

**City of Syracuse**  
**Small Wireless Facilities**  
**Aesthetic Design Standards**



Department of Engineering

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## **1. BACKGROUND AND PURPOSE**

Pursuant to FCC Declaratory Ruling and Third Report and FCC Order 18-133, effective January 14, 2019, wireless service providers and wireless infrastructure providers are permitted to locate small wireless facilities in the public right-of-way. These networks of low-powered micro antennas provide cellular and data coverage to supplement the providers' macro-cellular networks. New small cell installations will improve the providers' ability to meet current and future consumer cellular and data needs.

The following design standards have been developed by the City of Syracuse to ensure that the design, appearance, and other features of small wireless facilities are compatible with nearby land uses; to prevent the intangible public harm of unsightly or out-of-character deployments; to ensure vehicular and pedestrian traffic safety and coordinate various uses in the right-of-way; and to protect the integrity of historic, cultural, and scenic resources and citizens' quality of life. This document establishes design and aesthetic requirements that all small wireless facilities installed within the ROW must meet prior to installation within Syracuse boundaries. Small wireless facilities installed within the ROW are bound to these design standards.

There are several different small wireless facility installations permitted within Syracuse:

- Attachments to utility poles and utility lines
- Attachments to traffic signal poles
- Attachments to certain types of street light poles
- New freestanding installations (small cell pole)
- New combination poles with street light and concealed small wireless facility (smart poles)

## 1.2 DEFINITIONS

**City or Syracuse** means The City of Syracuse.

**Design Standards or Standards** means these design standards prepared and published by the City.

**FCC** means the Federal Communications Commission of the United States.

**National Grid** means Niagara Mohawk Power Corporation d/b/a National Grid, or its successor.

**OEM** means original equipment manufacturer.

**Ornamental street light pole** means a street light pole made of aluminum, steel, or fiberglass with cast or molded decorative detailing.

**Provider** means a wireless service provider or wireless infrastructure provider.

**RF** means radio frequency.

**ROW** means the public rights-of-way owned, managed or controlled by the City.

**Small cell pole** means a new freestanding pole installation for the primary purpose of supporting a small wireless facility.

**Small wireless facilities**, consistent with FCC Order 18-133, Appendix A, are facilities that meet each of the following conditions:

- i. The facilities are mounted on structures 50 feet or less in height including their antennas, or are mounted on structures no more than 10 percent taller than adjacent structures, or do not extend existing structures on which they are located to a height of more than 50 feet or by more than 10 percent, whichever is greater;
- ii. each antenna associated with the deployment, excluding associated antenna equipment, is no more than three cubic feet in volume, and
- iii. all other wireless equipment associated with the structure including the wireless equipment associated with the antenna and any pre-existing associated equipment on the structure, is no more than 28 cubic feet in volume.

**Smart pole** means a pole integrating a street light and concealed small wireless facility equipment.

**Street light pole** means a pole whose primary purpose is supporting a street light.

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**Utility pole** means, for purposes of these design standards, a utility pole owned by a third party utility company, such as National Grid or Verizon.

**Verizon** means Verizon New York, Inc.

## 2. GENERAL REQUIREMENTS

### STANDARDS TABLES

#### 2.1 SMALL WIRELESS FACILITY EQUIPMENT

AESTHETICS	Providers shall consider the aesthetics of the existing street lights and other City infrastructure near proposed small wireless facility locations, with special attention given to the details of neighborhoods with unique or ornamental street light assemblies. Unique or ornamental assemblies may include mast arms, ornamental pole bases, architectural luminaires, mounting heights, pole colors, etc. Equipment should match the aesthetics of the pole and surrounding poles.
EXTERNAL SHROUDING	4G antennas shall be cantennas or contained in a shroud and any other equipment shall be contained in an equipment cabinet, unless the visual impact can otherwise be reduced by its location on the pole. 5G antennas are not required to be shrouded, but shall be reasonably colored to match the pole on which they are mounted. On wood poles, the color of attachments shall be gray or OEM default colors.
SIDEARM (OFF-SET) INSTALLS	The nearest point of the enclosure to the pole shall not extend more than 30 inches from the pole or as specified by pole owner(s). The minimum mounting height shall be 20 feet.
CONDUITS	All cables shall be in rigid conduits from below ground to eight (8) feet above grade. Cables shall be in conduits or covers at heights greater than eight (8) feet above grade. Conduits and covers shall be surface mounted to the pole unless required to be installed inside the pole.
HARDWARE ATTACHMENT	Welding onto existing equipment is not permitted.

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<p>COLOR</p>	<p>All equipment shall be colored or painted to match pole aesthetics. If a wood pole, the visible attachments and hardware shall be colored gray or OEM default colors. Paint color and type shall be that specified by the City Engineer.</p>
<p>CABLES</p>	<p>All cables shall be clearly labeled for future identification.</p>
<p>CANTENNAS</p>	<p>Cantennas or antennas contained in a shroud shall be mounted directly on top of the pole, unless a side arm installation is required by a pole owner. A tapered transition between the upper pole and pole-top antenna is required. Antenna shall be no more than 3 cubic feet in volume.</p>
<p>STICKERS OR SIGNS</p>	<p>Any on-pole cabinet and any ground mounted utility box shall be labeled with:</p> <ul style="list-style-type: none"> <li>(1) RF warning sticker or sign, no larger than 5x7 inches. Facing to the street near the elevation of the antennas;</li> <li>(2) 5-inch by 7-inch (maximum) plate with the provider’s name, location identifying information, and 24-hour emergency telephone number, and</li> <li>(3) No product advertising.</li> </ul>
<p>LIGHTS</p>	<p>There shall be no lights on the equipment unless required by federal law.</p>
<p>GROUND MOUNTED EQUIPMENT BOX</p>	<p>Shall not be permitted unless applicant demonstrates that no other feasible options for containing the necessary equipment are available. Boxes shall not be placed closer than 20 feet from a street corner, and sight lines for drivers and pedestrians must be preserved. The City Engineer shall make the final determination on approval or denial of the proposed placement. All ground mounted equipment boxes shall be attached to a concrete foundation. All equipment must be at least two (2) feet clear of the curb. The City prefers equipment</p>



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	to be placed in existing underground vaults when available.
POLE CONNECTION	Attachments to the side of a pole shall be oriented away from the street side of the pole, placed perpendicularly or parallel to the street, unless applicant demonstrates need for variation. Providers shall use a consistent orientation on poles located on the same block. Attachments must be at least two (2) feet clear of the curb.
HEIGHT OF EQUIPMENT ON POLE	The lowest point shall not be lower than eight (8) feet from the grade directly below the equipment enclosure.
POWER METER	As required by National Grid and in a location that (1) minimizes its interference with other users of the City's right-of-way including, but not limited to, pedestrians, motorists, and other entities with equipment in the right-of-way, and (2) minimizes its aesthetic impact.

**2.2 NEW AND REPLACEMENT METAL POLES**

<p>POLE STYLE</p>	<p>Pole shall match aesthetics of surrounding street lights. Pole extension on traffic signal pole shall match the rest of the pole.</p>
<p>COLOR</p>	<p>A pole and pole extension shall be colored or painted to match existing street light aesthetics. Paint color and type used shall be that specified by the City Engineer.</p>
<p>HEIGHT</p>	<p>Any pole with a small wireless facility shall not exceed the height of small wireless facilities as defined in section 1.2. Post-installation pole height shall be measured from the top of the foundation to the top of the highest mounted piece of equipment.</p>
<p>INTERNAL INSTALLS</p>	<p>Equipment shall be installed internally when using a new underground-fed pole. Any equipment installed within a pole shall not protrude from the pole except to the extent reasonably necessary to connect to power or a wireline, or as required by National Grid.</p>
<p>STICKERS OR SIGNS</p>	<p>On each pole, a</p> <ul style="list-style-type: none"> <li>(1) RF warning sticker or sign, no larger than 5 x 7 inches. Facing to the street near the elevation of the antenna(s);</li> <li>(2) 5-inch by 7-inch (maximum) plate with the provider’s name, location identifying information, and 24-hour emergency telephone number, and</li> <li>(3) No product advertising.</li> </ul>

### **2.3 GENERALLY APPLICABLE REQUIREMENTS**

Any small wireless facilities, whether co-located on an existing pole or installed on or in a new pole, shall comply with the following requirements:

- Shall not significantly create a new obstruction to property sight lines.
- Shall preferably be on a pole located as close as possible to the point of intersection created by the extension of side-yard property lines with the existing line of utility or street light poles in the right-of-way, and preferably along a property's secondary street facing.
- Shall be installed with appropriate clearance from existing utilities.
- Providers shall consider the aesthetics of existing street lights and street furniture in the neighborhood of the proposed small cell locations. These aesthetic considerations and accommodations shall be included in the application submittal.
- All equipment located within the public ROW shall be located such that it meets ADA requirements and does not obstruct, impede, or hinder usual pedestrian or vehicular travel or interferes with the operation and maintenance of traffic signals, signage, street lights, street furniture, fire hydrants, underground infrastructure, or business district maintenance.
- New small wireless facility wires, cords and cables shall be encased in a separate conduit than any City wires, cords, and cables.
- Shall be placed so as not to interfere with normal operation and maintenance of street lights, traffic signals or other street appurtenances.

#### **2.31 CITY'S PREFERRED SMALL WIRELESS FACILITY EQUIPMENT LOCATIONS IN ORDER OF PREFERENCE:**

- On-strand attached to a utility pole, if meeting provider service objective.
- Attached to existing utility poles or to traffic signal poles.
- Attached to plain wood or plain metal street light poles.
- Replacement plain metal street light pole with concealed small wireless facility equipment and antennas.
- Installation of small cell poles.
- Replacement ornamental street light pole with concealed small wireless facility equipment and antennas.

Applicant shall demonstrate the infeasibility of each city-preferred location before requesting permission for the next on the list.

**2.32 STANDARDS FOR SMALL WIRELESS FACILITIES WITHIN NATIONAL REGISTER-LISTED HISTORIC DISTRICTS OR LOCAL PRESERVATION DISTRICTS OR ADJACENT TO NATIONAL REGISTER-LISTED SITES OR LOCAL PROTECTED SITES**

In order to maintain the character of a historic district or preservation district, all wireless facilities and new structures in a historic district or preservation district must employ screening, concealment, camouflage, or other stealth techniques to minimize visual impacts. The placement of small wireless facilities on existing structures or new poles shall be subject to the following:

- Installation of small wireless facilities within a local preservation district or adjacent to a local protected site shall require a consultation with the Landmark Preservation Board. Such an installation may be considered for an administrative approval as a minor alteration.
- Lattice structures and new wooden structures will not be permitted.
- Small wireless facilities shall not be installed on poles located in front of a building designated as a local landmark or listed on the National Register.
- The design of wireless facilities and related new structures must be integrated with existing buildings, structures and landscaping, including considerations of height, color, style, placement, design and shape.

### **3. ATTACHMENTS TO UTILITY POLES**

#### **3.1 PURPOSE**

This chapter of the standards governs attachment of a small wireless facility to a utility pole.

#### **3.2 STANDARDS**

A small wireless facility attachment shall conform to pole owner's attachment standards. Any attachment to a utility pole or utility line shall first be approved by the owner(s) of the utility pole or line.

All associated equipment shall be mounted on poles if allowed by pole owner and pole is capable of supporting.

Fiber, wires and cables shall be in conduits or covers surface-mounted to pole.

One (1) small wireless facility will be allowed by the City per utility pole if technically feasible and if in the determination of the City Engineer there are no safety or aesthetic concerns. These standards apply whether attachment is to an existing utility pole, or the owner requires installation of a replacement utility pole.

## **4. ATTACHMENTS TO TRAFFIC SIGNAL POLES**

### **4.1 PURPOSE**

This chapter of the standards governs attachment of a small wireless facility to a traffic signal pole.

### **4.2 STANDARDS**

One (1) small wireless facility will be allowed by the City per traffic signal pole if technically feasible and if in the determination of the City Engineer there are no safety or aesthetic concerns.

All provider equipment other than the antenna shall be housed inside an existing underground vault, inside the pole or a pole extension at the top of the pole, inside a pole-mounted cabinet, or hidden within the cantenna. The cantenna shall only be attached to the top of the pole. 5G antennas shall be mounted not more than 6" from the pole or pole extension and shall be colored to match the pole.

Fiber, wire and cables shall be inside pole in a conduit. If conduit space is not available, the pole cannot be used.

A small wireless facility may not be placed on a traffic signal pole which has a luminaire attached.

## 5. ATTACHMENTS TO STREET LIGHT POLES

### 5.1 PURPOSE

This chapter governs small wireless facility attachments to a street light pole. Two different types of small wireless facility installations are permitted on street light poles, which are:

- Co-locating small wireless facility equipment on plain (non-ornamental) wood or plain (non-ornamental) metal street light poles.
- Replacing an existing plain wood or plain metal street light pole so that small wireless facility equipment can be attached.

### 5.2 STANDARDS

No small wireless facility placement shall be allowed as attachments on ornamental street lighting poles as determined by the Commissioner of DPW. Replacement of an existing ornamental street light pole with a matching smart pole may be permitted as per Section 7.

One (1) small wireless facility will be allowed by the City per street light pole if technically feasible and if in the determination of the City Engineer there are no safety or aesthetic concerns. These standards apply whether attachment is to an existing street light pole or to a replacement street light pole.

On an existing pole, the equipment excluding the antenna shall be in an equipment cabinet if on the pole, otherwise shielded from view, hidden within the cantenna, or contained in an existing underground vault or new or existing ground-mounted utility box.

- All equipment not concealed in a base cabinet shall be above the ground at least eight (8) feet.
- Equipment shall be oriented away from the street. If an exception is made allowing the small cell equipment to orient toward the street, the attachment shall be installed no less than 16 feet above the ground.
- The size of small wireless facilities shall be minimized as much as possible to minimize visual impact without decreasing the level of service desired by provider.
- The lighting level-of-service shall not be decreased.
- The City may require a new smart pole in lieu of collocating on a metal street light pole. See Section 7 for smart pole standards.

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- Wood poles shall only be allowed by approval in areas that have predominantly wood poles or when replacing an existing wood pole. Wood poles shall not be allowed on streets which do not currently have wooden utility poles.



## **6. INSTALLATION OF SMALL CELL POLE**

### **6.1 PURPOSE**

This chapter of the Standards is to be used when installing a freestanding small wireless facility installation, referred to as a small cell pole.

### **6.2 STANDARDS**

All small wireless facility carrier equipment excluding the antenna shall be housed internal to an equipment cabinet at the base of the pole or hidden within the pole or cantenna. No provider equipment shall be strapped or banded to the outside of the small cell pole.

- Small Cell Poles shall coordinate with neighborhood pole style, color, and material type, matching aesthetics of adjacent poles, but may have larger diameter to internally conceal equipment.
- A base containing equipment shall be round with a preferred diameter of the base cabinet 18 inches with a maximum 24 inch diameter. The meter shall be contained in an equipment cabinet as approved by National Grid.
- Ownership of small cell poles is to remain with the provider.
- At least 15% of the pole design structural capacity shall be reserved for future City installations.
- All new poles shall have appropriate clearance from existing utilities.
- Small Cell Poles shall have a smooth transition from the upper pole to the cantenna or 5G antenna.
- Wood poles shall not be allowed on streets which do not currently have wooden utility poles.

### **6.3 PLACEMENT REQUIREMENTS**

All small cell poles shall be privately owned and shall be permitted by the Department of Engineering via the ROW Permit Requirements as outlined in the Master License Agreement.

- Preferred location for new pole is generally on an extension of the side-yard property line at the intersection with the line of street lights, utility poles, or trees in the ROW, to avoid interference with building face, views, business signage, pedestrian flow, etc.
- Small Cell Poles placement shall not impede, obstruct, or hinder pedestrian or vehicular travel.

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- Small Cell Poles shall not be located along the frontage of a historic building, deemed historic on a federal, state, or local level.
- Small Cell Poles shall not significantly create a new obstruction to property sight lines.
- Whenever possible, the freestanding small wireless facility shall be located on the secondary street.
- Small Cell Poles shall be located within the street amenity zone whenever possible.
- All new poles shall be in line with adjacent utility or street light poles, and preferably be equidistant from them.
- To minimize conflicts with trees, minimum distance standards will be established from tree canopy edge. Distances will vary based on current age of tree (which is based on diameter of trunk) in order to anticipate future tree growth. Distances will also depend on which side of street the cell structures will be installed.

- a. Distance from canopy edge on utility pole side of street (where low-growing trees are planted)

<u>Trunk Diameter</u>	<u>Distance from canopy edge</u>
1 to 6"	20'
7 to 12"	15'
13" and up:	10'

- b. Distance from canopy edge on side of street free of utility poles (where tall-growing trees are planted)

<u>Trunk Diameter</u>	<u>Distance from canopy edge</u>
1 to 6"	55'
7 to 12"	45'
13 to 18"	35'
18 to 24"	25'
24" and up	15'

The City may refuse applications for sites that are prime locations for tree planting due to soil quality, tree lawn width, and importance of tree canopy at this location to the community.

These priority tree planting areas are typically on the side of the street without utility poles, and have tree lawns (planting strips) greater than seven (7) feet wide between the curb and the sidewalk.

Small Cell Poles shall be placed at an equal distance between trees and other poles when possible.

- Small Cell Poles shall not be installed between the perpendicular extension of the primary street-facing wall plane of any single- or two-family residence and the street.
- When located adjacent to a commercial establishment, such as a shop or restaurant, small cell poles shall not be located in front of store front windows, primary walkways, primary entrances or exits, or in such a way that would impede a delivery to the building.
- Small Cell Poles shall be at least 5' from driveways, entrances or private lead walks to buildings, and bus shelters.
- Small Cell Poles must be placed outside of the 20-foot equipment clear zone, or applicable sight triangle at intersection corners.

## 7. INSTALLATION OF SMART POLES

### 7.1 PURPOSE

This chapter of the Standards is to be used when installing a:

- Replacement plain metal street light pole with internally concealed small wireless facility equipment and antennas; or
- Replacement ornamental street light pole with internally concealed small wireless facility equipment and antennas.

### 7.2 STANDARDS

All small wireless facility carrier equipment excluding the antenna shall be housed internal to an equipment cabinet at the base of the pole, or concealed within the pole or cantenna. No provider equipment shall be strapped to the outside of the smart pole.

Smart poles shall reasonably match neighborhood pole style, color and material type. Height of smart pole shall not exceed the greater of 10% higher than original/surrounding light poles, or 50 feet.

A base containing equipment shall be round with a preferred diameter of the base cabinet 18 inches with a maximum 24 inch diameter. The meter shall be contained in the base cabinet or as approved by National Grid.

New luminaires shall be mounted at the same height as adjacent street lights. New luminaires shall reasonably match existing and shall incorporate the City's networked lighting control node.

The lighting level-of-service shall not be decreased.

## **8. EXCEPTIONS**

### **8.1 PURPOSE**

This chapter of the standards is to be used when requesting to install small wireless facility equipment in a manner unforeseen or not otherwise covered by the standards set elsewhere in this document.

### **8.2 STANDARDS**

Deviations from the Design Standards may be approved if reasonable on a case-by-case basis by the Syracuse City Engineer prior to installation.

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