



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 Utility-Owned Wood 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.

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

DESIGN GUIDELINES FOR CITY-OWNED POLES

Pole Location Preferences

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.
2. Poles that are reserved for City use should be avoided. Contact City permit review staff for more information. For example, poles that are for traffic signal purposes or have existing electronic or communications devices are reserved.
3. 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.
4. Poles, appurtenances or the Facility should not be in close proximity to existing overhead utilities. Poles, appurtenances and the Facility should have at least 10 feet of clearance from high voltage, and exceed the minimum separation from overhead utilities required by CPUC General Order 95.
5. All new Facilities on poles require a new encroachment permit.
6. Poles showing signs of damage or corrosion should be replaced with Caltrans Type 15.
7. New foundations are required when replacement of City-Owned poles are necessary.
8. 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.
9. Pole number labels, if incorrect or missing, should be corrected.
10. Facilities should 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

11. Typical design should show proposed plan view, detailed plan view, existing and proposed elevations, and details of warning labels, equipment, enclosures, wiring diagram, and cabling diagram.
12. 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.
13. 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.
14. The Facility should not impact a property's primary view if possible.
 - a. Enclosures should be mounted behind signs (where available) to minimize visual impact.
15. The Facility should not interfere with City operations, e.g. sign and signal visibility.
16. The Facility should be designed in accordance with the requirements for streetlight facilities and appurtenances including: hardware, corrosion protection, signs, labels and matching finish.
17. Fans should not be utilized. An acoustical study is required for Facilities that generate noise levels exceeding the maximum as per CMC Section 21.16.070.
18. The Facility may not have generators or generator sockets.
19. The Facility should 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.
20. RF notification signs should 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.
21. Equipment for a Facility shall minimize visual clutter and be as visually unobtrusive as possible with regard to appearance, size, and location. 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.
22. The antenna shroud should not impinge on removal of the mast arm.
23. The Facility should have all wiring, cabling, and conduit concealed from the public view, e.g. underground or within the pole.
24. Wiring and cabling for the Facility should 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".
25. The Facility power should be connected to a PG&E smart meter.

Site Design

26. The Facility, modifications to existing infrastructure, modified existing infrastructure or replacements thereof, and existing circuits and service cabinets that connect the Facility, should comply with all requirements, codes and regulations including City specifications and details, California Electrical Code,

CPUC General Orders, PG&E and FCC.

27. Circuit tracing should be completed using proper circuit tracing equipment.
28. A pull box should 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.
29. New pull box to be City type, size #3.5 minimum.
30. 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 UTILITY-OWNED WOOD POLES

Pole Location Preferences

1. Where a new collocated small cell wireless communications facility (Facility) is necessary, installation of the Facility on existing City-owned poles is encouraged in order to preserve the community's aesthetic values.
 - a. New wood utility poles are not preferred.
 - b. 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 should be avoided.
2. All new Facilities on poles require a new encroachment permit.
3. 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

4. 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.
5. Ground level installations, such as above ground cabinets, are not preferred.
6. The Facility should not impact a property's primary view if possible.
7. The Facility must not interfere with City operations, e.g. sign and signal visibility, luminaire schedule, performance, and effectiveness.
8. 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. Radio equipment, switch, mounting channel and appurtenances should be less than 11.0 feet high by 18 inches wide by 23 inches pole offset.
9. Fans should not be utilized. An acoustical study is required for Facilities that generate noise levels exceeding the maximum as per CMC Section 21.16.070.
10. The Facility may not have generators or generator sockets.
11. 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.
12. Facility must comply with all requirements, codes and regulations including CPUC General Orders, California Electrical Code, PG&E and FCC.
13. Equipment for a Facility must minimize visual clutter and be as visually unobtrusive as possible with regard to appearance, size, and location. 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 must use those installations unless the City Engineer determines that those installations are not feasible.

14. The Facility should be designed with corrosion protection and finish with color of Valspar Deep Earth, Kelly Moore Mesa Brown, or equal.