



# **SMALL CELL DESIGN GUIDELINE MANUAL**

## **INTRODUCTION:**

This detailed Small Cell Design Guidelines Manual is created to provide objective, technically feasible criteria applied in a non-discriminatory manner that reasonably match the aesthetics and character of the immediate area regarding all of the following, which the city shall consider in reviewing an application:

- (a) The location of any ground-mounted small cell facilities;
- (b) The location of a small cell facility on a wireless support structure;
- (c) The appearance and concealment of small cell facilities, including those relating to materials used for arranging, screening, and landscaping;
- (d) The design and appearance of a wireless support structure including any height requirements adopted in accordance with this Chapter

These Small Cell Design Guidelines apply to public right-of-ways and does not restrict the City's right to regulate small cell facilities or wireless support structures in non-right-of-way City owned property.

A Small Cell Use permit granted under this Chapter (see N.R.O 5562-2018) shall not convey any right, title, or interest in the Right-of-Way, but shall be deemed a permit only to use and occupy the public ways for the limited purpose and terms stated in the permit.

The provisions in this Manual shall not limit or prohibit the City's discretion to promulgate and make publicly available other information, materials or requirements in addition to, and separate from, the Small Cell Design Guidelines Manual which do not conflict with state or federal law.

## **(A) General Design Guidelines**

(1) All small cell wireless communications facilities shall comply with the United States Department of Transportation Manual on Uniform Traffic Control Devices (MUTCD), the Ohio Department of Transportation Manual of Uniform Traffic Control Device (OMUTCD, the National Electric Code (NEC), all City of North Ridgeville Codes, and any other applicable local, state, and federal rules and regulations.

(2) Utility Underground Required. All service lines to the proposed small cell facility shall be underground if all other utilities in the immediate area are also underground.

(3) Power and Fiber Optic Supply.

(a) Independent Power Source Required. Small cell facilities located on city-owned support structures may not use the same power source providing power for the existing facilities original to the purposes of the support structure. Independent power source must be contained within a separate conduit on the existing support structure.

(b) Applicant shall coordinate, establish, maintain and pay for all power and communication connections with private utilities.

(4) Wiring, Cables and Conduit Requirements.

(a) All wiring and cables must be housed within the steel support structure pole and extended vertically within a flexible conduit. In non-steel support structures, all wiring and cables must be appropriately protected in their entirety.

(b) Above ground wires, cables, connections and conduits are prohibited, except as specified in this Design Guideline Manual based on the wireless support structure.

(c) Spools and/or coils of excess fiber optic or coaxial cables or any other wires shall not be stored on the pole except completely within the approved enclosures or cabinets.

(5) Lighting. Lighting associated with small cell facilities is prohibited. Any internal lights associated with electronic equipment must be shielded from public view.

(6) Signage. Signage is prohibited on all small cell facilities and wireless support structures, including stickers, logos, and other non-essential graphics and information unless required by the FCC.

(7) Work Permits. All operators must require the appropriate work permit by the City for any activity described in Chapter 4939 of the Ohio Revised Code and for any activity for which consent is authorized under the same.

## **(B) Existing Wireless Support Structures**

(1) Collocation encouraged. The collocation of wireless facilities on existing support structures is strongly encouraged as a means to minimize the extent of intrusion of redundant support structures within the right-of-way.

(2) Structural Integrity of Existing Support Structures.

(a) The city shall not authorize any attachments to city-owned infrastructure that negatively impacts the structural integrity of said support structure.

(b) The city may condition approval of the collocation on replacement or modification of the wireless support structure at the operator's cost if the city determines that replacement or modification is necessary for compliance with the city's written construction and/or safety standards. A replacement or modification of the wireless support structure shall conform to the applicable design guideline(s) and the city's applicable specifications for the type of structure being replaced. The city may retain ownership of a replacement wireless support structure.

(3) Maximum Permitted Height. For an existing wireless support structure, the antenna and any associated shroud or concealment material are permitted to be collocated at the top of the existing wireless support structure and shall not increase the height of the existing wireless support structure by more than five feet, unless otherwise specified in the Small Cell Design Guidelines based on the specific context and characteristics of the wireless support structure.

(4) Right to reserve space on wireless support structure or pole. The city may reserve space for future public safety or transportation uses in the right-of-way or on a wireless support structure or pole owned by the city in a documented and approved plan in place at the time an application is filed.

(a) A reservation of space shall not preclude placement of a pole or collocation of a small cell facility.

(b) If replacement of the city's pole or wireless support structure is necessary to accommodate the collocation of the small cell facility and the future use, the operator shall pay for the replacement of the pole or wireless support structure, and the replaced pole or wireless support structure must accommodate the future use.

## **(C) New Wireless Support Structures/Poles**

### **(1) Location**

#### **(a) Required Setbacks.**

(1) The centerline of new support structures shall be installed in alignment with existing street trees and other poles along the same right-of-way when possible.

(2) In no case shall a new support structure be located less than two feet from any of the road-way/face of curb, sidewalk, or shared use path as measured to the nearest part of the support structure.

(3) New support structures shall be located a minimum of six feet from any permanent object, structure or existing lawful encroachment into the right of way.

(b) Fall Zones. Fall-Zone requirements for wireless support structures shall be consistent with the requirements for other structures of similar types and height within the right-of-way.

(c) Required Spacing. Collocation is strongly encouraged. If not feasible, a minimum of 300 linear feet between small cell facilities or wireless support structures is required.

### **(2) Maximum Permitted Height**

(a) For a new wireless support structure in a business or industrial zone, the overall height of the wireless support structure and any collocated antennas shall not be more than forty feet in height above established grade measured at the base of the wireless support structure.

(b) The city shall limit the maximum permissible height of wireless support structures in residential zones to not more than thirty-five feet in height above established grade measured at the base of the structure.

### (3) Design Requirements

(a) Shape and Dimensions. All new wireless support structures shall be constructed of solid hot-dipped galvanized steel, be round in shape with the pole shaft tapered in diameter from the base to the top with a maximum of twelve (12) inches at the base.

(b) Transformer Base. All new wireless support structures shall include a one-piece cast aluminum alloy transformer base in a breakaway design, consistent with engineering standards subject to the City's review and approval.

(c) Foundation/Footer.

(1) All new wireless support structures must be supported with a reinforced concrete foundation and footer designed, stamped, sealed and signed by a professional engineer licensed and registered in the State of Ohio, and subject to the City's review and approval.

(2) Anchor bolts must be constructed from steel (high strength) per ATSM A36, threaded (J-Type/L-Type), hot dip galvanized steel per ODOT CM Item No. 711.02, and in a strength and diameter, stamped, sealed and signed by a professional engineer licensed and registered in the State of Ohio, and subject to the City's review and approval.

(3) All anchor bolts must be concealed from public view with an appropriate pole boot or cover, powder coated to match the pole.

(d) Color. New wireless support structures, including the breakaway transformer base, shall have a powder coated finish in the dark earth tone colors such as dark green, dark brown, gray, or black consistent with the color of other poles in the immediate vicinity.

(4) Multiple requests for wireless support structures in violation of spacing requirements. If multiple requests are received by the city to install two or more poles that would violate applicable spacing requirements outlined in the Small Cell Design Guidelines, or to collocate two or more small cell facilities on the same wireless support structure, notwithstanding division (I) of section 4939.0313 of the Revised Code, the city may resolve conflicting requests through whatever reasonable and nondiscriminatory manner it deems appropriate.

(5) City directed alternate location for wireless support structures. The city may propose an alternate location to any proposed location of a new wireless support structure, subject to the following:

(a) That the alternate location is within one hundred feet of the proposed location or within a distance that is equivalent to the width of the right-of-way in or on which the new wireless support structure is proposed, whichever is greater; and

(b) The operator shall use the alternate location if it has the right to do so on reasonable terms and conditions and the alternate location does not impose technical limits or additional costs.

(6) Waiver to city directed alternate wireless support structure location or undergrounding requirements.

(a) Small cell operators may seek a waiver from the Chief Building Official of the undergrounding or alternative location requirements for the placement of a new wireless support structure to support small cell facilities if the operator is unable to achieve its service objective using a small cell facility under the following circumstances:

1. From a location in the right-of-way where the prohibition does not apply;
2. In a utility easement the operator has the right to access; or
3. In or on other suitable locations or structures made available by the city at reasonable rates, fees, and terms.

(b) The city shall process waivers in a reasonable and nondiscriminatory manner that does not have the effect of prohibiting the provision of wireless service.

**(D) Antenna.**

(1) Location. All antenna to be installed on new or existing wireless support structures shall be mounted to the top of the wireless support structure and aligned with the centerline of the wireless support structure, unless otherwise agreed to by the City based on the specific context and characteristics of the wireless support structure.

(2) Size. Each antenna shall be located entirely within an enclosure of not more than six cubic feet in volume or, in the case of an antenna that has exposed elements, the antenna and all of its exposed elements could fit within an enclosure of not more than six cubic feet in volume.

(3) Design.

(a) Shape. Antennas shall be cylindrical in shape, or completely housed within a cylindrical enclosure or radome.

(b) Color. Exposed antennas and antenna enclosures shall match the color specifications of the wireless support structure.

## **(E) Small Cell Facilities Installed on Wireless Support Structures**

(1) Size. Exclusive of the antenna, all wireless equipment associated with the facility shall not cumulatively exceed twenty-eight cubic feet in volume. The calculation of equipment volume shall not include electric meters, concealment elements, telecommunications demarcation boxes, grounding equipment, power transfer switches, cut-off switches, and vertical cable runs for the connection of power and other services.

(2) Equipment Enclosures Required. All small cell facilities mounted to wireless support structures or located on the ground shall be fully contained within enclosures or cabinets.

(3) Required Clear Height. All small cell facilities mounted to a wireless support structure shall provide a minimum of 10 feet of clear space on the pole as measured from established grade to the lowest point of any facility/equipment cabinets or concealment apparatus mounted to the support structure.

(4) Maximum Horizontal Offset from Support Structure. Small cell equipment cabinets or enclosures shall not extend more than 10 inches beyond the pole of centerline in all directions.

### **(5) Design.**

#### **(a) Cabinet or Enclosure Shape.**

(1) Small cell equipment cabinets or enclosures shall be rectangular in shape, with the vertical dimensions being greater than the horizontal.

(2) Generally, the cabinet or enclosure shall be no wider than the maximum diameter of the support structure.

#### **(b) Installation Method.**

(1) All pole mounted equipment cabinets or enclosures must be installed as flush to the pole as possible.

(2) Any installation brackets connecting the cabinets or enclosure to the pole shall not extend more than 2 inches from the pole, and shall include metal flaps (or wings) to fully conceal the gap between the cabinet and pole.

#### **(c) Cabinet or Enclosure Material. (To be discussed)**

(d) **Color**. Cabinets or enclosures shall match the color specification of the wireless support structure.



## **(F) Ground Mounted Small Cell Facilities**

### **(1) Location.**

#### **(a) Required Setbacks.**

(1) In no case shall ground mounted small cell facilities be located less than two feet from the road-way/face of curb, sidewalk, or shared use path as measured to the nearest part of the cabinet or enclosure.

(2) Ground mounted small cell facilities and associated required screening shall be located a minimum of six feet from any permanent object or existing lawful encroachment into the right-of-way.

(2) Size. All small cell wireless equipment associated with the facility shall not cumulatively exceed twenty-eight (28) cubic feet in volume. The calculation of equipment volume shall not include electric meters, concealment elements, telecommunications demarcation boxes, grounding equipment, power transfer switches, cut-off switches, and vertical cable runs for the connection of power and other services.

(3) Maximum Permitted Height. The maximum height for ground mounted small cell facilities shall not exceed 2.5 feet as measured from established grade at the base of the facility.

(4) Equipment Enclosures Required. All ground mounted small cell facilities shall be fully contained within enclosures or cabinets.

#### **(5) Design Requirements.**

(a) Screening required. Evergreen plant material shall be used for screening and shall be planted and maintained to ensure that the equipment will be screened to its full height two years of planting without obstructing the view of motor traffic or pedestrians.

(b) Concrete Pad or Slab. In accordance with state and local standards approved by the Chief Building Official.

(c) Breakaway Design. All objects placed within the clear zone shall feature breakaway design.

(d) Color. Ground mounted small cell facility cabinets and enclosures shall be dark green or black powder coated finish.

### **(G) Construction and Safety Requirements.**

(A) Approval of the collocation or replacement or modification of the wireless support structure is conditioned upon the operators assumption of costs of the City determines that replacement or modification is necessary for compliance with its written construction or safety standards.

(B) Prevention of failures and accidents. Any person who owns a small cell wireless facility sited in the right-of-way shall at all times employ ordinary and reasonable care and install and maintain in use nothing less than the best available technology for preventing failures and accidents which are likely to cause damage, injury, or nuisance to the public.

(C) Compliance with fire safety and FCC regulations. Small cell facilities, wires, cables, fixtures, and other equipment shall be installed and maintained in substantial compliance with the requirements of the National Electric Code, all FCC, state, and local regulations, and in such manner that will not interfere with the use of other property.

(D) Surety bond or equivalent financial tool for cost of removal. All owners must procure and provide to the city a renewable bond, or must provide proof of an equivalent financial mechanism, to ensure compliance with all provisions of this section. The renewable bond or equivalent financial method must specifically cover the cost of removal of unused or abandoned small cell facilities or damage to city property caused by an operator or its agent of each small cell facility which the owner installs in the right-of-way in case the city has to remove or pay for removal of the wireless facility. Two acceptable alternatives to a bond include a funds set-aside and a letter of credit.

### **(H) Indemnify and Hold City Harmless.**

In keeping with, and in addition to, Chapter 4939 of the Ohio Revised Code, any operator who owns or operates small cell facilities or wireless support structures in the public way shall indemnify, protect, defend, and hold the municipal corporation and its elected officials, officers, employees, agents, and volunteers harmless against any and all claims, lawsuits, judgments, costs, liens, losses, expenses, fees to include reasonable attorney fees and costs of defense, proceedings, actions, demands, causes of action, liability and suits of any kind and nature, including personal or bodily injury or death, property damage or other harm for which recovery of damages is sought, to the extent that it is caused by the negligence of the operator who owns or operates small cell facilities and wireless service in the public way, any agent, officer, director, representative, employee, affiliate, or subcontractor of the operator, or their respective officers, agents, employees, directors, or representatives while installing, repairing, or maintaining facilities in a public way. Said Operator shall also hold the City and/or its agent(s) harmless in the event any action by the City and/or its agent(s) negligently or recklessly disrupts, destroys, and incapacitates small cell facility or wireless support structure in the public way created under this Small Cell Design Guideline Manual.