

Proposed Design Standards

By Resolution of the City Council, staff is proposing adoption of design standards for small cell telecommunications facilities in the public right-of-way. The purpose of the proposed standards is to provide guidance and consistency in the design of wireless telecommunication facilities. It does not dictate specific requirements but illustrates the desired level of design quality and configuration for any proposed wireless telecommunication facility including factors such as location, material and color, and form and placement. The below standards are intended to be applicable for all poles including street light poles and power poles within the City's Right-of-Way. **Approval of deviations from the design standards shall require the applicant to demonstrate that the proposal is the least visually intrusive design and location feasible and is necessary to close gaps in coverage.**

Location:

1. Siting: Preferred location is within non-residential neighborhoods (500 feet away from residential zones). Should the location be within a residential neighborhood, reasonable efforts shall be made to ensure that the facility is not in direct view of residential living areas such as living rooms, bedrooms, etc.
 - a. Within 500 feet of a residential zone, noise limit from any small cell facility shall be 5dBA above ambient sound, not to exceed 30 dBA as measured at the property line. Other federal, state or city noise regulations may apply.
2. Small cell facilities shall not be installed on electrical/electronic traffic control devices' poles/hardware such as traffic signals, pedestrian hybrid beacons (formerly known as HAWK), Rectangular Rapid Flashing Beacons (RRFB), and flashing beacons.
3. All equipment located within the City's ROW shall be located such that it meets ADA requirements and does not obstruct, impede, or hinder usual pedestrian or vehicular travel or interfere with the operation and maintenance of street lights, signage, street furniture, fire hydrants, other street appurtenances, or business district maintenance.
4. Provide appropriate clearance from existing utilities.

Facility and Support Equipment:

5. Wireless facilities should be placed within an enclosure and concealed from view to the maximum extent possible.
6. Radiation certified to be at safe levels by a non-ionizing radiation electromagnetic radiation report (NIER) shall be submitted to the City and retained on file for equipment type and model.
7. NIER report shall be endorsed by a qualified professional. It shall specify minimum approach distances to the general public as well as electrical and communication workers that are not trained for working in an RF environment when accessing the pole by climbing, ladder or bucket.
8. A "disconnect" shall be provided for both the power and the cell signal that be easily accessed and operated by street lighting maintenance personnel.
9. Wireless facilities should be designed, textured and painted to match existing pole to reduce visual clutter.

10. "ABC": Antennas, brackets (mounting) and cabling should all have a uniform paint color and be painted to match the color of the equipment, including the fiber termination enclosure.

Form and Placement:

11. Narrow Vertical Alignment: Consider the use of shrouds and equipment enclosures that are nearly the same diameter as the post at a ratio of approximately 1:1 such that it reads as one contiguous streamlined form from the street level. Avoid any tilted arrangement(s).
12. Antenna and Remote Radio Unit (RRU):
 - a. Consider using antenna designs that provide robust coverage without appearing more distracting than necessary. Avoid placements that may impair light, air, or views from adjacent windows.
 - b. Antennas should be generally cylindrical or rectangular in shape.
 - c. Place antenna and RRUs within the shroud above the pole. RRUs attached to the side of the pole are discouraged; but if required, it shall use the smallest RRU volume possible and be stacked vertically and close together with minimal distance from the pole.
 - d. Equipment should be secured by using steel/aluminum banding and not through bolting/drilling into pole. Drilling into an existing street light pole generally voids the pole's warranty.
 - e. The height of a wireless facility shall be the lesser of the minimum height needed for the operation or, for a pole that has a collocated facility, 50 feet not including the antenna height.
 - f. Stack equipment close together and on the same side of the pole. If a long rectangular disconnect switch is used, rotate the enclosure so the elements can be stacked closer together on the pole. Avoid wide offsets (more than 4 inches) of equipment enclosure brackets from the pole.
 - g. All equipment height shall be above the ground at least 8 feet. If the small cell equipment orients toward the street, the attachment shall be installed no less than 16 feet above the ground.
13. Wires and Cables: Wires and cables are to be contained within the shroud and placed inside the pole in order to reduce the appearance of cluttered or tangled cabling. Cabling and meters should be inside the pole to the maximum extent possible. When feasible, provider may use existing City conduit(s) between City pull box and City street light pole/other pole to install small cell facility wiring.
14. Signage and Lights:
 - a. Signage and lights are limited to what may be required by the FAA or FCC.
 - b. Use the smallest and lowest visibility signs, including the radio-frequency warning sticker required by government or electric utility regulations, and placed as close to the antenna as possible.
 - c. Use equipment that does not feature flashing lights that may be visible to the public.
15. Electrical Meters: A separate meter must be provided for small cell facility. Electrical meters should be located on, within the pole or underground. In the case pole owner prohibits the use of a pole-mounted meter, and an above ground power meter box is

required, then the meter box must be of the smallest footprint available and be approved by the City Engineer or designee.

16. Utility Box: Reasonable efforts must be made by provider to avoid the use of above ground utility boxes. If above ground utility boxes must be used, then they shall:
 - a. Use the smallest footprint and not exceed 48-inches in height and 30-inches in width/depth.
 - b. Be secured to a concrete pad or pole.
 - c. Deviations from these standards must be approved by City Engineer or designee.
17. Pole Height: Overall height of the pole shall be similar to the surrounding poles and/or not exceed 35 feet in height.

Ancillary Equipment:

18. Ensure plans and photo simulations accurately show smaller equipment items such as duplexers, ground buss bars, PBX or J-Boxes. Hide these elements in locations such as behind equipment enclosures or in mounting arms which feature recessed areas.

New Stand-alone Utility Pole Design Standards:

19. The new pole must match the aesthetic of existing street light/poles adjacent to the new pole.
20. The pole shall be visually pleasing, meaning:
 - a. Any transition between an equipment cabinet at the base of the pole and the upper pole should have a proper transition.
 - b. The equipment cabinet at the base of the pole shall not be larger than 28 cubic feet in size.
 - c. Upper pole shall be scaled to 0.5 to 0.75 the size of the cabinet but not larger than 10 inches at the widest portion.
 - d. All hardware connections, including those between the cabinet and upper pole, shall be concealed from view. No horizontal flat spaces greater than 1.5 inches shall exist on the equipment cabinet to prevent placement of cups, trash, or other objects.

Placement of New Stand-alone Utility Poles:

21. The placement of new stand-alone utility poles shall be in accordance with the below standards:
 - a. New utility poles shall be at least 10 feet from the triangle extension of an alleyway flare.
 - b. Shall not be located within 100 feet of the apron of a fire station or other adjacent emergency service facility.
 - c. Shall not impede or obstruct usual pedestrian or vehicular travel
 - d. Shall be located at intersecting property lines when possible.
 - e. Shall be located on secondary streets, when possible.
 - f. Shall be located at least 15 feet away from trees or outside of the drip line of the tree to prevent root disturbance.
 - g. Shall be located at least 5 feet away from the widest point of a drive approach.

- h. Shall be located at least 50 feet from an existing electrical/electronic traffic control device.
 - i. No physical, electrical, or radio interference by the small cell shall be permitted.
 - ii. If required by the City, the provider will provide analysis that the proposed small cell shall not cause any interference with the City public safety radio system, electrical/electronic traffic control devices, emergency signal control devices, “smart city” applications, or other City communications or electronic components.
- i. When located adjacent to a commercial establishment, reasonable efforts should be made to ensure that the facility is not in direct view of businesses’ main entrance, picture windows or other large openings including, but not limited to sliding glass doors or openings that create an indoor-outdoor dining experience.

Decorative Pole Placement:

- 22. Decorative poles, defined as a pole that is specially designed and placed for an aesthetic purpose, may be replaced by a wireless provider for the purpose of collocation if the replacement pole reasonably conforms to the design aesthetic of the displaced pole.
- 23. The design shall be approved by the City Engineer or designee.

Photo Simulations:

- 24. Ensure that all photo simulations appear realistic with respect to cabling/conduit, the RF warning and node ID stickers, and equipment offset from the pole. Verify whether a GPS antenna is needed; as submittals often feature (macro-sized) GPS antennas on simulations when none are shown on plans or needed.
- 25. If the existing pole is leaning and slated for replacement, the simulation should show a new upright pole.
- 26. Ensure photo simulations accurately show the offset of equipment cabinets from the pole. Many simulations depict flush-mounted installations when the actual site features a significant offset from the pole.