



DEPARTMENT OF PUBLIC WORKS  
SMALL CELL DESIGN GUIDELINES  
For Small Cell Wireless Facilities in the Public Right-of-Way

*The City of Campbell seeks to permit wireless carriers to install small cell wireless communications Facilities, within the public right-of-way, in order to provide robust cellular coverage and capacity throughout the City; while ensuring Facilities are well-maintained and do not significantly detract from City streetscapes. These guidelines are in accordance with the City of Campbell's Municipal Code (CMC) Chapter 11.14. Separate design guidelines for small cell wireless communications facilities in the public right-of-way on City-Owned Poles and Non-City-Owned Poles are provided herein. (City-Owned Poles as described herein shall not include traffic signal poles.) Additional direction is provided separately with the Small Cell Permitting Guidelines which includes specific elements that should be shown on the plans.*

*Applicants shall comply with the following standards and preferences. If compliance is not technically feasible, applicants must demonstrate so in writing to the City.*

*The City Engineer may amend these guidelines as needed. Any applicable Master License Agreement (MLA) or encroachment agreements should be fully executed prior to proceeding.*

**POLE LOCATION PREFERENCES**

To aid in minimizing visual and aesthetic impacts, small cell wireless communications facilities (Facility(ies)) proposed in the public right-of-way, on either a City-owned pole or a non-City-owned pole, shall be designed, installed and located based on the following pole location preferences below.

The City prefers and strongly encourages Facilities in the public rights-of-way to be installed in locations ordered from most preferred to least preferred, as follows:

- a. On existing City-owned poles;
- b. On existing wood utility-owned or other non-City-owned poles;
- c. On a new non-City-owned pole.

Facilities should be installed on existing poles whenever technically feasible. If the application involves a lesser-preferred pole location, the applicant must identify all existing potential poles or support structures within 500 feet from the proposed site along the subject right-of-way that is available and technically feasible. The applicant must also demonstrate by clear and convincing evidence in writing that any of these identified existing poles or support structures within 500 feet from the proposed site

would be technically infeasible, and/or that the new support structure is the only technical feasible option to the exclusion of any alternative or reasonable combination of alternatives.

## **DESIGN GUIDELINES FOR CITY-OWNED POLES**

### Pole Location Standards For City-Owned Poles

1. New streetlight and other City-Owned poles for purposes of a new collocated small cell wireless communications facility (Facility) will not be permitted, except to replace existing poles. If the City agrees to a replacement pole, the replacement pole shall be: (i) located as close to the removed pole as possible, in the City's sole discretion; (ii) be aligned with the other existing poles along the public rights-of-way; and (iii) be compliant with all applicable standards and specifications required by the City.
2. Poles that are reserved for City use shall be avoided whenever technically feasible. For example, poles that are for traffic signal purposes or have existing electronic or communications devices are reserved. A Facility shall not interfere or cause interference with the operation of any City facilities or services, including, but not limited to, signs and sign visibility; banners; lighting; communication; parking meters; traffic signs or signals; luminaire schedule, performance, and effectiveness. Contact City permit review staff for more information.
3. A Facility shall not interfere with access to a fire hydrant, fire station, fire escape, water valve, underground vault, valve housing structure or any other public health or safety facility.
4. A Facility shall not interfere with or cause interference with any access to any doors, gates, sidewalk doors, or other ingress and egress points to any building appurtenant to the rights-of-way.
5. Locations where City-owned poles are in front, and within 100 feet horizontal distance, of architecturally significant features, or in locations where a property's primary view is impacted should be avoided whenever technically feasible.
6. Poles, appurtenances or the Facility should not be in close proximity to existing overhead utilities. Poles, appurtenances and the Facility shall have at least 10 feet of clearance from high voltage, and exceed the minimum separation from overhead utilities required by CPUC General Order 95.
7. All new Facilities on poles require a new encroachment permit and shall comply with any applicable standards and specifications required by the City.
8. Poles showing signs of damage or corrosion should be replaced with Caltrans Type 15.
9. New foundations are required when replacement of City-Owned poles are necessary.
10. Luminaires on existing poles to be replaced should be re-installed with a luminaire approved by the City.
  - a. Luminaires damaged during construction should be replaced with a new luminaire approved by the City.
  - b. Luminaire's height and lateral distance from face of curb should not be modified.
  - c. Luminaires may be converted to LED in order to free up circuit capacity for wireless equipment electrical load. Converted LED luminaires should maintain lighting schedule, performance and effectiveness in accordance with a lighting analysis (AGI 32 or equal), or as approved by the Engineer.
11. Pole number labels, if incorrect or missing, shall be corrected.

12. Facilities shall conform with the Policy on Street Cut Moratorium and other restrictions. See the following for more information: <https://www.ci.campbell.ca.us/186/Encroachment-Permits>.

#### Typical Design For City-Owned Poles

1. Typical design shall show proposed plan view, detailed plan view, existing and proposed elevations, and details of warning labels, equipment, enclosures, wiring diagram, and cabling diagram.
2. Ground level installations, such as above ground cabinets, are not preferred. The City prefers and recommends that, except for wiring and cabling, the Facility shall be located entirely on the pole with equipment located either within side mounted enclosures, or on top of the pole within the antenna shroud.
  - a. The City recommends that the PG&E smart meter be located within the antenna shroud.
3. The Facility is limited to a maximum of 4 added equipment enclosures per pole including antenna shroud, 2 radio enclosures, and a PG&E disconnect switch.
  - a. All enclosures shall be in a vertical linear arrangement on one side of the pole.
  - b. Equipment should have long narrow profiles and have a 2" maximum offset from the pole.
  - c. Dimensions of each equipment enclosure should be less than 18"x9"x6", except the pole top mounted enclosure should be less than 40"x11" diameter.
  - d. All equipment should be 8 feet minimum above grade.
  - e. PG&E disconnect switch should be 10 feet maximum above grade.
4. The Facility shall not impact a property's primary view whenever technically feasible.
  - a. Enclosures shall be mounted behind signs (where available and technically feasible) to minimize visual impact.
5. The Facility shall be designed in accordance with the requirements for streetlight facilities and appurtenances including hardware, corrosion protection, signs, labels and matching finish.
6. Fans shall not be utilized. An acoustical study is required for Facilities that generate noise levels exceeding the maximum as per CMC Section 21.16.070.
7. The Facility may not have generators or generator sockets.
8. The Facility shall include signage that accurately identifies the Facility owner/operator, the owner/operator's site name or identification number and a toll-free number to the owner/operator's network operations center. Facility may not bear any other signage, lights, or advertisements unless expressly approved by the City, required by law or recommended under existing and future FCC or other United States governmental agencies for compliance with RF emissions regulations.
9. RF notification signs shall be placed where appropriate, with at least one occupational notice facing the street on the pole below and within 12 inches of the bottom of the antenna shroud.
10. Equipment for a Facility shall minimize visual clutter and be as visually unobtrusive as possible with regard to appearance, size, and location whenever technically feasible. If installations are available (e.g., have been installed in other jurisdictions) that are less intrusive than those allowed by the City's telecommunications ordinance, applicants should use those installations unless the City Engineer determines that those installations are not feasible.

11. The antenna shroud shall not impinge on removal of the mast arm.
12. The Facility shall have all wiring, cabling, and conduit concealed from the public view, e.g. underground or within the pole.
13. Wiring and cabling for the Facility shall be labeled in the pole hand hole and all pull boxes with the company name and function, e.g. "YOUR WIRELESS COMM", and "YOUR WIRELESS POWER".
14. The Facility power shall be connected to a PG&E smart meter.
15. Structural analysis of the Facility shall be provided per the Small Cell Permitting Guidelines.

#### Site Design For City-Owned Poles

16. The Facility, modifications to existing infrastructure, modified existing infrastructure or replacements thereof, and existing circuits and service cabinets that connect the Facility, shall comply with all requirements, codes and regulations including City specifications and details, California Electrical Code, 2CPUC General Orders, PG&E and FCC.
17. Circuit tracing shall be completed using proper circuit tracing equipment.
18. A pull box shall be existing or be installed at the base of the pole. Connection for wireless power should be made in the pull box at the base of the pole.
19. New pull box to be City type, size #3.5 minimum.
20. Streetlight control systems without continuous power at the base of the pole should be modified. These systems are typically either photocells integrated in the luminaires, or a photocell controlled contactor in a service cabinet. Streetlight systems controlled with contactors should install photocells on each luminaire, and modify or replace the service cabinet. A new luminaire is necessary wherever an existing luminaire does not have a NEMA twist-lock photocell receptacle.

### **DESIGN GUIDELINES FOR NON-CITY-OWNED POLES**

#### Pole Location Standards for Non-City-Owned Poles

1. Locations where utility poles are in front, and within 100 feet horizontal distance, of architecturally significant features, or in locations causing visual impacts of significance shall be avoided whenever technically feasible.
2. A Facility may not encroach onto or over any private or other property outside the public rights-of-way without the property owner's express written consent in the form of an easement agreement.
3. A Facility shall not interfere with access to a fire hydrant, fire station, fire escape, water valve, underground vault, valve housing structure or any other public health or safety facility.
4. A Facility shall not interfere or cause interference with the operation of any City facilities or services, including, but not limited to, signs and sign visibility; banners; lighting; communication; parking meters; traffic signs or signals; luminaire schedule, performance, and effectiveness.
5. A Facility shall not interfere with or cause interference with any access to any doors, gates, sidewalk doors, or other ingress and egress points to any building appurtenant to the rights-of-way.
6. All replacement poles for a Facility shall: (i) be located as close to the removed pole as possible; (ii) be aligned with the other existing poles along the public rights-of-way; and (iii) be compliant with all applicable standards and specifications required by the City.

7. All new Facilities on poles require a new encroachment permit and shall comply with any applicable standards and specifications required by the City.
8. Facilities must conform to the Policy on Street Cut Moratorium and other restrictions. See the following for more information:  
<https://www.ci.campbell.ca.us/186/Encroachment-Permits>.

#### Typical Design for Non-City-Owned Poles

9. Typical design must show proposed plan view, detailed plan view, existing and proposed elevations, and details of wireless notices, signage, equipment, enclosures, wiring diagram, and cabling diagram.
10. Ground level installations, such as above ground cabinets, are not preferred.
11. The Facility shall not impact a property's primary view whenever technically feasible.
12. Equipment must have long narrow profiles that avoid wide offsets from the pole.
  - a. Antenna and antenna enclosure should be less than 48 inches high by 14.6 inches in diameter.
  - b. For wood poles, radio equipment, switch, mounting channel and appurtenances should be less than 11.0 feet high by 18 inches wide by 23 inches pole offset.
  - c. For metal poles, the diameter shall not exceed 13 inches for the pole and integrated enclosures including radio equipment, switch, and appurtenances. Facilities must be less than 32 feet above finished grade.
13. Fans shall not be utilized. An acoustical study is required for Facilities that generate noise levels exceeding the maximum as per CMC Section 21.16.070.
14. The Facility may not have generators or generator sockets.
15. Facility must include signage that accurately identifies the Facility owner/operator, the owner/operator's site name or identification number and a toll-free number to the owner/operator's network operations center. Facility may not bear any other signage, lights, or advertisements unless expressly approved by the City, required by law or recommended under existing and future FCC or other United States governmental agencies for compliance with RF emissions regulations.
16. Facility must comply with all requirements, codes and regulations including CPUC General Orders, California Electrical Code, PG&E and FCC.
17. Equipment for a Facility must minimize visual clutter and be as visually unobtrusive as possible with regard to appearance, size, and location whenever technically feasible. If installations are available (e.g., have been installed in other jurisdictions) that are less intrusive than those allowed by the City's telecommunications ordinance, 4 applicants must use those installations unless the City Engineer determines that those installations are not feasible.
18. The Facility shall be designed with corrosion protection and finish as follows:
  - a. For wood poles, the color shall be Valspar Deep Earth, Kelly Moore Mesa Brown, or equal.
  - b. For metal poles, the finish shall be a high-sheen light gray color. Light gray color to be similar to aged galvanized steel without colorant.
19. Any required structural analysis shall be provided per the Small Cell Permitting Guidelines.