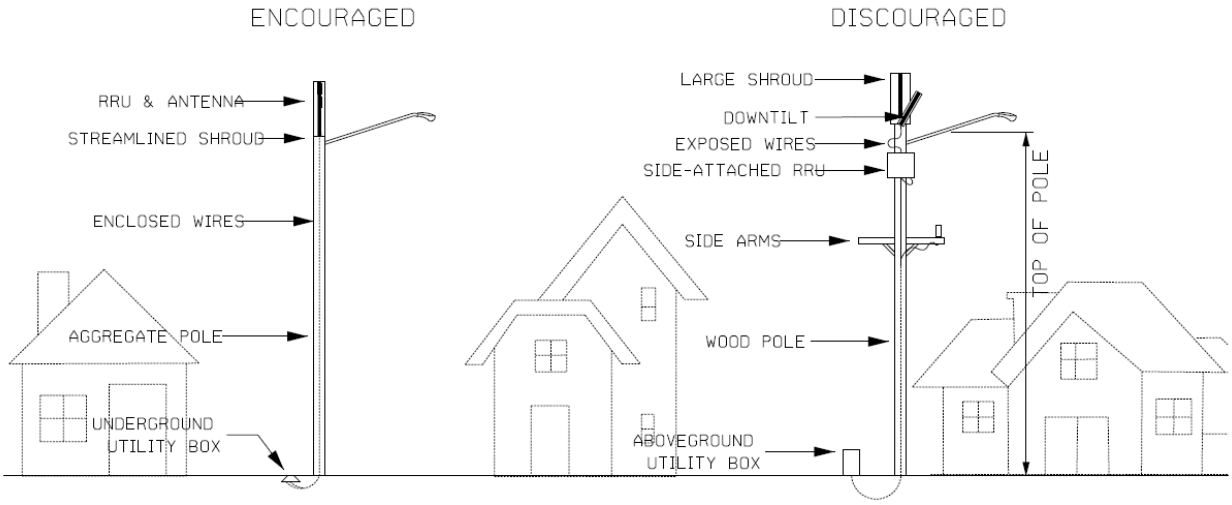
CITY OF SANTA ANA

GUIDELINES FOR WIRELESS FACILITIES IN THE PUBLIC RIGHT OF WAY

September 2021

GUIDELINES FOR WIRELESS FACILITIES IN THE PUBLIC RIGHT-OF- WAY



The City of Santa Ana seeks to permit wireless carriers to install small cell wireless facilities within the public right-of-way in order to provide improved cellular coverage and capacity throughout the City; while ensuring facilities are well-maintained and do not significantly detract from City streetscapes. The Public Works Agency may update the Design Guidelines and Standards from time to time at the discretion of the Director of Public Works.

These Design Guidelines are published on the City's Public Works website (https://www.santa-ana.org/sites/default/files/pw/documents/wireless_design_standards_guidelines). The public is encouraged to check this website regularly for updates.

1. **Stealth Design**

   a. A "stealth facility" (or "stealth facilities") means a wireless facility designed to look like something other than a wireless tower or base station.

   b. **Stealth.** All wireless facilities shall be stealth. Stealth elements and techniques should be used to blend the facility with surrounding materials and colors of the support structure and make the facility appear to be something other than a wireless facility. Stealth elements include, but are not limited to, the following:

      i. Radio frequency (RF) transparent screening or shrouds;

      ii. Matching the color of the existing support structure by painting, coating, or otherwise coloring the wireless facility, equipment, mounting brackets, and cabling;

      iii. Placing cables and wires inside the pole or beneath conduit of the smallest size possible;

      iv. Minimizing the size of the site;

      v. Installing new infrastructure that matches existing infrastructure in the area surrounding the proposed site; and

      vi. Using paint of durable quality.

2. Preferred Structures and Locations

a. **Support Structure Hierarchy**. The following is the City's required hierarchy for small cell wireless facility attachments to support structures in the public rights-of-way, ordered from the most preferred to the least preferred. Provide an alternative analysis demonstrating that a more preferred wireless facility attachment was not technically feasible.

i. Existing or new replacement Cobra Head streetlight;

ii. New Cobra Head streetlight; *

iii. New steel stand-alone pole;**

iv. Strand Mounted;

v. Attachment to an existing or new replacement wood utility pole; and

vi. Any other type of pole that the Director determines meets these Guidelines.

b. **Prohibited Support Structures.** Small cell wireless facilities shall not be permitted on the following:

i. Existing decorative poles;

ii. Traffic signals;

iii. Any utility pole scheduled for removal or relocation within 18 months from the time the Director acts on the wireless facility application; or

iv. New, non-replacement wood utility poles, unless a waiver is approved by the Director to prevent a prohibition of service.

c. **Location Hierarchy.** The following is the City's required hierarchy for locations for small cell wireless facilities in the public right-of-way, ordered from most preferred to least preferred:

i. Non-Residential Districts.

1. Locations within, or immediately adjacent to, districts where residential uses are not permitted uses (e.g. industrial, commercial and industrial districts with no residential overlay) on or along major, primary or secondary arterials;

2. Locations within, or immediately adjacent to, districts where residential uses are not permitted on or along divided collector arterials or collector arterials; or

3. Locations within, or immediately adjacent to, districts where residential uses are not permitted uses on or along local streets.

ii. Residential Districts.

1. Locations within, or immediately adjacent to, districts where residential uses are permitted uses on or along major, primary or secondary arterials;

2. Locations within, or immediately adjacent to, districts where residential uses are permitted uses on or along divided collector arterials or collector arterials; or

3. Locations within, or immediately adjacent to, districts where residential uses are permitted uses on or along local streets.

*preferred in underlit areas, including areas with decorative lights if the adjacent street has predominant Cobra Head streetlights; otherwise, new Cobra Head streetlight installations will be considered on a case-by-case. No waiver is required.

** When an applicant proposes to install a small cell in a Historical District or neighborhood/corridor that maintains unique streetlight aesthetics, the applicant may propose small cell infrastructure that most closely matches adjacent infrastructure to the maximum extent feasible. The characteristics of unique assemblies may include mast arms, decorative pole bases, architectural luminaires, mounting heights, pole colors, etc. that deviate from these Design Guidelines and Standards, as approved by the Director. No waiver is required.

d. **Additional Location Requirements.** The City also requires small wireless facilities in the public rights-of-way to be installed as follows:

i. **Sight Distance Triangles**. New poles should not be placed within any sight distance triangles at any intersections.

ii. **Distance from Driveways.** New poles, regardless of zone, must be placed at least 10 feet away from any driveway.

iii. **Near Property Lines.** New or new replacement poles regardless of zone, should be placed as close as feasible to a property line between two parcels that abut the public right-of-way.

iv. **Historic Structures or local landmarks.** A wireless facility shall not be installed within 100 feet of the property boundary of designated historic structures or local landmarks.

v. **Facility Distance.** The minimum horizontal distance between a new wireless facility and any other existing or permitted but unconstructed, wireless facility on the same side of the right-of-way, at the time a complete application is filed with the City, irrespective of the owners/operators, shall be not less than 300 linear feet, as measured parallel to the right-of-way.

3. Description of Tiers (The following Tiers are as referenced in SAMC Section 33-239 indicating noticing preferences and Related Design Standards)

a. Tier 1: Eligible Facilities Requests Modification.

Eligible Facilities Requests (EFRs) as set forth in Section 1455 of Title 47 of the United States Code and 47 C.F.R. § 1.6100.

Involves certain modifications of an existing support structure that do not substantially change the physical dimensions of such support structure, involving (i) the collocation of new transmission equipment; (ii) removal of transmission equipment; or (iii) replacement of transmission equipment.

b. Tier 2: Small cell installations or modifications to an existing tower or base station that substantially changes the physical dimensions of such tower or base station as defined by the FCC in 47 C.F.R. § 1.6100, as may be amended.

Tier 2 involves the installation of a new small cell wireless facility that substantially changes an existing support structure; or involves the modification of a small cell wireless facility on an existing support structure and such modification constitutes a substantial change.

The preferred structures and locations for new small cell wireless facility installations are listed in Section 2 of these guidelines.

An applicant may propose to install new infrastructure to accommodate a small cell wireless facility in accordance to Section 2.a “Support Structure Hierarchy” of these guidelines. See **Tier 3** for guidelines for new infrastructure installations.

i. Streetlight Attachment

1. Top-of-Pole Mounted Antenna

1.1 A top-of-pole mounted antenna is preferred, when technically feasible.

1.2 The antenna shall be the smallest possible volume but in no case greater than three (3) cubic feet.

1.3 To the extent technically feasible, the antenna must be concealed in a radio frequency (RF) transparent screen. If concealment is not technically feasible, the Antenna shall be as close as possible to the pole or installed flushed to pole and coated or painted an approved color to

Ex. Stealth Poles

1.4 Match the existing pole. The small size of the antenna or RF screen and color treatment is considered to camouflage the installation.

1.5 Top-of-pole mounted installations shall not increase the height by more than six (6) feet over the height of the existing pole. The maximum height of the streetlight, including shroud, shall be thirty-five (35) feet.

1.6 Comply with City Standard Plan #1126K.

2 Side Mounted Antenna

2.1 Equipment shroud shall be mounted flush to the pole.

2.2 The antenna shall be the smallest possible volume but in no case greater than three (3) cubic feet.

2.3 Equipment shroud mounted facing away from approaching traffic is preferred.

2.4 Equipment shroud shall be no wider than the maximum outside diameter of the pole, to the extent possible.

2.5 Antenna and/or equipment shroud shall not protrude more than eighteen (18) inches from the surface of the streetlight. All cables shall be concealed inside the pole.

2.6 When the antenna is mounted to the pole with a bracket, the bracket shall be coated or painted an approved color to match the existing pole.

2.7 Comply with City Standard Plan #1126K.

ii. Streetlight Replacement

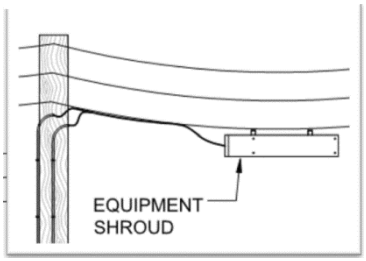
1. The applicant may propose a streetlight replacement in order to accommodate a wireless facility. In such case, the new infrastructure shall be dedicated to the City and will have a primary purpose other than a wireless facility and the wireless facility will be the secondary use.

2. If a replacement streetlight is proposed to accommodate a wireless facility, the replacement pole shall be a stealth facility and designed to resemble existing poles in the right-of-way near that location, including size, height, color, materials, and

style, with the exception of any existing pole designs that are scheduled to be removed and not replaced.

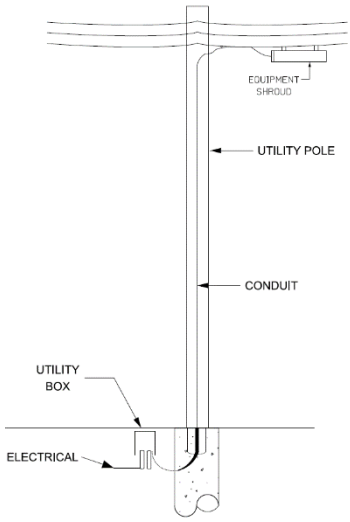
3. The replacement streetlight shall be offset at the minimum distance technically feasible from the existing streetlight.
4. Integrated streetlight poles may be installed at existing streetlight locations (replacement) or at new locations that comply with City standards for spacing and conform to the character of the surrounding neighborhood, as approved by the Director.
5. In the event the streetlight mast arm and luminaire are required to be replaced, the equipment must match requirements on City Standard Plan #1126H.
6. Equipment, other than antennas and radios, must be underground or below grade.
7. Comply with City Standard Plans #1126N and 1126H.

iii. Strand Mounted Shroud on Existing Aerial Utility Wires



Strand Mounted Shroud

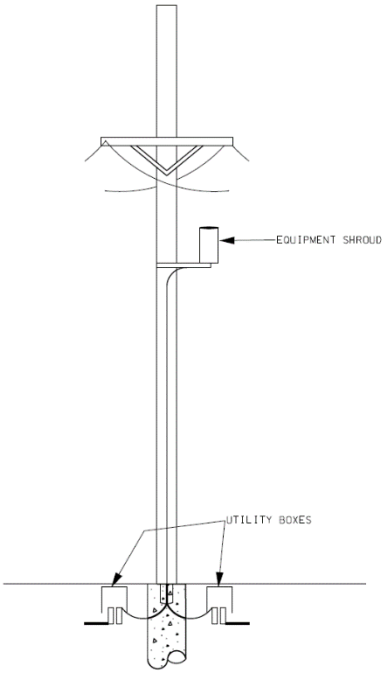
1. Strand mounted wireless facilities are permitted provided that such facilities comply with the applicable provisions of California Public Utilities Commission General Order 95 and any other applicable health and safety regulations, as may be revised or superseded.
2. When technically feasible, it is preferred to have all wireless facility equipment, including antenna and radios, concealed within an equipment shroud.
3. Only one strand mounted antenna is permitted per cable between two existing poles.
4. All components of strand mounted wireless facilities, including but not limited to the antenna, radio units, power converters, power amplifiers and fiber splice boxes, shall not exceed three (3) cubic feet in total volume. Equipment should be as narrow as possible to mimic the cable profile, and should be painted an approved color.



5. Strand mounted wireless facilities shall be placed as close as technically feasible to the nearest utility pole, in no event more than six (6) feet from the pole, unless a greater distance is required by the pole owner for safety clearance.
6. No strand mounted wireless facility shall be located in or above the portion of the roadway open to vehicular traffic.
7. When utility companies do not allow cabling to be concealed within the pole, one cable may run outside the pole, attached to the pole, painted to match. Cables must not hang or loop and should be directly against the pole until the transition to the cable strand, then should run directly along the strand (painted to match) to the wireless facility.
8. More than one cable must be concealed within a cable riser/drop attached directly to the pole and running parallel to the pole, of the absolute minimum diameter necessary for concealment, and painted to match the pole. At transition to strand, should run directly along the strand (painted to match) to wireless facility.

iv. Wood Utility Pole Attachment

1. Side-Mounted Antenna on cantilever cross arm



Side-Mounted Antenna On Cross Arm

1.1 Only one antenna is permitted per wood utility pole.

1.2 Antenna and/or equipment shall be mounted to a cantilever cross arm and create a single, unified body.

1.3 Antenna shall be the smallest possible volume but in no case greater than three (3) cubic feet.

1.4 Cross arm should be parallel to roadway.

1.5 Antenna and/or equipment shall be concealed in a cylindrical shroud, including cables connections, antenna mount and other hardware. GPS antennas must be placed within the shroud or directly above the shroud, not to exceed six (6) inches.

1.6 Cylindrical shroud shall be no wider than the maximum outside diameter of the pole, to the extent possible.

1.7 All horizontal cables shall be encased within the bracket arm to the extent technically feasible.

1.8 All cables should be concealed to the extent technically feasible.

1.9 To the extent technically feasible, all wiring running along the length of the pole shall be enclosed in appropriate conduit colored to match the existing pole and installed flush to the pole (no riser/drop or equipment stand-off brackets). Otherwise, cabling traversing the pole shall be within a cable riser/drop of the absolute minimum diameter necessary for concealment, and painted to match the pole

1.10 Equipment installed on a cross arm shall be coated or painted an approved color to match the existing pole.

1.11 Maximum length of cross arm: 48”

1.12 Maximum antenna height, including shroud: 36”

1.13 Antennas and/or equipment should be placed in an effort to minimize visual clutter and obtrusiveness.

1.14 Equipment shall be mounted directly to the pole at a minimum of eight (8) feet above the existing grade and coated or painted an approved color to match the existing pole.

1.15 Equipment, other than antennas and radios, are preferred underground or below grade.

1.16 A wood utility pole may be replaced with a taller pole for the purposes of accommodating a wireless facility; provided, that the replacement pole shall not increase the height of the existing pole by more than ten percent (10%) of the height of the existing pole or result in the overall height of the existing pole to exceed fifty (50) feet, whichever is greater, unless a further height increase

is required and confirmed in writing by the pole owner and that such height extension is the minimum extension possible to provide sufficient separation and/or clearance from electrical and wireline facilities.

1.17 Maximum of two risers/drops per wood utility pole.

1.18 If the existing wood utility pole already has more than two existing risers/drops, the pole must be replaced with a pole that conforms to the character of the surrounding neighborhood, and that allows the new cables and wires to be inside the pole, in conduit, as approved by the Director.

1.19 The maximum height for attachments to wood utility poles, from ground level as measured from the nearest street curb, including wireless facility, shall be thirty-five (35) feet when placement is within one hundred forty (140) feet of property zoned or used for residential purposes. For attachments outside property zoned or used for residential purposes, the maximum height, including wireless facility, shall be sixty (60) feet.

c. Tier 3 Small Cell Installations on New Infrastructure

i. The new infrastructure shall be a stealth facility, as defined above, and designed to resemble existing poles in the right-of-way near that location, including size, height, color, materials, and style, with the exception of any existing pole designs that are scheduled to be removed and not replaced.

ii. The new infrastructure shall conform to the character of the surrounding neighborhood, as approved by the Director and as required by these guidelines.

iii. New wood utility poles are prohibited, unless a waiver is approved by the Director to prevent a prohibition of service.

iv. Tier 2 Guidelines are applicable.

General Notes:

(a) All installations shall fully comply with the California Public Utilities Commission ("CPUC") General Orders, including, but not limited to General Order 95 ("GO 95"). None of the design guidelines are meant to conflict with or cause a violation of GO 95, including, but not limited to, its standards for a safe installation on a utility pole. Accordingly, the Guidelines can be adjusted at the City's discretion to ensure compliance with CPUC rules on safety.

(b) All cables should be concealed to the extent technically feasible.

(c) If multiple requests are received to collocate a wireless facility on the same wireless support structure, priority will be given to the first request received that meets the Wireless Facilities guidelines.

(d) Wireless facilities installed on City-owned infrastructure in the public rights-of-way shall use a valid master license agreement with the City. In the event of a conflict with the master license agreement and these guidelines, the terms of the master license agreement shall control.

(e) A wireless facility shall not be located within any portion of the right-of-way that interferes or may interfere with City and emergency operations and pedestrian/vehicular access.

(f) No component of a wireless facility shall extend six (6) feet beyond the top of a pole.

(g) To the extent technically feasible, all wireless facilities that operate normally when coated or painted or are otherwise coated shall have subdued colors and non-reflective materials that blend with the materials and colors of the surrounding area and structures to the reasonable satisfaction of the City.

(h) The City strongly encourages site operators to use flat-rate electric service when it would eliminate the need for a meter. Where meters are required, use the narrowest electric meter and disconnect available.

(i) Vaults and pull boxes shall be installed flush to grade.

(j) Equipment shall not interfere with existing City facilities.

(k) Equipment shall maintain appropriate clearance from existing utilities.

(l) No installation shall be within ten (10) feet of a door or window nor placed within ten (10) feet of a window located at a similar height of the wireless facility.

(m) Well-camouflaged stealth designs and screening shall be used to minimize visual impact of the wireless facility. For example, the visual impact of a wireless facility may be mitigated by integrating it into existing functional facilities, by the planting of trees to screen the antenna from adjacent private properties.

(n) Existing landscaping and irrigation systems shall be restored to like or better condition approved by the Director in accordance with the City's landscaping standards.

(o) Please note that as a condition of approval, the applicant must submit the following upon the construction and completion of a wireless facility:

1) Photographs of the installed wireless facility.

2) Digital data to be used by the City's Geographical Information System (GIS) in preparing exhibits, maps, etc. to include the following:

- Provide data in a vector format. Examples of some acceptable formats are:
- Autocad (.dwg or .dxf)
- Google Earth (.kml or .kmz)
- Shapefile (.shp)
- Use underscores or hyphens in the file name, not spaces. Provide a separate drawing file

for each individual sheet created in Autocad.

- For Autocad files or Shapefiles, define the coordinate system as NAD 1983 State Plane, California Zone 6 (US Feet)
- For Autocad files, create all data elements in model space, add layout elements in layout space, save the model in model space, do not add viewports to model space and explode the blocks.
- Provide data for all conduits, boxes, nodes, etc. installed during the project. Submittal shall be from “As-Built” data, not original designs.

These general notes are in addition to the items listed under Article X to Chapter 33 of the Santa Ana Municipal Code.