establishes the City of Coquitlam's participation in the review and approval process for the location and siting of WCF infrastructure in the City of Coquitlam, pursuant to ISED regulations and requirements.

2. How are WCFs Regulated?

In addition to following the procedures outlined in this document for the location and siting of WCF infrastructure in the City of Coquitlam and public consultation pursuant to ISED regulations, proponents must fulfill other important obligations including:

- compliance with all Innovation, Science and Economic Development Canada ("ISED", formerly Industry Canada) regulations;
- compliance with Health Canada's Safety Code 6 guideline for the protection of the general public;
- compliance with radio frequency immunity criteria and notification of nearby broadcasting stations;
- environmental regulations;
- Transport Canada/NAV CANADA aeronautical safety responsibilities; and
- compliance with the Canadian Electrical Code.

3. Applicability of Protocol

All WCF proponents will inform the City of all proposed WCF installations in Coquitlam, regardless of the height or type, and whether or not there is an ISED requirement for a public consultation process.

The requirements outlined in this document apply to anyone who owns or is planning to install or modify a WCF regardless of the type or proposed use. This includes telecommunications carriers, businesses, external government agencies, Crown agencies, operators of broadcasting undertakings and the public (including for amateur radio operation and over the air TV reception). The requirements also apply to those who install towers or antenna systems on behalf of others or for leasing purposes ("third party tower owners"). As well, parts of this protocol contain obligations that apply to existing antenna system owners and operators.

4. Procedure

The following general procedure outlines the steps that will take place prior to the installation or modification of a WCF structure in the City of Coquitlam.

1) The proponent should review and follow the appropriate location and design guidelines outlined in this WCF Protocol prior to submitting its WCF proposal.
2) The proponent will inform the City's Information and Communications Technology (ICT) Division in writing of its proposal at WCFSupport@Coquitlam.ca.

3) Staff from ICT will contact the proponent and arrange an on-site meeting to review specifications and location of the proposed WCF. Staff will provide initial feedback at this time.

4) Following the meeting with ICT staff, the proponent will complete a submission package and checklist and submit all required documents to the Building Permits Division (BPD). A submission fee is required to be paid at this time.

5) The proponent's submission will be circulated by the BPD to staff representatives of departments that may be potentially impacted by the proposed WCF (e.g. Engineering and Public Works or Parks, Recreation and Culture Services).

6) Where necessary, staff may request additional information from the proponent in response to questions or concerns raised by staff, or arrange meetings as needed.

7) The proponent will be required to submit a Building Permit application for any WCF that includes structures, as defined in the City's Building Bylaw. The BPD staff will review the application for compliance with the British Columbia Building Code and the City's Zoning Bylaw.

8) As per ISED regulations, WCF structures greater than 15 metres (49.2 feet) in height will require a public consultation process that will be coordinated by the proponent. The City Clerk's Office's will provide the proponent with the mail-out information.

9) If public consultation is required, BPD staff will forward the results to Council for information.

10) The BPD may grant approval for construction of the WCF when all City department referrals have been completed and approved. An approval for construction will expire after one year and a new submission will be required if construction has not started.

11) For WCFs proposed to be located on public property or City-owned infrastructure, staff approval will be in accordance with the Delegation of Authority Bylaw.

5. Public Consultation Requirements

1) New WCF structures less than 15 metres (49.2 feet) in height or extend less than 25% of the existing height of existing structures, including roof tops, water towers, lamp poles are not subject to public consultation requirements under ISED.
2) ISED requires a public consultation process for new Wireless Communication Facility Support Structures over 15 metres (49.2 ft.) in height or extend more than 25% of the existing height of the existing structure. City of Coquitlam's WCF Protocol requires that all carriers and amateur radio operators adhere to ISED's process and requirements (CPC-2-0-03 Issue 5), as applicable. Therefore:
   - The proponent will facilitate a public consultation process as part of their application.
   - The City Clerk's Office will provide the proponent with the addresses for the consultation.
   - For proposed WCF installations that require a public consultation process consistent with ISED regulations, the BPD will advise Council of the public consultation results.

- Staff will discuss the results of the consultation with the proponent as necessary.

6. Design Guidelines

Prior to proposing a WCF, proponents should familiarize themselves with the appropriate location and design guidelines and design the proposed WCF to be consistent with these guidelines. WCF installations should follow the WCF Location and Design Guidelines in Appendix 1 to this document and Small Cell installations should follow the Small Cell Facility Location and Design Guidelines in Appendix 2 to this document.

Appendix 1: WCF Location and Design Guidelines

These guidelines apply to all commercial installations, regardless of height or location. Amateur radio installations are subject to the specific guidelines in Section 2 and Small Cell Facilities are subject to the Guidelines in Appendix 2.

1. Guidelines for Commercial WCF

1.1. Siting

- Opportunities should be explored through a pre-consultation meeting between the proponent and ICT staff to locate the proposed WCF on City-owned land, buildings or infrastructure. Where feasible, opportunities to connect to the City's QNet fibre optic network should also be explored.
- When considering the siting of telecommunication tower facilities, opportunities should be explored to locate new equipment on existing structures such as BC Hydro infrastructure or existing telecommunications towers.
- It is the City's strong preference that new free-standing telecommunication towers over 15 metres (49.2 ft.) be sited in non-residential and non-school locations and preferably in industrial or other areas removed from current or planned residential or school uses.
- All proponents with an application for free-standing telecommunication structures over 15 metres (49.2 ft.) are encouraged to explore opportunities to use existing structures for locating their devices, such as BC Hydro infrastructure and existing telecommunication towers, where feasible.
- New free-standing telecommunication towers shall be located as far as reasonably possible from the edge of an existing or planned future Public Right of Way. If proposed on an existing Public Right of Way, referrals will be made to the Engineering and Public Works Department.
- If a Building Permit is required, the BPD will review the structural aspects of the proposed infrastructure along with the required Professional Engineer's Schedules and Letter of Assurance/Attestation. The file manager will also check for the proximity to other infrastructure. As noted above, where feasible, opportunities to connect to the City's QNet fibre optic network will also be explored.
- Towers on prominent natural and cultural features, or within environmentally sensitive areas or areas with historically significant buildings are discouraged. Referrals will be made to Parks, Recreation and Culture in these circumstances.
- Location of telecommunication towers on sites within mature tree stands that are not planned for removal is encouraged, while recognizing that taller structures may be necessary to meet line of sight requirements. Landscaping shall be appropriately placed around a telecommunication tower and ancillary facilities such as equipment shelters to minimize their visual impact on their surroundings.

1.2. Co-location

- The carriers and other telecommunication tower owners are encouraged to work cooperatively in reaching agreements which allow for sharing of tower structures so as to minimize, where practical, the total number of towers in the City. This practice is typically referred to as "co-location".
- The principal benefit from co-location is that fewer towers are needed to serve a given area, thus reducing the overall visual impact of towers in the community.
- This policy acknowledges that co-location may result in slightly taller structures and more antennas on each structure, as well as larger enclosures at the base of the tower, and that there are physical limitations on how many antennae a single tower can structurally accommodate.

1.3. Public Right-of-Way

For the installation of new WCF within the public right-of-way the following standards apply:

- *Alignment*- The WCF must align with existing streetlights and street trees to maintain a clear pedestrian zone.
- *Monopoles* – Monopoles will not be considered within the public right-of-way.
- *Distance from building face* – The WCF must be a minimum of six metres from any above grade residential building face and a minimum of three metres from any other above grade building face, including projecting windows.
- *Accessibility* – The WCF must not violate applicable municipal, provincial, or federal guidelines, standards, or laws regarding accessibility.
- *Trees*- The WCF must be placed a minimum of six metres away from a tree trunk, measured from the outside of the tree.
- *Fire Safety*- The WCF must be a minimum of three metres from an existing fire hydrant or a building's fire connections.
- *Traffic Signal Poles*- The WCF must be a minimum of five metres from a traffic signal pole and not on any streetlight with a common power source to the traffic signal.
- *Clear Sight Line Distances* – The WCF and its related components, including poles, cables, and supporting equipment (such as electrical kiosks), shall not obscure sight lines at intersections as determined by the City.
- *Major Intersection Restriction* – The WCF pole shall not be located within a ten metre by ten metre sight distance triangle at any corner of a major intersection.
- *Driveway*- The WCF shall not be placed within an area extending 5 metres from either side of a driveway.

1.4. Residential Neighbourhoods and Properties

In recognition of the impact that the WCF has on the character of neighbourhoods, no new WCF shall be located in the public rights-of-way within any residential neighbourhood or co-located on an existing wireless support structure in any residential neighbourhood unless it complies with the following design standards:

- All WCFs should be located in the rights-of-way of arterial and collector standard streets; locations along local streets are discouraged.
- All WCFs shall be designed to be visually unobtrusive as determined by the City.
- All WCFs must utilize building materials, colours, textures, screening and landscaping that effectively blend the facilities within the surrounding natural setting and built environment to the greatest extent possible. The WCF shall have limited exposed cabling and mounting hardware.
- The proponent shall comply with any reasonable conditions imposed by the City to accommodate the particular design, appearance or intended purpose of the WCFs to avoid the intangible public harm of unsightly or out-of-character deployments.
- Concealment or camouflage options should be presented with the application to minimize the impact of the WCF on the community or neighbourhood. A concealed or camouflaged WCF would be one that is painted, covered, disguised or concealed so that it blends into the surrounding environment. It could be powder coated or hidden beneath a façade or wrap, blend with the design of the area, or be disguised as a tree or piece of public art.
- The proponent must comply with all applicable Municipal, Provincial, and Federal historic preservation laws.
- The proponent is discouraged from installing a WCF within 100 metres of a historic site or structure, residential neighbourhood, or distinct features recognized by the Municipal, Provincial, or Federal government, as of the date of the submission of the permit. It is recommended that each submission disclose if it is within 100 metres of such a structure or neighborhood.

1.5. Duty to Repair or Relocate

Any public right-of-way, public property or private property that is disturbed or damaged during, or as a result of, the construction, reconstruction, repair, replacement, removal, relocation, operation or maintenance of any WCFs by the proponent or its agents or contractors shall be promptly repaired by the proponent at its sole expense. In the event that relocation of a WCF is necessary for City business, relocation shall be at the proponent's sole expense.

1.6. Visual Design

ROOFTOP STRUCTURES

- Where an antenna is proposed to be sited on the rooftop of a building or affixed to the edge of the roofline or side of the building, the antenna must be screened or designed in a way that complements or enhances the architecture of the building while not adversely impacting on radio signal strength or area of coverage. Any ancillary facilities must be managed in the same way.

Preferred

Not Preferred

MONOPOLES

- Where an antenna is to be a free-standing monopole, the support structure must consist of a self-supporting metal pole. It may not be mounted using a steel lattice, or guy wires. The antenna should be as flush as possible with the pole so as to look like an extension of the pole itself.

Preferred

Not Preferred

2. Guidelines for Amateur Radio Antenna Installations

No antenna boom or other apparatus attached to the antenna support structure shall project within 0.3 metres (1 foot) of any property line.

Structures should not be illuminated or carry advertising, flags, graphics or other such devices unrelated to the function of an amateur radio antenna support structure, except for warning markings and lights required by any provincial or federal authority.

Antenna support structures should not be placed in the front yard.

Appendix 2: Small Cell Facility Location and Design Guidelines

1. Purpose

The Small Cell Facility Location and Design Guidelines apply to all Small Cell Facility installations in addition to the WCF Location and Design Guidelines in Appendix 1.

The purpose of these Small Cell Facility Location and Design Guidelines is to:

- Balance the deployment of small cell facilities and associated wireless support structures in the public right-of-way to provide fast, reliable coverage and capacity, while preserving the character, aesthetics, and pedestrian-friendly design of the City of Coquitlam's streetscapes;
- Ensure that structures and facilities within the public right-of-way protect the health, safety, and welfare of the public by minimizing and reducing impacts to surrounding land uses and to the City, its residents and visitors;
- Protect the integrity of neighbourhoods, commercial areas, residential areas, and downtown areas and ensure that access to and occupancy or use of public right-of-way in such areas is technologically and aesthetically appropriate;
- Require, in certain situations where new poles are proposed, that all equipment including wiring, be concealed inside the new pole;
- Establish clear standards for use throughout the City; and
- Foster partnerships to expedite the installation and operation of small cell facilities in order to enhance wireless service for commercial, residential, and institutional users in Coquitlam.

2. Preference for Locations

Small Cell infrastructure must not be installed on traffic signal poles. The preferred locations of Small Cell infrastructure, in order, are:

1. Major arterial roads and highways.
2. Streetlights with cobra heads or on third party poles.
3. Standalone poles on streets or named alleys.

3. Co-location (Attachment to Existing Poles)

3.1. Streetlights

The proponent must verify the owner of the pole on which it wishes to locate equipment and work with the owner to adhere to the applicable Small Cell Facility Location and Design Guidelines herein.

Any attachment, including antenna(e), attached to an existing pole located on an arterial road or a highway must not extend the existing pole to a height of more than 13 metres or by more than 10%, whichever is greater. See below for a summary of spacing and height by roadway type/area.

Roadway Type/Area	Layout	Typical Pole Height	Maximum Height	Color (Note a)	Pole Design (Note a)
Highways	One per side of block face	9.0 – 11.0m	13.0m	Match adjacent fixtures	Match adjacent design
Arterials		9.0m	13.0m		
Collectors (Note b)		7.5 - 9.0m	8.5 – 10.0m (Note c)		
Locals (Note b)		4.0 – 6.0m	4.5 – 6.5m (Note c)		
Residential Neighbourhoods (Note a)	One per block	NA	Case by case review		

Notes:
a. The City will notify the proponent if upcoming roadway improvements will alter existing pole color and/or design.
b. A shroud will be required to cover equipment if mounted to existing pole.
c. Any attachment shall not exceed 10% of existing/adjacent pole height.

Poles and all equipment must be the same colour and finish as surrounding streetlight poles.

The proponent may be required, at its cost, to replace existing infrastructure and bring it up to applicable standards. This may include undergrounding utilities and replacing bases, poles and luminaires.

3.2. City of Coquitlam Decorative Streetlights

Small cell equipment will not be allowed to co-locate on decorative streetlight poles or poles that have decorative luminaires that are owned by the City of Coquitlam. If no other option exists, the proponent will replace the streetlight pole, or components of it, with similar decorative elements for consideration.

3.3. Additional Requirements

SMALL CELL ANTENNA REQUIREMENTS
The small cell antenna must be mounted internal to the pole whenever feasible; otherwise, it must be top-mounted and painted or powder coated to match the pole.

CABLING REQUIREMENTS
All cabling must primarily be internal to the pole. No cable will be visible at the top of the pole near the antenna. External cables powering the pole mounted radios, cutoff switches or other devices will be limited to a total length of 60cm, including drip loops, slack, etc. Any cable access point on the pole must be sealed with a manufactured product to keep birds from entering and nesting. All applicable electrical codes must be adhered to, including the Canadian Electrical Code. Any electrical upgrades required by the proponent and the Code will be addressed at the proponent's expense.

ELECTRICAL METER AND CABINET REQUIREMENTS

If an electrical meter is required, the electrical meter must not be installed on the pole. Any necessary meter or other accessory cabinet must be installed on the outside edges of the street, behind the sidewalk, bicycle or multi-use pathway, in accordance with all location and landscaping requirements set by the City. The proponent must maintain any required vegetative landscaping to ensure a neat appearance and to mitigate sight distance obstructions by maintaining the ten metre by ten metre sight distance triangle. When the installation occurs in an area where the adjacent poles are painted, the City may require that the electrical meter cabinet be powder coated to match the colour of the poles.

3.4. Visual Design

For a reference to the City's preferred design appearance please see below:

SMALL CELL ANTENNA

- Small Cell Antennas should be as discrete as possible, and may be mounted to streetlights as needed. Antennas should have a uniform casing wherever possible.

Preferred

MICROCELL ANTENNA

- Microcell antennas mounted to the top of existing supporting posts (e.g. a telephone pole or streetlight) must mount to the post in such a way as to be unobtrusive.

Preferred
(photo given for style reference only)

Not Preferred

Appendix 3: Glossary of Terms

- **"Amateur Radio"** means a radio station operated in the amateur radio service.
- "**Proponent**" means any applicant proposing a WCF. This includes telecommunications carriers, businesses, external government agencies, Crown agencies, operators of broadcasting undertakings and the public (including for amateur radio operation and over the air TV reception).
- "**Public Property**" means any real property owned or controlled by the City, excluding the Public Right-of-Way.
- "**Public Right-of-Way"** means the surface, air space above the surface, and the area below any public street, way, alley, sidewalk, median, parkway, or boulevard.
- "**Wireless Communication Facility**" (WCF) means a structure used for the transmission or reception of wireless telecommunications services. A WCF may include an antenna array, connection cables, equipment housing, and/or a tower structure. WCFs may be further defined into the following general categories:
    - "**Microcell Facility**" means a small wireless facility that is no larger in dimensions than 60 cm (24 inches) in length, 38 cm (15 inches) in width, and 30 cm (12 inches) in height and that has an exterior antenna, if any, that is no more than 28 cm (11 inches) in length.
    - **"Monopole"** means a free-standing tower over 15 metres in height constructed without guy wires or ground anchors that is used to mount antennas.
    - "**Small Cell Facility**" means a WCF where each antenna is located inside an enclosure of no more than three cubic feet in volume or, in the case of an antenna that has exposed elements, the antenna and all of its exposed elements could fit within an imaginary enclosure of no more than three cubic feet; and primary equipment enclosures are no larger than 17 cubic feet in volume. The following associated equipment may be located outside of the primary equipment enclosure and, if so located, is not included in the calculation of equipment volume: electric metre, concealment, telecommunications demarcation box, ground-based enclosure, back-up power systems, grounding equipment, power transfer switch and cut-off switch. Small cell facilities may be attached to tower structures, poles and base stations. In this document, the definition of a Small Cell facility shall also include a Microcell or Microcell Facility.
- "**Wireless Service**" means data and telecommunications services, including commercial mobile services, commercial mobile data services, unlicensed wireless services, and common carrier wireless exchange access services, as all of these terms are defined by federal law and regulations.
- "**Wireless Site**" means a location selected for the proponent's deployment of Wireless Communication Facilities.