



# Schedule C: Guidelines, Part II

## *Small Cells on Designated Street Lights*

*2021 July 08*

### **IMPORTANT:**

- For the most recent version, go to [www.calgary.ca/wirelessinfrastructure](http://www.calgary.ca/wirelessinfrastructure)
- This schedule is intended to be read with the Master Licence Agreement for Wireless Infrastructure.
- All words that are capitalized are defined within the body of the Master Licence Agreement for Wireless Infrastructure.
- All words that are italicized and capitalized are defined within the glossary of this schedule.



## **Approved WSP: Inquire about site feasibility 4**

Structural analysis	5
Asset classification: Designated Street Light Poles	6
CITY PROCESS 2.0: Assess site feasibility	7

## **Approved WSP: Establish site design 8**

Street Light Communications Infrastructure	10
Conduit limitations	11
Applicable Laws	15
CITY PROCESS 3.0: Review site design	17

## **Approved WSP: Obtain a Site Licence 18**

CITY PROCESS 4.0: Administer Site Licence	20
---	----

## **Approved WSP: Construct & comply to requirements 22**

CITY PROCESS 5.0: Monitor for compliance	24
--	----

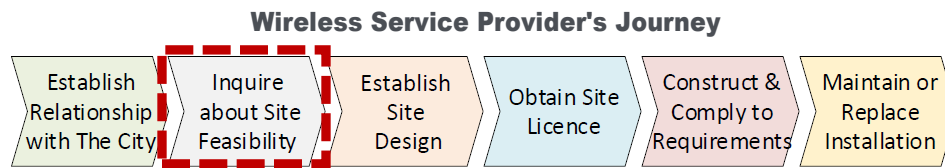
## **Approved WSP: Maintain or replace installation 25**

City Process 6.0: Provide access for maintenance and replacement	28
--	----

<b>Version Updates</b>	<b>Description of Change</b>
2021 May 10	1) Amendments to 'Establish site design': a) Section 1.I.c. b) Additional Information - section A. c) Amendment to Access Box Size and labelling. 2) Addition to 'Establish site design': Section II.3 and 1.II.4. 3) Amendment to 'Obtain a Site Licence': a) Section 1.b.3 4) Amendments to 'Construction and comply to requirements' a) Section 3.b
2021 July 08	1) Street Light Communications Infrastructure Access Box Requirement: Conduit from the access box to the street light pole base shall be 32 mm – orange.



# Approved WSP: Inquire about site feasibility



## The **Approved WSP** will:

1. Complete the integrated site feasibility form which may be obtained by emailing [WID@calgary.ca](mailto:WID@calgary.ca). Please submit a KMZ file with each inquiry form.
2. Within **fourteen (14) calendar days** of receiving a request from the *Case Steward*, complete Property-specific form (if required).
3. If applicable, the *SLP Asset Steward* will request the Approved WSP submit a structural analysis. Please refer to the 'Structural analysis' section.

## **Additional Information**

- A. **CO-LOCATION:** Unless a co-locate inquiry is submitted by Approved WSPs as a coordinated effort, any installations in progress must be constructed and inspected before the *SLP Asset Steward* will consider any requests for the co-location of Equipment. Co-location shall be considered at the discretion of the *SLP Asset Steward* on a case-by-case and first-come-first-serve basis.
- B. **DON'T BE DELAYED:** The Approved WSP is responsible for obtaining a concurrence letter which may be obtained by submitting an antenna application. For more information go to [calgary.ca/PDA/pd/Pages/Signs/Antennas.aspx](http://calgary.ca/PDA/pd/Pages/Signs/Antennas.aspx). The *SLP Asset Steward* will only issue a [Site Licence](#) to the Approved WSP if a concurrence letter is received.
- C. **REMEMBER:** The Approved WSPs are responsible for the following ensuring all electrical Equipment installed under Part 1 of the Canadian Electrical Code bears a certification mark or special inspection label that is recognized by the Standards Council of Canada. All installations shall meet or exceed all applicable structural standards, clearance standards and provisions of the latest codes. In case of conflict, the most stringent requirements shall prevail.
- D. **THINKING AHEAD:** A consultation on obtaining a Utility Alignment Permit may be requested. Standards are available on calgary.ca, [Utility Alignment Permits](#)<sup>1</sup> pages. The Approved WSP should consider the following questions:
  - a. Is there sufficient backhaul and power for the proposed site(s)?
  - b. Have you reviewed *JUMP* records to determine if there is space for backhaul build?
- E. **CITY-OWNED FIBRE:** The City licences its excess dark fibre. For a consultation or to learn more about accessing The City of Calgary's dark fibre, go to [calgary.ca/darkfibre](http://calgary.ca/darkfibre). Fibre enquiries may be initiated at any time.

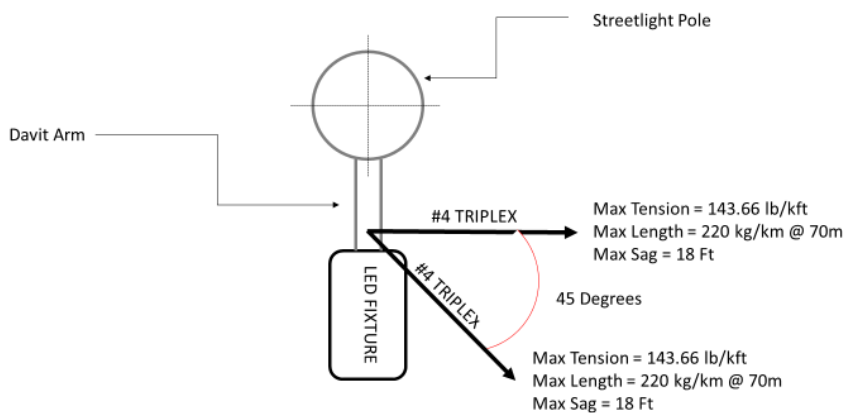
<sup>1</sup> <https://www.calgary.ca/CS/IIS/Pages/Utility-Alignment-Permits/permits.aspx>

# Structural analysis

Any requirements or requests for a structural analysis will be treated as a design deviation. The *SLP Asset Steward* will request an Approved WSP to undertake a structural analysis. Please do not undertake a structural analysis without first consulting the *SLP Asset Steward*. An acceptable analysis will include:

- (a) The latest wind values (i.e. CSA S6-19 ( $q=554$  Pa) 1/25 Year, Calgary).
- (b) Two scenarios:
  - i. With a 45 degree (see diagram below) temporary overhead wire.
  - ii. Without a temporary overhead wire.

City of Calgary Street Light Plan View (Not to Scale)



- (c) A relay which is mounted up to 6m on the pole. Weight: 10 kg. Width: 254 mm. Height: 203 mm. Depth: 152 mm.
- (d) Equipment.
- (e) Calculated base reactions.
- (f) Pole and base design drawings as obtained from the *SLP Asset Steward*.
- (g) Any other specifications (e.g. banners, signage, etc.) that may be unique to the pole.

The authenticated / stamped engineers report will be accepted as proof of structural loading compliance as it relates to an existing pole and provided the pole is in acceptable condition (e.g. no visible corrosion or damage).

## Asset classification: Designated Street Light Poles

Available	Conditionally available	Unavailable
<p>Galvanized steel single davit poles.</p> <p>Three (3) heights are available: 9 metres; 12 metres; and 15 metres.</p>	<ul style="list-style-type: none"> <li>- Corten davit<sup>2</sup> poles.</li> <li>- Painted steel.</li> <li>- 12m aluminum poles<sup>3</sup>.</li> <li>- Poles with signage may not be suitable for deployment of <i>Small Cell</i>. <i>TCP</i> shall determine, at its sole discretion, if it is possible for signage to be moved.<sup>4</sup></li> </ul>	<ul style="list-style-type: none"> <li>- 20 metre galvanized poles are serviced by 480V, require extensive detour set-ups and come with substantial traffic safety issues (e.g. high traffic collisions may create circumstances where the Equipment becomes a projectile). As such, 20 metre galvanized poles are not available for <i>Small Cell</i> deployment. The City will continue to evaluate this for inclusion in the future.</li> <li>- All other types of Designated Street Light Poles (e.g. residential decorative poles, poles on bridges and other decorative poles) may be considered on a case-by-case basis at the discretion of the <i>SLP Asset Steward</i>.</li> <li>- Sites that do not comply with the <i>Part III - Urban Design Guidelines</i>.</li> <li>- Any Designated Street Lights that have been previously declined due to preliminary or other urban design review.</li> </ul>

<sup>2</sup> The replacement or customization requirements for these poles are the financial responsibility of the Approved WSP.

<sup>3</sup> 12m aluminum poles shall be replaced with 12m galvanized poles.

<sup>4</sup> Costs incurred to move signage shall be the responsibility of the Approved WSP.

# CITY PROCESS 2.0: Assess site feasibility

The **Case Steward** will:

1. Inform the Approved WSP of any *Part III - Urban Design Guidelines* considerations and provide the Approved WSP an opportunity to withdraw the site or submit an alternative site that complies with the *Part III - Urban Design Guidelines*.
2. Endeavour to carry out the following activities within **five (5) calendar days** of receipt of the integrated site feasibility form and Property-specific form (if required) from the Approved WSP:
  - (a) Review the form for completeness;
  - (b) Assign a file number;
  - (c) Update the status of online map from 'available' or 'conditionally available' to 'under review'; and
  - (d) Notify the *SLP Asset Steward* once the form has been deemed complete.
3. Provide the Approved WSP with the decision and conditions set out by the *SLP Asset Steward*.

The **SLP Asset Steward** will:

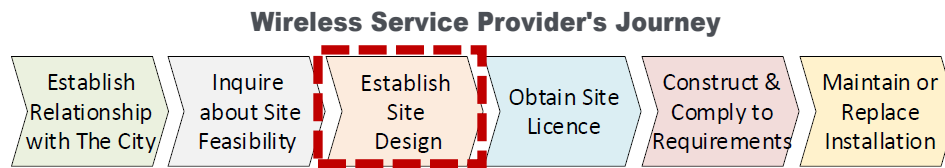
1. Within **fourteen (14) calendar days** (provided the ground is clear and there are no public weather alerts issued by Environment Canada) of the integrated site feasibility form and Property-specific form being deemed complete by the *Case Steward* will endeavor to:
  - (a) Inspect the *SLP*;
  - (b) Engage impacted City stakeholders (e.g. Calgary Transit), where applicable;
  - (c) Complete the Property-specific form with a decision and conditions; and
  - (d) If requested by the Approved WSP, engage the *TCP* technician to determine if a sign may be removed. If required, the *TCP* Technician will engage any impacted City stakeholders (e.g. Calgary Parking Authority, Community Planning, etc.).

If any site is outside of the five (5) km area, it will be declined by the *SLP Asset Steward*. The Approved WSP may submit a new application.

**Important:** Signage on poles in the centre city may have the following additional removal restrictions:

- Removal of parking signs cannot negatively impact Calgary Parking Authority.
- The relocation of signs to standalone signposts may create obstructions to pedestrian mobility which need to be mitigated.
- Standalone signposts must maintain minimum separations to surface apertures.

# Approved WSP: Establish site design



The **Approved WSP** will:

1. Notify the *Case Steward* that they wish to proceed by submitting a Property-specific site design form to the *Case Steward* within **sixty (60) calendar days** from the date the Approved WSP receives the site feasibility decision.
  - Only sites that have been [assessed as feasible](#) may be included.
  - The following documentation is required upon submission of the Property-specific site design form.
    - I. IFR drawings which shall:
      - (a) Comply with the Street Light Communications Infrastructure (see below);  
NOTES:
        - The inclusion of interpolate conduit and aggregation boxes are not required unless it makes sense in consultation with The City.
        - The *SLP Asset Steward* will provide design comments leading to design approval.
      - (b) Reflect a weather proofed design (i.e. weatherproof grommets shall be installed at all cable entry points)
      - (c) Be submitted in PDF format in compliance with [Streetlight Standards for AutoCAD](#). Drawings representing the Approved WSP infrastructure and designated power are only required if requested by the *SLP Asset Steward*,
    - II. Power assessment (voltage drop) authenticated by a professional engineer in good standing with the Association of Professional Engineers and Geoscientists of Alberta
      1. The power assessment study must confirm sufficient capacity in existing street light circuits for the additional load.  
NOTE: The Approved WSP will be required to reconfirm that the field conditions are the same between IFR and time of construction.
      2. If the power assessment study finds that there is insufficient capacity for additional load and the Approved WSP wishes to proceed with the site, the Approved WSP shall visit [Get Connected \(enmax.com\)](#) to request a new commercial service.
      3. Voltage drop should be displayed on an export of street light data and should be on a title block.
      4. Prequalified consultants should use the SLP data. Do not contact ENMAX.



- III. Documentation confirming that all site feasibility conditions have been addressed.
- IV. Documentation confirming all signage (or other attachments) relocation requirements have been addressed.

2. Plan to purchase Access Boxes from:

- (a) The City warehouse (recommended); or
- (b) Directly from The City's contracted vendor provided that a label is affixed with the words 'City of Calgary Street Light Comms Access'. Please contact the *SLP Asset Steward* for latest vendor contact information.

3. Direct prequalified consultants (prequalifications are based on The City's standards) to submit [Utility Alignment Permits](#) on behalf of street lighting for The City-owned make ready work (i.e. conduit, base, access box).

Note: If an Access Box and conduit from the Access Box to the pole is already in place, a new [Utility Alignment Permit](#) is not required.

4. Only retain prequalified consultants and contractors (prequalifications are based on The City's standards). To determine if a consultant or contractor is qualified to work on the specific asset, please refer to the following lists located on calgary.ca:

1. [Prequalified Firms for Engineering and Architectural Consultants](#)<sup>5</sup>
2. [Prequalified Prime Contractor List](#)<sup>6</sup>

If the Approved WSP's consultant or contractor is not currently qualified, please refer to calgary.ca to learn more about [prequalification](#)<sup>7</sup>.

5. Comply with:

1. The Canadian Electrical Code;
2. [Standard Specifications for Street Light Construction](#)<sup>8</sup>; and
3. [Design Guidelines](#) for Street Lighting.

### **Additional Information**

- A. For the purposes of creating base drawings, the Approved WSP may access data<sup>9</sup> on *SLPs such as* existing street light layouts, pole type (which includes pole height, arm length and pole material), proximity to power, controller locations, underground wire offsets (best known information), and foundation type. This data should be used to support the power assessment and make-ready street light designs.

<sup>5</sup> <https://www.calgary.ca/content/dam/www/ca/fs/documents/bid-and-vendor-information/prequalified-engineering-architectural-consultants.pdf>

<sup>6</sup> <https://www.calgary.ca/CA/fs/Documents/Bid-and-Vendor-Information/PrequalifiedContractors.pdf>

<sup>7</sup> <https://www.calgary.ca/CA/fs/Pages/Bid-and-Vendor-Information/Prequalification.aspx>

<sup>8</sup> [https://www.calgary.ca/PDA/pd/Documents/urban\\_development/publications/Streetlighting2006.pdf](https://www.calgary.ca/PDA/pd/Documents/urban_development/publications/Streetlighting2006.pdf)

<sup>9</sup> Approved WSPs are responsible for fees incurred for data extracts. The Approved WSP shall be responsible for specific data cuts (e.g. 20 specific poles). The existing database has an estimated accuracy of approximately 95 per cent. As such field verification by the Approved WSP shall be required.

This information may be obtained in one of two ways:

- (a) Annual drop of information. Please contact the *WID Coordinator*.
  - (b) Using the attached drafting requisition form and submitting to [IISAIM-Traffic-StreetLighting@calgary.ca](mailto:IISAIM-Traffic-StreetLighting@calgary.ca) with a screenshot of targeted area.
- B. **DON'T BE DELAYED:** The Approved WSP is responsible for obtaining a concurrence letter which may be obtained by submitting an antenna application. For more information go to [calgary.ca/PDA/pd/Pages/Signs/Antennas.aspx](http://calgary.ca/PDA/pd/Pages/Signs/Antennas.aspx). The *SLP Asset Steward* will only issue a [Site Licence \(Process 4\)](#) to the Approved WSP if a concurrence letter is received.
- C. **REMEMBER:** The Approved WSP is responsible for ensuring all electrical Equipment installed under Part 1 of the Canadian Electrical Code bear a certification mark or special inspection label that is recognized by the Standards Council of Canada. All installations shall meet or exceed all applicable structural standards, clearance standards and provisions of the latest codes. In case of conflict, the most stringent requirements shall prevail.
- D. **THINKING AHEAD:** A consultation on obtaining a Utility Alignment Permit may be requested. Standards are available on calgary.ca, [Utility Alignment Permits](#)<sup>10</sup> pages. The Approved WSP should consider the following questions:
1. Is there sufficient backhaul and power for the proposed site(s)?
  2. Have you reviewed *JUMP* records to determine if there is space for backhaul build?
- E. **CITY-OWNED FIBRE:** The City licences its excess dark fibre. For a consultation or to learn more about accessing The City of Calgary's dark fibre, go to [calgary.ca/darkfibre](http://calgary.ca/darkfibre). Fibre enquiries may be initiated at any time.

## Street Light Communications Infrastructure

The Street Light Communications Infrastructure is intended to be used solely for the purpose of bringing communication services to the *SLPs*.

### General standards

1. Metering requirements are defined by Enmax Power Corporation:
  - i. *Small Cell* power can be unmetered (i.e. share circuit with street light).
    - Requires *Site Licence* inclusive of power.
    - Power to be paid by City.
  - ii. For billing purposes, a separate site id is required with different rate class D200 for *Small Cell* versus D500 for *SLP*.
    - Cannot share rate class.
  - iii. Fifty (50) *Small Cell* nodes are allowed in one D200 rate class site id or 5000 kw-hrs/month, whichever is lower.

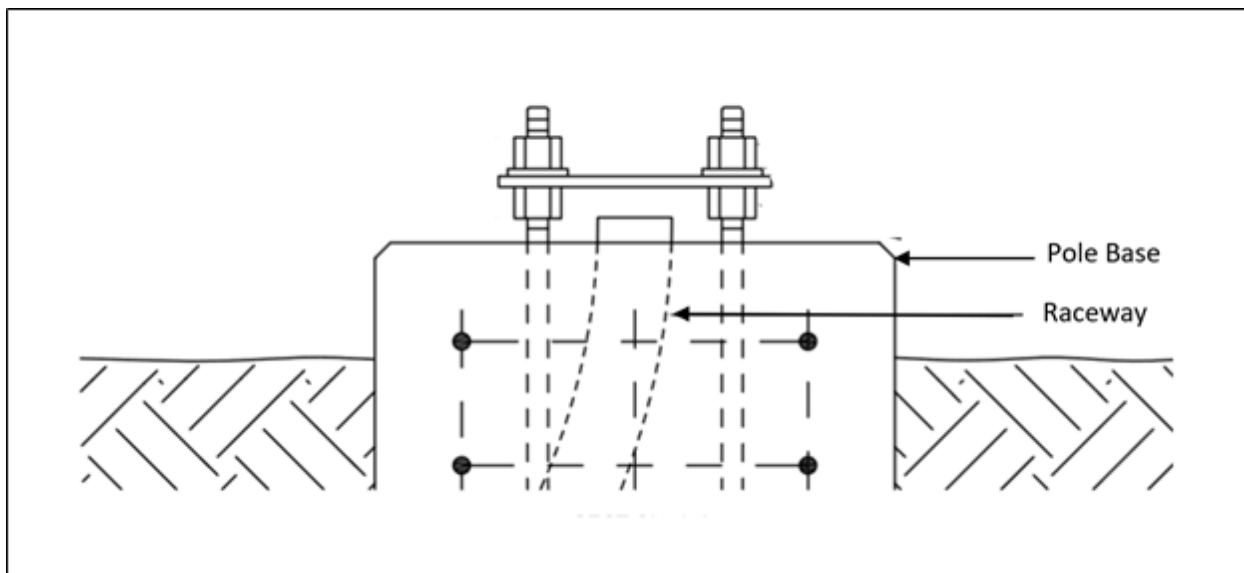
<sup>10</sup> <https://www.calgary.ca/CS/IIS/Pages/Utility-Alignment-Permits/permits.aspx>


## 2. Electrical Specifications & Voltage Drop Requirements

- i. The Canadian Electrical Code dictates the voltage drop across a branch circuit cannot exceed three (3) per cent and voltage drop on a secondary cable cannot exceed two (2) per cent.
- ii. Photo electric relays (PER'S) in the downtown network have a capacity of 30A but connected load shall not exceed eighty (80) per cent or 24A.
- iii. Street light cabinets in the downtown network have a capacity of 100A but connected load shall not exceed eighty (80) per cent or 80A. It is unlikely to reach this threshold.
- iv. Relays and cabinets in the downtown network require a service entrance rating of 100kA (Enmax Power Corporation requirement).
- v. Installation outside of the downtown network area require a 15kA service entrance rating.
- vi. All installations require a green electrical sticker.

## Conduit limitations

As illustrated below, the raceway is 100mm (4Inch) which will accommodate up to 3 - 32mm. In a scenario with three (3) conduits, there will be no space to accept a fibre duct; although a rare occurrence, this scenario is applicable to an estimated five (5) per cent to ten (10) per cent of all Pole Bases. Access to bases that have 3-32mm existing conduits will require and upgraded bases with a 152mm (6Inch) raceway.






Requirement	Existing development power from the SLP	Existing development power not from the SLP	New development or redevelopment
<b>Custom design required</b>	✗	✗	✓
<b>Custom design for power required:</b> If power is does not come from the SLP, the Approved WSP will engage a prequalified designer (prequalifications are based on The City's standards) to design for power required. The subsequent design will run both phases <sup>11</sup> wherever possible.	✗	✓	✗
<b>Aggregation point</b> <sup>12</sup> <ul style="list-style-type: none"> <li>- Only used as required and outlined in the custom design specifications.</li> <li>- Designed to accommodate multiple parties up to the physical capacity.</li> <li>- The aggregation point will be either 91cm x 61cm x 91cm OR 76.2cm x 122cm x 91cm depending on the site. Depth is 91cm.</li> <li>- There will be <u>no power</u> in the aggregation point. Communications conduit only.</li> <li>- Primary purpose is to pass through the aggregation point with slack loops and splicing done in the Approved WSP infrastructure.</li> <li>- As of 2020 December 01, the standard box is:</li> </ul> <div style="text-align: center;">         BULK04 (1).pdf     </div>	✗	✗	✓
<b>Fibre</b> (from Access Box to the Equipment on the SLP) <ul style="list-style-type: none"> <li>- Fibre cable that enters, passes through or terminates into a City asset such as an Access Box, SLP or aggregation box will be subject to cable size restrictions.</li> <li>- Ideally between 6mm and 10mm.</li> <li>- All di-electric.</li> <li>- One cable per Approved WSP for each SLP<sup>3</sup>.</li> </ul>	✓	✓	✓
<b>Conduit from Approved WSP infrastructure to Access Box:</b> <ul style="list-style-type: none"> <li>- Approved WSP conduit that enters, passes through or terminates into a City asset such as an Access Box, or aggregation box will be subject to size restrictions.</li> <li>- One (1), 32 mm (max size and may be smaller) conduit.</li> </ul>	✓	✓	✓


<sup>11</sup> There are different voltages in different parts of The City: some are single phase and others are multi-phased.

<sup>12</sup> Also referred to as the demarcation point or large Access Box.

<sup>13</sup> Co-location is an option, however due to existing structural limitations, it is anticipated that only one Approved WSP will be located on a pole.

Requirement	Existing development power from the SLP	Existing development power not from the SLP	New development or redevelopment
<p><b>interpole conduit</b><sup>14</sup>:</p> <ul style="list-style-type: none"> <li>- Interpole conduit can be owned by the Approved WSP or The City.</li> <li>- Approved WSP conduit that enters, passes through, or terminates into The City asset such as an Access Box, or aggregation box will be subject to size restrictions.</li> <li>- One (1), 32 mm conduit per Approved WSP for a maximum of four (4), 32 mm conduits.</li> <li>- Interpole conduit will require careful consideration on design and investment model.</li> <li>- Interpole conduit is not required for existing developments, however it is an available option for collaborative builds or for a City-led development.</li> </ul>	✓	✓	✓
<p><b>Handhole specifications</b> for 9m, 12m and 15m galvanized <i>SLP</i>.</p> <ul style="list-style-type: none"> <li>- shall be in compliant with the following specifications:</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">   Dedicated120VwithFi bre.pdf </div> <div style="text-align: center;">   Dedicated120VwithFi ound.pdf </div> <div style="text-align: center;">   Dedicated240VwithFi breAndGround.pdf </div> </div> <ul style="list-style-type: none"> <li>- For all other pole types, the Approved WSP is responsible for costs incurred by The City to provide custom electrical specifications.</li> <li>- The City or its contractors shall have access to a “kill” switch to turn off the power to the Approved WSP Equipment for public safety or as part of any regular maintenance. <ul style="list-style-type: none"> <li>o The “kill” switch will come in the form of a 10a fuse located at the ground level inside the handhole of the <i>SLP</i>.</li> <li>o Prequalified contractors (prequalifications are based on The City’s standards) will be able to pull the fuse to de-energize the <i>SLP</i> while work is conducted.</li> </ul> </li> </ul>	✓	✓	✓
<p><b>tracer wire</b> (Access Box to Equipment on the <i>SLP</i>)</p> <ul style="list-style-type: none"> <li>- Approved WSPs will design with tracer wire for their conduit locates so underground infrastructure may be located.</li> <li>- The tracer wire will be grounded at the Access Box.</li> <li>- Tracer wire from the Approved WSP will be brought into the Access Box and attached within the Access Box.</li> </ul>	✓	✓	✓
<p>Approved WSPs must meet <b>Applicable Laws</b> (see below).</p>	✓	✓	✓

<sup>14</sup> Conduit between Access Boxes or from the aggregation point.

Requirement	Existing development <i>power from the SLP</i>	Existing development <i>power not from the SLP</i>	New development or redevelopment
<p><b>Access Box</b></p> <ul style="list-style-type: none"> <li>- The Access Box will be: <ul style="list-style-type: none"> <li>o 41cmx76cmx61cm.</li> <li>o Located adjacent to the pole at ground level - flush with grade.</li> <li>o Road rated</li> <li>o Accessible to all parties.</li> <li>o Labeled as follows: CoC Street Light Comms Access</li> </ul> </li> <li>- There will be <u>no power</u> in conduit; communications conduit only.</li> <li>- Should the Approved WSP require a designated power feed, it can not go through the Access Box. <ul style="list-style-type: none"> <li>o If ENMAX owned service cables go through the Access Box, only qualified utility employees will be able to access the box. Approved WSPs may have a termination splice within the box.</li> <li>o The size of splice case will be approved by the <i>SLP Asset Steward</i>.</li> </ul> </li> <li>- Conduit from the access box to the street light pole base shall be 32 mm – orange.</li> <li>- Approved WSPs will provide the fibre optic splice case.</li> <li>- Slack management: <ul style="list-style-type: none"> <li>o If no splice in Access Box, one slack loop (approximately 1m) within box.</li> <li>o With small <i>FOSC</i> in Access Box, max 10m slack loop on each cable.</li> <li>o All cables will be neatly coiled and racked within Access Box.</li> </ul> </li> <li>- Labeling standard: all cable in Access Box must be tagged to identify the owner and cable identifier.</li> <li>- Drop cable may be either: <ul style="list-style-type: none"> <li>o A pre-connectorized cable from the device to the Access Box where it can splice onto another cable; OR</li> <li>o A continuous cable, no splice, that terminates in the Approved WSP infrastructure.</li> </ul> </li> <li>- As of 2020 December 01, the standard Access Box is:</li> </ul> <div style="text-align: center;">  <p>BULK04 (1).pdf</p> </div>	✓	✓	✓

# Applicable Laws

Applicable Laws include but are not limited to the following:

- (a) Safety Codes Act
- (b) Alberta Electrical Utility Code (AEUC) and adopted CSA standards, including:
  - a. CSA C22.3 No.1-15 Overhead Systems
  - b. CSA C22.3 No.7-15 Underground Systems
  - c. CSA C22.3 No. 1-15 Overhead Lines
- (c) Alberta Occupational Health & Safety Act (OH&S)
- (d) Occupational Health and Safety Code Part 40: Utility Workers – Electrical
- (e) Labour Relations Code
- (f) Good Engineering Practice

Standards shall also include the following, where applicable:

- (a) CSA 22.1-18 Canadian Electrical Code
- (b) CSA C22.2 No. 41-13 Grounding and Bonding Equipment
- (c) CSA C83-96 (R2011) Communication and Power Line Hardware
- (d) Safety Code 6 (2009) Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz; Government of Canada (also IEEE C95.1)
- (e) ICES-Gen - Issue 1 - July 2018 > General Requirements for Compliance of Interference-Causing Equipment
- (f) IEEE Std 81 IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System
- (g) CSA 015-05 Wood Utility Designated Street Lights and Reinforcing Stubs
- (h) CSA ISO/IEC 11801 Information technology — Generic cabling for customer premises

## Technical:

- (a) [Standard Specifications for Street Light Construction](#)<sup>15</sup>;
- (b) [Material Catalogue](#)<sup>16</sup>
- (c) [Design Guidelines](#) for Street Lighting - Page 31 – Section 7.6<sup>17</sup>
- (d) [Design Symbols for Street Light Luminaires and Poles \(Feb. 2021\)](#)

**Others** include the following:

- (a) [Municipal Rights-of-Way Bylaw 17M2016](#)
- (b) [Streets Bylaw](#)
- (c) [Traffic Bylaw](#)

---

<sup>15</sup> [https://www.calgary.ca/PDA/pd/Documents/urban\\_development/publications/Streetlighting2006.pdf](https://www.calgary.ca/PDA/pd/Documents/urban_development/publications/Streetlighting2006.pdf)

<sup>16</sup> <https://www.calgary.ca/Transportation/Roads/Documents/Traffic/Traffic-signals-and-streetlights/Street-Lighting-Material-Catalogue.pdf>

<sup>17</sup> <https://www.calgary.ca/Transportation/Roads/Documents/Traffic/Traffic-signals-and-streetlights/Design-Guidelines-For-Street-Lighting.pdf>

- (d) Traffic Safety Act
- (e) Tree Protection Bylaw
- (f) Structure Pole Drawing Catalogue
- (g) [Streetlight Standards for AutoCAD](#)



## CITY PROCESS 3.0: Review site design

The ***Case Steward*** will:

1. Close the file, notify the *SLP Asset Steward* and update the *SLP* status on the online map from 'under review' to 'available' or 'conditionally available' if the Approved WSP does not provide notification to proceed within **sixty (60) calendar days** from the date the Approved WSP received the site feasibility decision and conditions as set out by the *SLP Asset Steward*.
2. Endeavor to carry out the following activities within **five (5) calendar days** of receipt of the Property-specific site design form from the Approved WSP.
  - (a) Review the form for completeness; and
  - (b) Notify the *SLP Asset Steward* once the form has been deemed complete.
3. Provide the Approved WSP with the decision and conditions set out by the *SLP Asset Steward*.

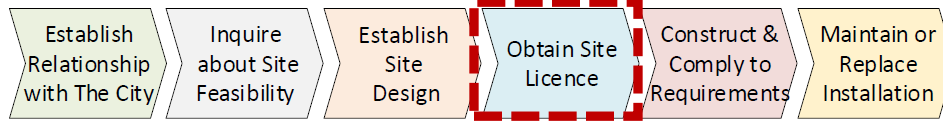
The ***SLP Asset Steward***, within **fourteen (14) calendar days** of the Property-specific design form deemed complete by the *Case Steward*, will endeavor to:

- (a) Review and update the Property-specific site design form and related documentation with a decision and conditions; and
- (b) If applicable, continue to engage the *TCPT* Technician on signage removal and relocation.

Once all changes or comments from the *SLP Asset Steward* have been addressed, the Approved WPS may proceed to IFC and submit request to Obtain Site Licence.

# Approved WSP: Obtain a Site Licence

## Wireless Service Provider's Journey



The **Approved WSP** will:

1. Notify the *Case Steward* within **fourteen (14) calendar days** of the date of the decision as noted in the Property-specific design form, if they wish to proceed with a Site Licence.
  - a. Email subject header: 'Obtain a site licence'
  - b. Email body:
    - i. File number (e.g. 001-01-*SLP*) for each pole;
    - ii. High-level construction schedule (to the satisfaction of The City);
    - iii. Approved IFC must be submitted in MicroStation format and PDF format in compliance with Streetlight Standards for AutoCAD. This submission shall include street light infrastructure only unless otherwise requested by the *SLP* Asset Steward. The City will import the design into a geodatabase that is made available to Alberta One Call to accurately locate buried facilities before ground disturbance takes place.
    - iv. High-level maintenance plan and schedule (to the satisfaction of The City);
    - v. Safety protocols (to the satisfaction of The City);
    - vi. Updated power assessment study;
    - vii. Letter of concurrence (if required);
    - viii. Confirmation of Utility Alignment Permit (if required); and
    - ix. Contact information  
Company [Click here to enter company name](#)  
Primary contact or agent name:  
Email: [Click here to enter primary email](#)  
Primary phone #: ###-###-####  
Secondary phone #: ###-###-####  
  
Secondary contact or agent name  
Email: Enter email of secondary contact  
Telephone: ###-###-####
2. Email the *SLP Asset Steward* when requesting to amend the design (see [Maintain and replace installation](#)), undertake a *Not Like-For-Like Replacement*, or terminate the site licence.
  - a. Email subject header: 'amending the design' or 'not like-for-like replacement' or 'terminate site licence'.
  - b. Email body:

i. File number (e.g. 001-01-*SLP*) for each pole;

ii. Contact information

Company [Click here to enter company name](#)

Primary contact or agent name:

Email: [Click here to enter primary email](#)

Primary phone #: ###-###-####

Secondary phone #: ###-###-####

Secondary contact or agent name

Email: Enter email of secondary contact

Telephone: ###-###-####

3. If the request to terminate is received less than **six (6) calendar months** prior to the renewal date, the Approved WSP shall incur the annual licence fee for the following year.
4. Unless otherwise negotiated (e.g. weather permitting or other limitations which might delay removal and restoration), the Approved WSP will complete the following prior to the expiry date of the Site Licence:
  - a. Remove the Equipment;
  - b. Remediate the site as per the remediation plan approved to the satisfaction of the *SLP Asset Steward*; and
  - c. Notify the *SLP Asset Inspector* once the site has been remediated.

#### **Additional Information**

**REMEMBER:** The Approved WSP is responsible for ensuring all electrical Equipment installed under Part 1 of the Canadian Electrical Code bear a certification mark or special inspection label that is recognized by the Standards Council of Canada. All installations shall meet or exceed all applicable structural standards, clearance standards and provisions of the latest codes. In case of conflict, the most stringent requirements shall prevail.

## CITY PROCESS 4.0: Administer Site Licence

The ***Case Steward*** will:

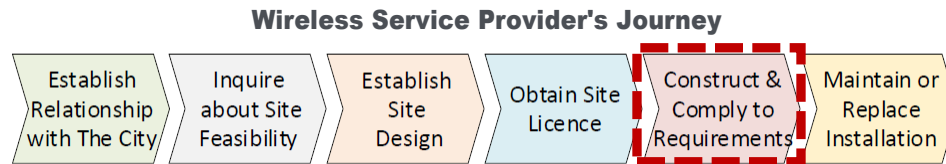
1. Close the file and notify the *SLP Asset Steward* if the Approved WSP does not provide notification to proceed within **fourteen (14) calendar days** from the date the Approved WSP receives the site design decision and conditions.
2. Upon notification from the *SLP Asset Steward* that a:
  - i. File has been closed, update the pole status on the online map from 'under review' to 'available' or 'conditionally available'.
  - ii. Site Licence has been issued, update the pole status on the online map from 'under review' to 'occupied'.

The ***SLP Asset Steward*** will:

1. Endeavor to issue a Site Licence within **fourteen (14) calendar days** of notification from the Approved WSP to proceed **and** upon receipt of the following:
  - i. High-level construction schedule;
  - ii. High-level maintenance plan and schedule;
  - iii. Safety protocols;
  - iv. Approved IFC;
  - v. Update power assessment;
  - vi. Letter of concurrence (if required); and
  - vii. Confirmation of Utility Alignment Permit (if required).
2. Notify the Approved WSP and *Case Steward* if a Site Licence is terminated by The City.
3. Where a Site Licence has expired or been terminated, the *SLP Asset Inspector*, will inspect the *SLP* to verify the remediation has followed the remediation plan as approved to the satisfaction of the *SLP Asset Steward*.
4. Renew, amend or terminate the Site Licence. Notify the *Case Steward* to update the *SLP* status on the online map.

5. On a case-by-case basis, approve up to a total of thirty-six (36) months to complete construction due to third party (e.g. developer, City project, etc.) construction delays or Approved WSP materials or resourcing delays.
  - a. If requested, the Approved WSP will provide proof of delay to The City.
  - b. Each extension will not exceed twelve (12) months.
  - c. The Approved WSP will continue to be responsible for Site Licence Fees regardless of the delay.

# Approved WSP: Construct & comply to requirements



The **Approved WSP** will:

1. Within **ninety (90) calendar days** of the date the Site Licence is issued, submit a construction schedule, to the satisfaction of The City, for approval by the *SLP Asset Inspector* prior to starting construction. The Approved WSP will be required to reconfirm that the loading conditions (power assessment) are the same between IFC and time of construction.
2. During construction:
  - (a) Stop construction and contact the *SLP Asset Inspector* to obtain approval for any deviations:
    - i. As approved at the time the Site Licence was issued; and
    - ii. Defined by the Utility Alignment Permit and in compliance with the setback guidelines as set out in [Section 7.6 of the Street Light Design Guidelines](#).
  - (b) Comply with all [Utility Alignment Permit](#) requirements as changes from time to time including but not limited to:
    - i. Ensuring that the latest construction schedule is uploaded to *CROWM*;
    - ii. Providing The City with **ten (10) calendar days** notice prior to starting work if The City is conducting an inspection;
    - iii. Observing and maintaining the standards and procedures as set out in the Temporary Traffic Control Manual;
    - iv. Repairing damage to the pole and if required pay for the cost to install a new pole; and
    - v. Ensuring the site is in the same condition as found.
3. Upon construction completion:
  - (a) Notify the *SLP Asset Inspector* within **seven (7) calendar days** of construction completion.
  - (b) Fill out and submit a [non-metered request form](#) to [streetlighting@calgary.ca](mailto:streetlighting@calgary.ca) which will be reviewed for accuracy, forwarded to ENMAX SiteID and used to calculate the annual power fees. This is not applicable where a new power feed is required.

- (c) Notify the *SLP Asset Inspector* within **seven (7) calendar days** of completing landscaping.<sup>18</sup>
  - (d) Provide a two-year workmanship guarantee for all landscaping;
  - (e) Remove debris, fencing, equipment, signage and return the site to its original condition within **seven (7) calendar days** of construction completion and **seven (7) calendar days** of landscaping completion; and
  - (f) Within **ninety (90) calendar days**, submit to the *SLP Asset Inspector*, As-Built Drawings for each installation as follows:
    - i. all drawings must be signed and stamped (physical or digital) by a prequalified consultant (prequalifications are based on The City's standards); and
    - ii. a copy of the email notice from *CROWM* confirming the construction completion date (only in cases where a Utility Alignment Permit was required).
4. Upon notification from the *SLP Asset Inspector* of inspection completion, resolve the deficiency within the specified resolution period and notify the *SLP Asset Inspector*.
  5. Only retain prequalified consultants and contractors (prequalifications are based on The City's standards). To determine if a consultant or contractor is qualified to work on the specific asset, please refer to the following lists located on calgary.ca:
    - o [Prequalified Firms for Engineering and Architectural Consultants](#)<sup>19</sup>
    - o [Prequalified Prime Contractor List](#)<sup>20</sup>

If the Approved WSP's consultant or contractor is not currently qualified, please refer to calgary.ca to learn more about [prequalification](#)<sup>21</sup>.

### **Additional Information**

**REMEMBER:** The Approved WSP are responsible for ensuring all electrical Equipment installed under Part 1 of the Canadian Electrical Code must bear a certification mark or special inspection label that is recognized by the Standards Council of Canada. All installations shall meet or exceed all applicable structural standards, clearance standards and provisions of the latest codes. In case of conflict, the most stringent requirements shall prevail.

<sup>18</sup> Wherever possible landscaping must be complete within the current construction year or by June 30 of the following year.

<sup>19</sup> <https://www.calgary.ca/content/dam/www/ca/fs/documents/bid-and-vendor-information/prequalified-engineering-architectural-consultants.pdf>

<sup>20</sup> <https://www.calgary.ca/CA/fs/Documents/Bid-and-Vendor-Information/PrequalifiedContractors.pdf>

<sup>21</sup> <https://www.calgary.ca/CA/fs/Pages/Bid-and-Vendor-Information/Prequalification.aspx>

# CITY PROCESS 5.0: Monitor for compliance

The ***Case Steward*** will: not applicable

The ***SLP Asset Steward*** will determine if a deviation request must return to design and if an amendment to the Site Licence is required.

The ***SLP Asset Inspector*** will:

1. Within **thirty (30) calendar days** of receiving the As-Built Drawings, endeavor to conduct a post-construction inspection which includes:
  - (a) Reviewing the IFC drawings and As-Built Drawings to confirm compliance against the current [Standard Specifications for Street Light Construction](#)<sup>22</sup>;
  - (b) Providing a list of deficiencies and required remediation with a specified time frame;
  - (c) Reviewing and checking the physical *SLPs* against the As-Built Drawings (including the notes);
  - (d) Ensuring there are no site location deviations;
  - (e) Ensuring any overhead wires have been removed (if applicable);
  - (f) Opening the handhole on each pole and examining the electrical connections against the most current [Standard Specifications for Street Light Construction](#)<sup>23</sup>; and Street Light Communications Infrastructure standards;
  - (g) Testing the circuit and all luminaires on the circuit when the lights are on at night; and
  - (h) Inspecting landscaping for compliance against the current [Standard Specifications for Street Light Construction](#)<sup>24</sup>; . If the date of construction completion is different from the date of landscaping completion, two inspections shall be conducted.

---

<sup>22</sup> [https://www.calgary.ca/PDA/pd/Documents/urban\\_development/publications/Streetlighting2006.pdf](https://www.calgary.ca/PDA/pd/Documents/urban_development/publications/Streetlighting2006.pdf).

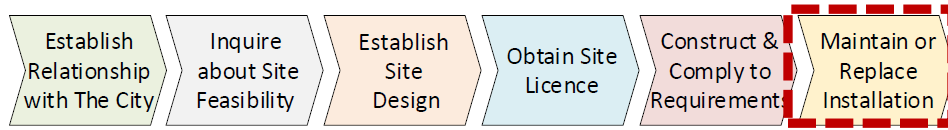
<sup>23</sup> [https://www.calgary.ca/PDA/pd/Documents/urban\\_development/publications/Streetlighting2006.pdf](https://www.calgary.ca/PDA/pd/Documents/urban_development/publications/Streetlighting2006.pdf).

<sup>24</sup> [https://www.calgary.ca/PDA/pd/Documents/urban\\_development/publications/Streetlighting2006.pdf](https://www.calgary.ca/PDA/pd/Documents/urban_development/publications/Streetlighting2006.pdf).



# Approved WSP: Maintain or replace installation

## Wireless Service Provider's Journey



The **Approved WSP** will:

1. On the **same day** of any *Planned Maintenance* the Approved WSP provide an email notification to the *SLP Asset Steward* as follows:

- (a) Email subject header: 'Planned maintenance'

- (b) Email body:

- (1) File number (e.g. 001-01-*SLP*) for each pole;
- (2) Expected start and expected finish for each pole; and
- (3) Contact information

Company [Click here to enter company name](#)

Primary contact or agent name:

Email: [Click here to enter primary email](#)

Primary phone #: ###-###-####

Secondary phone #: ###-###-####

Secondary contact or agent name

Email: Enter email of secondary contact

Telephone: ###-###-####

Approval is not required. The Approved WSP may proceed.

2. On the **same day** of any *Like-For Like Replacement*, the Approved WSP will provide an email notification to the *SLP Asset Steward* as follows:

- (a) Email subject header: 'like-for-like replacement'

- (b) Email body:

- (1) File Number (e.g. 001-01-*SLP*) for each pole;
- (2) Expected start and expected finish for each pole; and
- (3) Contact information

Company [Click here to enter company name](#)

Primary contact or agent name:

Email: [Click here to enter primary email](#)

Primary phone #: ###-###-####

Secondary phone #: ###-###-####

Secondary contact or agent name

Email: Enter email of secondary contact

Telephone: ###-###-####

Approval is not required. The Approved WSP may proceed.

3. *Not Like-For-Like Replacement*

- (a) If size or weight are increasing, go to [Establish Site Design](#).
- (b) If mounting height increases and / or requires new holes drilled into the pole, go to [Establish Site Design](#).
- (c) For all other changes to the As-Built Drawings, approval is not required. The Approved WSP will provide an email notification to the *SLP Asset Steward* on the **same day** as the *Not Like-For-Like Replacement* as follows:

Email subject header: 'not like-for-like replacement'

Email body:

- (1) File number (e.g. 001-01-*SLP*) for each pole;
- (2) Expected start and expected finish for each pole;
- (3) A brief description (e.g. changing internals of device or changing mounting mechanism) of what is changing; and
- (4) Contact information

Company [Click here to enter company name](#)

Primary contact or agent name:

Email: [Click here to enter primary email](#)

Primary phone #: ###-###-####

Secondary phone #: ###-###-####

Secondary contact or agent name

Email: Enter email of secondary contact

Telephone: ###-###-####

NOTE: any requirements to update or amend the concurrence letter is the responsibility of the Approved WSP.

4. In situations where The City has requested the Approved WSP to relocate Equipment, within **seven (7) calendar days** of notification, the Approved WSP will provide email notification to the *SLP Asset Steward* as follows:

Email subject header: relocation + file number (e.g. 01-01-*SLP*)

Email body:

- (1) File number (e.g. 001-01-*SLP*) for each pole;
- (2) Remediation plan, to the satisfaction of the *SLP Asset Steward*;
- (3) Contact information

Company [Click here to enter company name](#)

Primary contact or agent name:

Email: [Click here to enter primary email](#)

Primary phone #: ###-###-####

Secondary phone #: ###-###-####

Secondary contact or agent name

Email: Enter email of secondary contact

Telephone: ###-###-####

Approval is required. The Approved WSP will wait for a response from the *SLP Asset Steward* before proceeding.

**Additional Information**

**REMEMBER:** The Approved WSP is responsible for ensuring all electrical Equipment installed under Part 1 of the Canadian Electrical Code must bear a certification mark or special inspection label that is recognized by the Standards Council of Canada. All installations shall meet or exceed all applicable structural standards, clearance.

# City Process 6.0: Provide access for maintenance and replacement

The ***Case Steward*** will:

1. Upon notification from the *SLP Asset Steward* of site relocation, update the online map.

The ***SLP Asset Steward*** will:

1. Require all pre-qualified vendors working on designated *SLP* to:
  - (a) Turn off power to the Equipment prior to conducting regular maintenance activities; and
  - (b) Turn on power to the Equipment upon completion of regular maintenance activities.
2. Retain a passive *Planned Maintenance* and *Like-For-Like Replacement* log.
3. Provide a minimum of **ninety (90) calendar days** notification to the Approved WSP of any planned construction requiring major relocation (different Property). More notice will be provided if possible.
4. Review Calgary 3-1-1 service or City Claims Division requests, investigate for safety issues and determine the required remediation up to and including the immediate removal of a pole.
5. If The City is required to remove Equipment, the *SLP Asset Steward* will work with ENMAX Trouble<sup>25</sup>, when practical, to contact the relevant Approved WSP's Network Operations Centre (NOC). In these cases:
  - (a) the NOC shall be provided the option to attend the scene and remove the Approved WSP Equipment; OR
  - (b) the *SLP Asset Steward* shall remove the Approved WSP equipment, endeavor to hold it for **fourteen (14) calendar days** from the date of notification to the NOC. If the NOC does not retrieve the Equipment, the *SLP Asset Steward* shall dispose of the Equipment and restore the site at the expense (including storage costs) of the Approved WSP. The *SLP Asset Steward* and ENMAX Trouble are not responsible for any damage to the Approved WSP equipment.

---

<sup>25</sup> ENMAX Trouble is a division of the ENMAX Power Corporation (EPC). When ENMAX Trouble is deployed, an assessment is completed. If safety issues are identified, immediate action shall be taken to remove the impacted pole(s). To preserve structural integrity, if there is any damaged incurred on a pole with Approved WSP Equipment, the pole shall be automatically replaced. Typically, automatic replacement only occurs where there are dents on two of eight faces (or worse) on the pole.