

# Wireless Facilities and Infrastructure

## DESIGN MANUAL

Version 2

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## I. Purpose and Applicability

The City of Fort Worth (“City”) recognizes that the State of Texas has delegated to the City the fiduciary duty, as a trustee, to manage the Public Right-of-Way for the health, safety and welfare of the public to Texas municipalities.

### **Purpose:**

1. Texas Local Government Code (TLGC), Chapter 284, allows certain wireless Network Providers to install in the Public Rights-of-Way their wireless facilities, described and defined in TLGC, Chapter 284, Sec. 284.002, as “Micro Network Nodes,” “Network Nodes” and “Node Support Poles.”
2. As expressly allowed by TLGC, Chapter 284, Section 284.108, and pursuant to its police power authority reserved in Sec. 284.301, the City enacts this Design Manual in order to meet its fiduciary duty to the citizens of the City, and to give assistance and guidance to wireless telecommunications providers to assist such providers in the timely, efficient, safe and aesthetically pleasing installation of technologically competitive equipment.

### **Applicability:**

1. This Design Manual is for siting and criteria for the installation and use of Wireless Facilities, including Micro Network Nodes, Network Nodes, Node Support Poles and related ground equipment being installed pursuant to TLGC, Chapter 284.
2. This Design Manual shall apply to any siting, installation, construction, and Collocation in, on, over or under the Public Right-of-Way of Network Nodes, Node Support Poles, Micro Network Nodes, Distributed Antenna Systems, microwave communications or other Wireless Facilities, by whatever nomenclature, whether they are installed pursuant to TLGC, Chapter 284, or installed pursuant to an agreement as agreed to by the City, in its discretion, or installed as may otherwise be allowed by State law.

## II. Prohibited and Preferred Locations of Micro Network Node, Network Node, Node Support Pole and Related Ground Equipment

1. The following are prohibited or restricted areas for certain Wireless Facilities, except with separate City agreement or subject to concealment conditions.
  - a. **Municipal Parks and Residential Areas.** In accordance with Chapter 284, Sec. 284.104 (a), a Network Provider shall not install a Wireless Facility in a Public Right-of-Way without the City’s discretionary, nondiscriminatory and written consent if the Public Right-of-Way is in a Municipal Park or is adjacent to a Street that is:
    - i. Not more than fifty (50) feet wide; and
    - ii. Adjacent a Residential Area.
  - b. Each permit application shall disclose if the desired Wireless Facilities are within a Municipal Park and Residential Areas as described above.
  - c. New Node Support Poles and related ground equipment installations that meet the criteria above will be subject to the following public notification:
    - i. All property owners within 150 feet of a new network support pole or ground equipment will receive a notice by mail with a photo simulation and other information from the service provider.
    - ii. Neighborhood groups within 300 feet will receive an email notice.

- iii. A public meeting is encouraged but not required.
- iv. Property owners must submit protest in writing to City staff within 15 days of postmark date on notification sent by service provider.
- v. If a protest is received, the network providers will work with the City and property owners to find an alternative location.
- vi. If an alternative location is not identified, the permit will then be denied.

b. **Historic District and Design Districts.** In accordance with TLGC, Chapter 284, Sec. 284.105, a Network Provider must obtain advance written approval from the City before Collocating Network Nodes or installing Node Support Poles in a Historic District or Design District with Decorative Poles.

- i. As a condition for approval of Wireless Facilities in Historic District or Design Districts with Decorative Poles, the Network Provider shall install the Wireless Facilities utilizing Concealment measures (see exhibit 1). Therefore, any request for installations in a Historic District or Design District with Decorative Poles shall be accompanied with Concealment measures (see exhibit 1), as applicable, in the permit applications.
- ii. A Network Provider shall comply with and observe all applicable Laws, including, but not limited to, Section 106 of the National Historic Preservation Act.
- iii. Each applicant shall disclose if the Network Node or New Node Support Pole are within a Historic District or Design District with Decorative Poles or in an area of the City zoned or otherwise designated as a Design District or Historic District.

d. **Compliance with Undergrounding Requirements.** In accordance with TLGC, Chapter 284, Sec. 284.107, a Network Provider shall comply with all applicable nondiscriminatory undergrounding Laws, regulations, and requirements that prohibit installing above-ground structures in a Public Right-of-Way without first obtaining zoning or land use approval.

- i. Areas may be designated from time to time by the City as Underground Requirement Areas in accordance with filed plats and/or conversions of overhead to underground areas, as may be allowed by law.
- ii. Each permit application shall disclose if it is within an Underground Requirement Area.

2. Least preferable locations:

a. **Municipal Parks and Residential Areas**

b. **Historic Districts and Design Districts**

- i. Installing Wireless Facilities on Main Street in the Downtown Urban Design Districts is strongly discouraged.

c. **Historic Landmarks.** A Network Provider is discouraged from installing Wireless Facilities within three hundred (300) feet of a historic site or structure or Historic Landmark recognized by the City, State or Federal government (see, for example, and not limited to §442.001(3) of the Texas Government Code, and 16 U.S.C. § 470), as of the date of the submission of the application.

- i. The City requests that a Network Provider explore the feasibility of using Concealment measures to improve the aesthetics and design of the Wireless Facilities to minimize the adverse impact to the Historic Landmark, site, or structure.

- ii. A Network Provider shall comply with and observe all applicable Laws, including, but not limited to, Section 106 of the National Historic Preservation Act.
  - iii. Each applicant shall disclose if the Wireless Facilities are within three hundred (300) feet of a Historic Landmark.
3. Most preferable locations:
  - a. Industrial areas, if not adjacent to a Municipal Park, Residential Area, Historic District, or Design District.
  - b. Highway areas, if not adjacent to a Municipal Park, Residential Area, Historic District, or Design District.
  - c. Retail and Commercial areas, if not adjacent to a Municipal Park, Residential Area, Historic District, or Design District.
4. Consult City staff for information regarding current Historic Districts and Design Districts.
5. While Chapter 284 does not require the City to designate underground compliance areas to prohibit above-ground Wireless Facilities, the City may, from time-to-time, designate a underground compliance areas.

### **III. Order of Preference Regarding Attachment and Placement of Wireless Facilities in the Public Right-of-Way**

1. Micro Network Nodes shall only be lashed on existing communication lines between existing utility poles (electric poles or telephones poles), with notice to the pole owner as required by applicable Laws, including, but not limited to, Federal Pole Attachment Act, 47 U.S.C. § 224, and not placed on Utility Poles, Node Support Poles, or Service Poles.
2. Existing Utility Poles (electric poles or telephones poles) shall be the preferred support facility for Network Nodes and related ground equipment.
3. Municipal Service Poles in the following order of preference:
  - a. Non-decorative streetlights with a height of more than 20 feet (see exhibit 2).
    - i. Be encased in a separate conduit than the Pole electronics;
    - ii. Have a separate electric power connection than the Pole structure; and
    - iii. Have a separate access point than the Pole structure.
  - b. Traffic signal structures (see exhibit 3), when such installation will not interfere with the integrity of the facility and will not interfere with the safety of the public, and in accordance with an agreement, as allowed by Chapter 284, Sec. 285.056 and Sec. 284.101 (a) (3) and (b). Installation of Network Node facilities on any traffic signal structures shall:
    - i. Be encased in a separate conduit than the traffic light electronics;
    - ii. Have a separate electric power connection than the traffic signal structure; and
    - iii. Have a separate access point than the traffic signal structure.

- c. Street signage shall be a low-priority use for attachment of a Network Node. Installations on all street signage structures shall not interfere with the integrity of the facility in any way that may compromise the safety of the public. Installation of Network Node facilities on any street signage structures that has electronics shall:
    - i. Be encased in a separate conduit than City signage electronics;
    - ii. Have a separate electric power connection than the signage structure; and
    - iii. Have a separate access point than the signage structure.
  - d. Decorative street lights (see exhibit 4) shall:
    - i. Be encased in a separate conduit than City streetlight electronics;
    - ii. Have a separate electric power connection than the streetlight structure; and
    - iii. Have a separate access point than the streetlight structure.
  - e. Other Municipal Service Pole use is discouraged.
4. New Node Support Poles shall be the least preferred type of allowed facility for attachment of Network Nodes.

#### **IV. Prior to Applying for a Permit**

- 1. Network Providers and their contractors shall register with the Planning and Development Department prior to submitting an application.
- 2. Be an active member of the Digtest 811 requirements. Paint used to mark underground utilities shall be water based.
- 3. For non-city owned property within the Public Right-of-Way Network Providers are responsible for obtaining permission from the owners of such non-city-owned property.
- 4. It shall be the responsibility of the Network Provider to evaluate, prior to submitting a permit application, the compatibility between the existing City infrastructure and Provider's proposed Network Node. A Network Node shall not be installed in a location that causes any interference with existing City infrastructure. Network Nodes shall not be allowed on City's public safety radio infrastructure.
- 5. New Node Support Poles and related ground equipment subject to public nonfiction must submit receipts of postmark and copy of the email notification with the application. Postmarks and date stamp on email must be 15 days prior to date of application. See Page 2.

#### **V. Permitting**

- 1. Network Providers shall provide evidence of such permission to attach or use non-city-owned property and right-of-way. If the project lies within a Highway, the applicant must provide evidence of a permit from the State or Federal government, as applicable.
- 2. Prior to installing a Wireless Facilities, Network Providers shall complete and submit an application for a utility permit, using City's electronic permitting system. The following are required documents for the application:

- a. Plans and drawings prepared and sealed by a professional Engineer licensed in the State of Texas that provide detailed drawings, with calculations to show strict conformity to the size limitations as set forth in TLGC, Chapter 284, in accordance with, but not limited to Chapter 284, Sec. 284.002, Size of a Micro Network Node, Sec. 284.003, Size of Network Nodes, and Sec. 284.103, Maximum Pole Height, with each application and with each request for a permit for each location.
  - b. Installations on all Service Poles shall have an industry-standard pole load analysis completed and submitted with each permit application indicating that the Service Pole to which the Network Node is to be attached will safely support the load, in accordance with Chapter 284.108.
  - c. Plat and site plan which includes the following:
    - i. Indication of current right-of-way line and other easements and encumbrances.
    - ii. Indication of spacing from existing curb, driveways, sidewalk, trees, utilities, other poles and existing buildings.
    - iii. Width of Pedestrian Clear Zone.
    - iv. Proposed underground conduit and equipment and its spacing from other utilities.
    - v. A sectional profile of the right-of-way and identification of all existing utilities and existing utility conflicts. All electrical lines must be placed in ridged steel conduits. All conduit, shall be located a minimum of thirty-six (36) inches away from existing utilities, not less than five (5) feet from edge of pipe for water or sanitary sewer mains, and three (3) feet above or below water or sanitary sewer mains when crossing perpendicular. Written approval from the Water Department Director or designee is required if the conduit crosses a water or sanitary sewer main.
  - d. Scaled drawings of the proposed attachments of a Network Node to a Service Pole or Node Support Pole of a scale of no less than 1" - 40'.
  - e. Photo simulations are required (see exhibit 5).
  - f. Copy of the node ID sticker (see page 10 for details).
  - g. Longitude and latitude for each Network Node and Node Support Pole.
  - h. An analysis demonstrating that the proposed Wireless Facilities does not cause any interference with the City's public safety radio system, traffic signal light system or other city safety communications components in accordance with TLGC, Chapter 284, Sec. 284.304.
2. In the event that placement or maintenance of Wireless Facilities conducted by the Network Provider requires streets or traffic lanes to be closed or obstructed, the Network Provider shall submit a traffic control plan. Storm Water Pollution Prevention Plan and trench safety plan may also be required based on the proposed scope of work. Network Providers shall avoid placing any Wireless Facility over an existing Storm Water easement. Wireless Facilities shall be Located no farther into the Storm Water easement than three (3) feet. The City retains the right to determine these conflicts and may require the movement of Wireless Facilities during review.
  3. Network Providers shall obtain an address for each Network Node or Node Support Pole from the City of Fort Worth Fire Department and receive notification that the address has been entered into the City of Fort Worth's electronic permitting system.
  4. Network Providers shall obtain an electrical permit and inspection by City staff shall be required prior to the installation of an electrical meter.

5. Network Provider shall schedule a site coordination meetings with City staff are required for Historic Districts and Design Districts.
6. Network Provider shall pay all fees and rates adopted by City Council.
7. Network Providers shall identify end users of Wireless Facilities and provide a guarantee agreement signed by end user(s).

## **VI. Standards and Guidelines for Wireless Facilities**

### **A. General**

1. In accordance with TLGC, Chapter 284.102, a Network Provider shall construct and maintain Wireless Facilities in a manner that does not:
  - a. Obstruct, impede or hinder the usual travel or public safety on a Public Right-of-Way;
  - b. Obstruct the legal use of a Public Right-of-Way by other utility providers;
  - c. Violate nondiscriminatory applicable codes;
  - d. Violate or conflict with any Laws, including but not limited to City Code Chapter 30-19 and the Federal Americans with Disabilities Act of 1990 (42 U.S.C. Section 12101 et seq.).
2. In Historic Districts and Design Districts with Decorative Poles the following shall apply:
  - a. Concealment of Wireless Facilities shall be required by the City in Historic and Design Districts with Decorative Poles, pursuant to Chapter 284.105. Network Providers shall submit proposals for Concealment with the documents required for permitting (see exhibit 1).
  - b. The Wireless Facilities shall be Concealed or enclosed in an equipment box, cabinet or other unit that may include ventilation openings.
  - c. There shall be no more than one (1) Network Node on any one (1) Pole (see exhibit 6).
3. Network Providers shall not install Wireless Facilities on Public Art without written permission from the artist to prevent potential copyright issues (see exhibit 4).
4. Transport Facilities shall be installed underground if the City requires undergrounding in the location that the Transport Facilities are or will be installed. Aerial fiber and power connections shall not be permitted if the City prohibits aerial fiber and power connections in the location that the Transport Facilities are or will be installed (see exhibit 7).
5. All attachments on all Service Poles shall be at least twelve (12) feet above grade, in accordance with Chapter 284, Sec. 284.108 (a) (1) - (2), and if a Wireless Facilities' attachment is projecting toward the street, for the safety and protection of the public and vehicular traffic, the attachment shall be installed no less than sixteen (16) feet above the ground (see exhibit 8).
6. Caution shall be exercised during the construction and installation of New Support Poles and Network Nodes so they do not interfere or conflict with exiting building overhangs and awnings.



## **B. Location**

1. All Wireless Facilities shall be located to avoid any physical or visual obstruction to pedestrian or vehicular traffic, or in any manner create safety hazards to pedestrians or motorists (see exhibits 8, 9, 10, and 11).
2. Where available, all Wireless Facilities shall be located in the Furnishing Zone or Parkway Strip in line with existing street trees and Decorative Poles. In no instance when a Furnishing Zone or Parkway Strip is available shall Wireless Facilities be located in the Pedestrian Clear Zone. Wireless Facilities equipment in the Furnishing Zone shall generally be placed in the center of the Furnishing Zone or Parkway Strip and shall meet minimum Texas Department of Transportation (TXDOT) and City of Fort Worth Engineering Standards Manual setback requirements from the back of curb, generally eighteen (18) to twenty-four (24) inches (see exhibit 12).
3. Where there is no Furnishing Zone or Parkway Strip, Wireless Facilities shall maintain either a minimum five (5) foot wide Pedestrian Clear Zone from back of curb to the inward edge of Wireless Facilities, or a minimum five (5) foot wide Pedestrian Clear Zone between the outward edge of the Wireless Facilities and the back of sidewalk. In the Downtown Urban Design District, Wireless Facilities shall maintain either a minimum seven (7) foot wide Pedestrian Clear Zone from back of curb to the inward edge of a Wireless Facility or a minimum seven (7) foot wide Pedestrian Clear Zone between the outward edge of a Wireless Facility and the back-of-sidewalk (see exhibit 12).

## **C. Height**

### **Standards:**

1. In residential zoning districts, Historic Districts and Design Districts with Decorative Poles height is a factor when determining sufficient Concealment.
2. In all other districts and in accordance with Chapter 284, Sec. 284.103, a Node Support Pole, Modified Utility Pole or Service Pole may not exceed the lesser of:
  - a. Ten (10) feet in height above the tallest existing utility pole located within five-hundred (500) linear feet; or
  - b. Fifty-five (55) feet above grade.

### **Guideline:**

1. The size and height of all Wireless Facilities in the right-of-way should be no greater than the maximum size and height of any other Utility Pole in the same block face.

## **D. Separation**

1. The separation between Wireless Facilities shall be a minimum of two-hundred fifty (250) feet in Historic Districts and Design Districts with Decorative Poles and two-hundred (200) feet for all other districts, per block face, to minimize the hazard of multiple poles adjacent to road ways and to minimize effect on property values and aesthetics in the area (see exhibit 13).
2. In residential zoning districts, Wireless Facilities shall be located where the shared property line between two residential parcels intersects the Public Right-of-Way (see exhibit 14).
3. In nonresidential districts, Wireless Facilities shall be located between tenant spaces, storefront bays or adjoining properties where their shared property lines intersect the right-of-way.
4. In no instance shall a Wireless Facility be located in front of a building entrance or exit.

## **E. Network Nodes**

### **Standards:**

1. Network Nodes shall be mounted in an inconspicuous location and painted to match existing pole (see exhibit 8, 9, and 15).
2. Network Node placement shall not impair light, air, or views from adjacent windows (see exhibit 15).

### **Guidelines:**

1. Use antenna models that include a GPS antenna (if needed) integrated into the same cylindrical shape on top of the main antenna.
2. Minimal profiles and shrouds are preferred.
3. Use antennas with electronic tilt mechanisms that reduce the need for bulky mechanical tilt brackets.
4. A top-mount antenna with a very tall extension arm may look out of character in a low lying residential neighborhood, but a top-mount antenna that is relatively narrow and nearly flush with the top of the pole offers a very minimal profile, which is preferred.
5. Use single element side-arms instead of dual parallel side-arms. Evaluate opportunities to utilize cylindrical antennas in lieu of panel antennas. If panel antennas are utilized, consider the use of mini shrouds below each panel antenna to reduce the visibility of the cable loops. Avoid the use of large bracket systems for panel antennas, which create a significant offset from the pole.
6. For side-mounted antennas, consider using an arm that features flanges/channels so that cabling and passive radio frequency gear can be better hidden from view.
7. For top-mounted antennas, consider using a shroud around the base of the antenna, especially for antenna models with four or more cabling ports, as cable systems without a shroud at the base of the antenna can appear cluttered. If a shroud cannot be used, utilize velcro ties (or similar) to neatly arrange cabling (and note such on the site completion checklist on the cover sheet of plans).
8. Pole top extension arms should not appear offset from the pole. Utilize an arm that is as wide as the top of the pole and tapers toward the antenna

## **F. New Node Support Poles**

1. Node Support Poles shall be set back a minimum of twenty (20) feet from a traffic signal pole and set back a minimum of fifteen (15) feet from any pedestrian ramp. The Transportation and Public Work (T/PW) Department may require greater setbacks from these and other fixtures in the right-of-way to ensure proper sight lines for public safety purposes.
2. Node Support Poles and accessory equipment shall be located at least ten (10) feet from a driveway and at least twelve (12) feet from the center of existing trees.
3. All new Node Support Poles shall match existing poles found on the block face in style and color.

## **G. Equipment**

1. Equipment, as defined in TLGC, Chapter 284.002 shall be minimized and consolidated as much as possible.

- a. Ground equipment shall be minimal and the least intrusive.
  - i. In the Historic Districts and Design Districts with Decorative Poles, equipment shall be designed to be inside a pole or utility enclosure that is already present in the environment or in a pole that matches the design used on the street already. Equipment shall be incorporated into the design of the infrastructure when possible.
2. For the safety of Municipal Park patrons, and to allow full line of sight near Municipal Park property, the Network Provider shall not install ground equipment in a Public Right-of-Way that is within a park, unless written approval is given by the Park and Recreation Director.
3. In order to minimize negative visual impact to the surrounding area and in accordance with Chapter 284, Sec. 284.102 (1), to enhance the safety requirements of line of sight of pedestrians, the City may deny a request for a proposed Location if the Network Provider proposes Network Node ground equipment where existing ground equipment within two hundred and fifty (250) feet already occupies a footprint of five (5) square feet or more. Collocation of ground equipment is encouraged.
4. In accordance with Chapter 284.102 (1), in order to maximize the line of sight at street corners and intersections and to minimize any obstruction, impediment or hindrance to the usual travel or public safety on a Public Right-of-Way ground equipment shall not be installed within twenty (20) feet of a street corner or a street intersection.
5. Equipment enclosures and equipment mounting base plates shall be the same width as the pole or structure that they are attached to, even if they need to be slightly longer as a result. Narrow equipment enclosures are less likely to impede pedestrian traffic, impair views of buildings and scenic resources or to detract from streetscapes (see exhibit 16).
6. Equipment attached to a pole shall be installed at least twelve (12) feet above the ground in accordance with Chapter 284, Sec. 284.108, and if a Network Node attachment is projecting toward the street, for the safety and protection of the public and vehicular traffic, the attachment shall be installed no less than sixteen (16) feet above the ground (see exhibit 9).
7. In accordance with Chapter 284, Sec. 284.003 (a) (1) (C), Sec. 284.003 (a) (2) (C) and Sec. 284.003 (a) (3) (B), no protrusion from the outer circumference of the existing structure or pole shall be more than two (2) feet.
8. The color of all equipment shall match or complement its Location.
9. Equipment shall be stacked close together and on the same side of the pole or shall be Collocated with other ground equipment. 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.
10. Equipment shall be orientated away from nearby residential windows, doorways and entrances, and the primary pedestrian travel direction.
11. Equipment shall not be placed adjacent to the walkway in a manner that diminishes the comfort of pedestrians or be located within the Pedestrian Clear Zone (see exhibit 11).

## **H. Electrical Supply**

1. A Network Provider shall be responsible for obtaining any required electrical power service to the Wireless Facility. The City shall not be liable to the Network Provider for any stoppages or shortages of electrical power furnished to Wireless Facilities, including without limitation, stoppages or shortages caused by any act, omission or requirement of the public utility serving the structure or the act or omission of any other tenant or Network Provider of the structure, or for any other cause beyond the control of the City.
2. A Network Provider shall not allow or install generators or back up generators in the Public Right-of-Way in accordance with Chapter 284, Sec. 284.002 (12) (B) (1).

3. Network Providers shall utilize a line drop (no electric meter enclosure) if allowed by the utility company, or use the narrowest electric meter and disconnect available. Meter and other enclosures shall match the infrastructure that it is attached to and shall be well maintained, including regular painting and the use of a graffiti-resistant paint.
4. The disconnect switches shall be stacked above or below the meter, instead of attached to the side of the meter.
5. Electric meters and disconnect switches shall be located as required by the utility company. Electric meters and disconnect switches shall not be located on the side of the pole that faces the sidewalk. Conduit leading to the electric meter box and disconnect switch shall match the color of the pole.

## **J. Logo, Decals, Flashing Lights, RF Warning Sticker and Node IDs**

1. Network Provider shall post its name, identifying information, permit number and emergency telephone number in an area on the cabinet of the Wireless Facility that is visible to the public. Signage required under this section shall not exceed two (2) inches by four (4) inches, unless otherwise required by law (e.g. RF ground notification signs).
  - a. Place the node ID sticker on the underside of the equipment enclosure so it is only visible when standing next to the pole and looking up. If the node ID sticker cannot be placed on the underside of the main equipment area, place the sticker on the side of the enclosure facing in the direction of travel (e.g. north-facing for a pole on the right hand side of the street on a north-south street). Alternatively, consider combining with disconnect information.
  - b. Use sticker colors that are more muted (e.g. tan), complementary or the same color as the equipment but with white colored lettering.
  - c. Utilize the smallest and lowest visibility (e.g. yellow instead of blue) radio-frequency (RF) warning sticker required by government or electric utility regulations. Place the RF sticker as close to the antenna as possible, facing directly out toward the street, or directly away from street if there is no window or doorway within twenty-five (25) feet of the pole (preferred).
2. All equipment manufacturer decals shall be removed. Except as required by Law or by the Utility Pole owner, Network Provider shall not post any other signage or advertising on the Wireless Facilities (see exhibit 17).
3. Equipment shall not have flashing lights.
4. All visibly depressed manufacturer logos on equipment boxes shall be filled in.

## **K. Cabling**

1. Exposed wiring is prohibited. Above the electric meter and disconnect switch, all conduit and wiring shall be located inside the pole (see exhibit 9 and 11).
  - a. The use of shrouds, risers or conduit to reduce the appearance of cluttered or tangled cabling is required (see exhibit 17).
  - b. In some instances, installation practices such as using equipment enclosures with specific port locations, or crossing wires below a down-facing port on an equipment enclosure, can reduce the likelihood that cabling will appear cluttered or bend outward from the pole and further away from the enclosure.
  - c. Instructional notes for the installer shall be included on the plan drawings in a checklist format in order to ensure proper field installation.

## L. Paint

1. Pole colors shall match the existing street pole color scheme.
2. The color of the equipment enclosure shall match the infrastructure to which it is attached. The Antennas, Brackets (mounting) and Cabling (ABC) shall match the color of the equipment (including the fiber termination enclosure). Many installations feature wide variations in paint colors, which is distracting. All equipment shall match pole, including PVC, steel risers, strap and/or other material.

## VII. Metered Parking Spaces

1. If the placement or maintenance to be performed by the Network Providers requires the obstruction of any City owned or operated metered parking spaces, the Network Provider shall obtain City approval, which shall not be unreasonably withheld, and pay a fee, if required, to the City as prescribed in any existing or subsequently enacted City Ordinance.

## VIII. Trees and Vegetation

1. Except in cases where normal tree or vegetation trimming is necessary to ensure the safe operation of the communications service or to protect the Network Provider's Wireless Facilities, the removal, cutting, marring, defacing or destruction of any trees or other vegetation (other than grass) by Network Providers within the Public Rights-of-Way is prohibited, unless the Network Provider has obtained all applicable permits from the City Forester.
2. All such normal tree or vegetation trimming by the Network Provider must be performed in accordance with the requirements of existing or subsequently enacted City ordinances and shall be at the Network Provider's own expense.
3. All other removal, cutting, marring, defacing or destruction of any trees or other vegetation (other than grass) by the Network Provider shall be subject to the supervision and direction of the City Forester, Department of Park and Recreation or other appropriate governmental authority, including the Public Improvement District. If the Network Provider either (i) fails to engage in normal tree or vegetation trimming on public property and such failure results in the Network Provider's Wireless Facilities causing damage or injury to any property or person, or (ii) engages in normal tree or vegetation trimming on public property and through such action causes damage or injury to any property or person, then the Network Provider, by act of registering hereunder, agrees to **INDEMNIFY, HOLD HARMLESS AND DEFEND THE CITY FOR ANY LIABILITY RESULTING FROM SUCH DAMAGE OR INJURY**. The Network Provider may contract for such services provided; any firm or individual so retained shall receive City approval prior to commencing such activity.

## IX. Installation

1. A Network Provider shall, at its own cost and expense, install and construct the Micro Network Node, Network Node facilities, Node Support Poles and related ground equipment in a good and workmanlike manner and in accordance with the requirements promulgated by the City T/PW Director, as such may be amended from time to time. Network Provider's work shall be subject to the regulation, control and direction of the City through the T/PW Director. All work done in connection with the installation, operation, maintenance, repair, modification and replacement of the Micro Network Node, Network Node facilities, Node Support Poles and related ground equipment shall be in compliance with all applicable local, State and Federal laws, ordinances, codes, rules and regulations.
2. In an effort to minimize the adverse impact on the Public Rights-of-Way and other municipal improvements, a Network Provider may be required to coordinate the placement or maintenance of its Wireless Facilities with any work, construction, installation in or repairs of the subject Public Rights-of-Way or other facilities therein that is occurring or is scheduled to occur within a reasonable time from application for a Permit. Every Network Providers shall make space in its trench and conduit within the Public Rights-of-Way available to other providers, consistent with all applicable Laws. Every Network Provider shall utilize existing conduits, pathways and other facilities whenever possible, and shall not place or maintain any new, different, or additional poles, conduits, pathways or other facilities, whether in the Public Rights-of-Way or on privately owned property, until written approval is obtained from the City or other appropriate governmental authority, and, where applicable, from the private property owner.

3. Potholing by hydro excavation method shall be required when conduit crosses a water or sanitary sewer mains. Oversight by a City inspector is required during construction.
4. All work shall conclude ten (10) calendar days from commencement of installation each Wireless Facility.

## **X. Restoration**

1. Network Providers shall repair any damage to the right-of-way, or any facilities located within the right-of-way, and the property of any third party resulting from Network Provider's removal or relocation activities (or any other of Network Provider's activities hereunder) within ten (10) calendar days following the date of such removal or relocation, at Network Provider's sole cost and expense, including without limitation, restoration of the right-of-way and such property to a similar or better condition as it was immediately before the date Network Provider was granted a Permit for the applicable location or did the work at such location (even if Network Provider did not first obtain a Permit), including, without limitation, restoration or replacement of any paving system, damaged trees, shrubs or other vegetation. Such repair, restoration and replacement shall be subject to the sole, reasonable approval of the T/PW Director.
2. If the Network Provider fails to complete such restoration within ten (10) calendar days following the completion of such placement or maintenance, the City may perform such restoration and charge the costs of the restoration to the Network Provider. City will issue an invoice for such cost. Invoice must be paid within thirty (30) calendar days. The Network Provider shall, to the satisfaction of the City's T/PW or Water Department Director, maintain and correct any restorations made pursuant hereto for a period of twelve (12) months following the date of its completion, including restorations made by the City. Failure to comply shall be deemed sufficient grounds for denial of any future Permits for the placement or maintenance of Wireless Facilities.

## **XI. Inspections**

1. The T/PW Director or designee reserves the right to perform visual inspections of any Micro Network Node, Network Node, Node Support Pole or related ground equipment located in the Public Right-of-Way as the T/PW Director deems appropriate. A Network Provider may have a representative present during such inspection.

## **XII. Effect of Approval**

1. A Wireless Facility that has received City approval in the form of a permit shall be considered an existing Wireless Facility as long as such permit is current and not expired.
2. Permits for the installation and construction for Wireless Facilities shall be valid for a period of six (6) months. Upon expiration of the permit, the Network Provider must reapply.
3. **As Built.** A Network Provider shall maintain accurate maps and other appropriate records of its Network Node facilities, Node Support Poles and related ground equipment as they are actually constructed in the Public Rights-of-Way, including, upon request, the use of Auto CAD/GIS digital format. A Network Provider shall provide additional maps to the City upon request. All maps shall conform to the City of Fort Worth standards.

## **XIII. Waivers**

1. By its discretionary consent and agreement, the City may grant exceptions to the above restricted locations and sizes, but only in a non-exclusive, and non-discriminatory manner, as allowed or required by Chapter 284, Sec. 284.109 and Sec. 284.110.

## **XIV.Appeals**

1. All appeals related to this Design Manual will be heard and decided by the City Manager or City Manager's designee and must be made in writing. An appeal must be made within thirty (30) calendar days of the Network Provider receiving a decision from the City. In considering an appeal of a decision of the T/PW or Planning and Development Director or designee, the following shall be considered:
  - a. Application requesting the installation of Wireless Facilities;
  - b. The T/PW and Planning and Development Directors or designees' decision;
  - c. The applicant's written statement of the grounds for appeal; and
  - d. The provisions of this Design Manual, in order to determine whether the decision was consistent with the Design Manual.
2. If a written decision on the appeal is not rendered within ninety (90) calendar days from the date the written appeal is received, the requested accommodation shall be deemed granted.
3. The decision of the City Manager or designee is final and shall exhaust all administrative remedies.

## **XV.Improperly Located Wireless Facilities and Penalty**

1. Wireless Facilities shall not impede pedestrian or vehicular traffic in the Public Right-of-Way. If any Wireless Facilities are installed in a location that is not in accordance with the plans approved by the T/PW Director and impede pedestrian or vehicular traffic or do not comply or otherwise render the Public Right-of-Way non-compliant with applicable Laws, including the American Disabilities Act, then Network Provider shall promptly remove the Wireless Facilities at the sole cost and expense of the Network Provider. If the Network provider does not remove Wireless Facility within fifteen (15) calendar days of receiving notice from the City of such improper location, then the City shall remove the Wireless Facility. The Network Provider shall reimburse City for cost of removal.
2. All fines and penalties as per City Code Chapter 30-19 shall apply for all violations of the Design Manual.

## **XVI.Graffiti Abatement**

1. As soon as practical, but not later than ten (10) calendar days from the date Network Provider receives notice thereof, Network Provider shall remove all graffiti on any of its Micro Network Node, Network Node, Node Support Pole, and related ground equipment located in the right-of-way. The foregoing shall not relieve the Network Provider from complying with any City graffiti or visual blight ordinance or regulation.

## **XVII.Insurance, Indemnity, Bonding and Security Deposits**

1. Insurance, bonding and security deposits shall be in strict accordance with City requirements for utility work In the Public right-of-way.
2. Indemnity shall be in accordance with Chapter 284, Sec. 284.302, as provided for in Chapter 283, Sec. 283.057 (a) and (b) of the TLGC.

## **XVIII.Network Provider's Responsibility**

1. The Network Provider shall provide written notice to the T/PW Director or designee within ten (10) calendar days prior to performing any upgrades or maintenance on a Wireless Facility.

2. A Network Provider shall make citizen satisfaction a priority in using the Public Right-of-Way. Network Provider should train its employees to be customer service-oriented and to positively and politely interact with citizens when dealing with issues pertaining to its Wireless Facilities in the Public Right-of-Way. Network Provider's employees shall be clean, courteous, efficient, and neat in appearance and committed to offering the highest quality of interaction with the public. If, in the opinion of the T/PW Director, the Network Provider is not interacting in a positive and polite manner with citizens, they shall request Network Provider to take all remedial steps to conform to these standards.

### **XIX. Removal and Relocation by the Network Provider**

1. If the Network Provider removes or relocates a Wireless Facility at its own discretion, it shall notify the T/PW Director or Designee in writing not less than ten (10) calendar days prior to removal or relocation. Network Provider shall obtain all Permits required for relocation or removal of its Wireless Facilities prior to relocation or removal.
2. The City will not issue any refunds for any amounts paid by Network Provider for Wireless Facilities that have been removed and relocated.

### **XX. Removal and Relocation Required for a City Project**

1. In accordance with Chapter 284, Sec. 284.107, except as provided in existing Laws, a Network Provider shall relocate or adjust Wireless Facilities in a Public Right-of-Way in three (3) months and without cost to the City.
2. All Network Provider understands and acknowledges that the City may require any Network Provider to remove or relocate its Wireless Facilities, or any portion thereof from the Public Right-of-Way for City construction projects as allowed by applicable Laws.
3. Network Provider shall, at the T/PW Director's or designee's direction, remove or relocate its Wireless Facilities, or any portion thereof from the Public Right-of-Way at Network Provider's sole cost and expense, except as otherwise provided by applicable Laws, whenever the T/PW Director or designee reasonably determines that the relocation or removal is needed for any of the following purposes: water or sanitary sewer main breaks, and required for the construction, completion, repair, widening, relocation, or maintenance of, or use in connection with, any City construction or maintenance project of a street or Public Right-of-Way to enhance the public's use for travel and transportation.
4. If a Network Provider fails to remove or relocate the Wireless Facility, or portion thereof as requested, in writing, by the T/PW Director or designee within ninety (90) calendar days of Network Provider's receipt of the request, then the City shall be entitled to remove the Wireless Facility, or portion thereof, at Network Provider's sole cost and expense, without further notice to Network Provider.
5. A Network Provider shall, within thirty (30) calendar days following issuance of invoice for the same, reimburse the City for its reasonable expenses incurred in the removal and relocation (including, without limitation, overhead and storage expenses) of the Wireless Facility, or portion thereof.

### **XXI. Removal Required by City for Safety and Imminent Danger Reasons**

1. A Network Provider shall, at its sole cost and expense, promptly disconnect, remove or relocate the Wireless Facility within the time frame and in the manner required by the T/PW Director if the T/PW Director or designee reasonably determines that the disconnection, removal or relocation of any part of a Wireless Facility (a) is necessary to protect the public health, safety, welfare or City property, (b) the Wireless Facility, or portion thereof, is adversely affecting proper operation of streetlights or City property, or (c) Network Provider fails to obtain all applicable licenses, Permits and certifications required by Law for its Wireless Facilities, or use of any location under applicable Laws in strict accordance with the City's Public Rights-of-Way management ordinance, including, but limited to City Code Chapter 30-19, and other applicable ordinances, except to the extent not consistent with Chapter 284. If the T/PW Director reasonably determines that there is imminent danger to the public, then the City may immediately disconnect, remove or relocate the applicable Wireless Facilities equipment at the Network Provider's sole cost and expense.



2. The T/PW Director shall provide thirty (30) calendar days written notice to the Network Provider before removing a Micro Network Node, Network Node, Node Support Pole and related ground equipment under this Section, unless there is imminent danger to the public health, safety and welfare., in which case no notice is necessary.
3. A Network Provider shall, within thirty (30) calendar days following issuance of invoice for the same, reimburse the City for its reasonable expenses incurred in the removal and relocation (including, without limitation, overhead and storage expenses) of the Wireless Facility, or portion thereof.

## **XXII.Abandonment**

1. Network Providers shall remove Wireless Facilities when such Wireless Facilities have been abandoned, regardless of whether or not it receives notice from the City. Unless the City sends notice that removal must be completed immediately for failure to pay any fee, Node attachment fee or to ensure public health, safety, and welfare, the removal must be completed within the earlier of ninety (90) calendar days of the Wireless Facility being abandoned or within ninety (90) calendar days of receipt of written notice from the City. Failure to remove within the stated time will be considered abandonment. When Network Provider removes or abandons permanent structures in the Public Right-of-Way, the Network Provider shall notify the T/PW Director or designee in writing of such removal or abandonment and shall file with the T/PW Director the location and description of each Micro Network Node, Network Node, Node Support Pole and related ground equipment removed or abandoned. The T/PW may require the Network Provider to complete additional remedial measures necessary for public safety and the integrity of the Public Right-of-Way. Should the Network Provider fail to remove the abandoned Wireless Facility, the City may remove the abandoned Wireless Facility at the Network Provider or end user's expense.
2. A Network Provider shall, within thirty (30) calendar days following issuance of invoice for the same, reimburse the City for its reasonable expenses incurred in the removal (including, without limitation, overhead and storage expenses) of the Wireless Facility, or portion thereof.

## **XXIII.Pole ownership.**

1. City owns all non-utility poles in the Public Right-of-Way and shall continue to own any and all poles even if such poles are replaced or relocated by a Network Provider. No part of a Wireless Facility erected or placed on a pole or otherwise on the Public Right-of-Way by Network Provider will become, or be considered by the City as being affixed to or a part of, the Public Right-of-Way. All portions of the Wireless Facility constructed, modified, erected, or placed by Network Provider on the Public Right-of-Way will be and remain the property of Network Provider and may be removed by Network Provider at any time, provided the Network Provider shall notify the City, in writing, prior to any work in the Public Right-of-Way.

## **XXIV.Design Manual-Updates**

1. Placement or modification of Wireless Facilities shall comply with this Design Manual at the time the application for installation or modification is submitted.

## **XXV.Definitions**

The definitions as used in TLGC, Chapter 284, Sec. 284.002, shall be used in this Design Manual, unless otherwise noted below.

*Antenna* means communications equipment that transmits or receives electromagnetic radio frequency signals used in the provision of wireless services.

*Applicable Codes* means:

- a) Uniform building, fire, electrical, plumbing or mechanical codes adopted by a recognized national code organization; and
- b) Local amendments to those codes to the extent not inconsistent with Chapter 284.

*City* means the City of Fort Worth, Texas, or its lawful successor.

*City Manager* shall mean City Manager or designee.

*Chapter 284* means Texas Local Government Code, Chapter 284.

*Collocate and Collocation* mean the installation, mounting, maintenance, modification, operation or replacement of network nodes in a Public Right-of-Way on or adjacent to a pole.

*Concealment or Camouflaged* means any Wireless Facility or Pole that is covered, blended, painted, disguised, camouflaged or otherwise concealed such that the Wireless Facility blends into the surrounding environment and is visually unobtrusive as allowed as a condition for City advance approval under Chapter 284, Sec. 284.105, in Historic or Design Districts. A Concealed or Camouflaged Wireless Facility or Pole also includes any Wireless Facility or Pole conforming to the surrounding area in which the Wireless Facility or Pole is located and may include, but is not limited to, hidden beneath a façade, blended with surrounding area design, painted to match the supporting area or disguised with artificial tree branches.

*Decorative Pole* means a streetlight pole specially designed and placed for aesthetic purposes and on which no appurtenances or attachments, other than specially designed informational or directional signage or temporary holiday or special event attachments, have been placed or are permitted to be placed according to nondiscriminatory municipal codes.

*Design District* means an area that is zoned or otherwise designated by municipal code, and for which the city maintains and enforces unique design and aesthetic standards on a uniform and nondiscriminatory basis.

*Disaster Emergency or Disaster or Emergency* means an imminent, impending or actual natural or humanly induced situation wherein the health, safety or welfare of the residents of the city is threatened, and includes, but is not limited to, any declaration of emergency by City, State or Federal governmental authorities.

*Distributed Antenna System or DAS* shall be included as a type of "Network Node."

*Easement* means and shall include any public easement or other compatible use created by dedication, or by other means, to the City for public utility purposes or any other purpose whatsoever. "Easement" shall include a private easement used for the provision of utilities.

*Federal Communications Commission or FCC* means the Federal Administrative Agency, or lawful successor, authorized to oversee cable television and other multichannel regulation on a national level.

*Furnishing Zone* means the paved portion of the streetscape zone typically located between the back of curb and the sidewalk. The furnishing zone typically includes street light poles and lights, utility poles, regulatory signage, traffic signal equipment and street trees. In some cases a streetscape zone may not have a furnishing zone.

*Highway* means right-of-way adjacent to a State or Federal highway.

*Historic District* means an area that is zoned or otherwise designated as a historic district under municipal, State or Federal law.

*Law* means common law or a federal, state, or local law, statute, code, rule, regulation, order or ordinance.

*Local* means within the geographical boundaries of the City.

*Location* means the City approved and lawfully permitted location for the Network Node.

*Macro Tower* means a guyed or self-supported pole or monopole greater than the height parameters prescribed by Chapter 284, Section 284.103, and that supports or is capable of supporting antennas.

*Mayor* means the Mayor for the City.

*Micro Network Node* means a network node that is not larger in dimension than 24 inches in length, 15 inches in width, and 12 inches in height, and that has an exterior antenna, if any, not longer than 11 inches.

*Municipal Park* means an area that is zoned or otherwise designated by municipal code as a public park for the purpose of recreational activity.

*Municipally Owned Utility Pole* means a utility pole owned or operated by a municipally owned utility, as defined by Section 11.003, Utilities Code, and located in a public right-of-way.

*MUTCD* means Manual of Uniform Traffic Control Devices.

*Network Node* means equipment at a fixed location that enables wireless communications between user equipment and a communications network. The term:

- a) Includes:
  - i) Equipment associated with wireless communications;
  - ii) A radio transceiver, an antenna, a battery-only backup power supply and comparable equipment, regardless of technological configuration; and
  - iii) Coaxial or fiber-optic cable that is immediately adjacent to and directly associated with a particular collocation; and
- b) Does not include:
  - i) An electric generator;
  - ii) A pole; or
  - iii) A macro tower.

*Network Provider* means:

- a) A wireless service provider; or
- b) A person that does not provide wireless services and that is not an electric utility but builds or installs on behalf of a wireless service provider:
  - i) Network Nodes; or
  - ii) Node Support Poles or any other structure that supports or is capable of supporting a Network Node.

*Node Support Pole* means a pole installed by a network provider for the primary purpose of supporting a Network Node.

*Parkway Strip* means the unpaved portion of the right-of-way between the back of curb and the sidewalk. The parkway strip typically includes street light poles and lights, utility poles, regulatory signage, traffic signal equipment and street trees. In some instances a streetscape zone may not have a parkway strip.

*Pedestrian Clear Zone* means the unencumbered paved or sidewalk portion of the streetscape zone inside the right-of-way. The pedestrian clear zone may or may not be separated from the travel lane by a furnishing zone or parkway strip.

*Permit* means a written authorization for the use of the Public Right-of-Way or collocation on a service pole required from a municipality before a network provider may perform an action or initiate, continue or complete a project over which the municipality has police power authority.

*Pole* means a service pole, municipally owned utility pole, Node Support Pole, or utility pole.

*Private Easement* means an easement or other real property right that is only for the benefit of the grantor and grantee and their successors and assigns.

*Provider* has the same meaning as “Network Provider.”

*Public Right-of-Way* means the area on, below or above a public roadway, highway, street, public sidewalk, alley, waterway or utility easement in which the municipality has an interest. The term does not include:

- a) A private easement; or
- b) The airwaves above a Public Right-of-Way with regard to wireless telecommunications.

*Public Right-of-Way Management Ordinance* means an ordinance that complies with Chapter 284, Subchapter C.

*Residential Area* means a single-family residential lot or other multifamily residence or undeveloped land that is designated for residential use by zoning

*Section 106 Review* means Section 106 of the National Historic Preservation Act of 1966 (NHPA) which requires Federal agencies to take into account the effects of their undertakings on historic properties, and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment.

*Service Pole* means a pole, other than a municipally owned utility pole, owned or operated by a municipality and located in a Public Right-of-Way, including:

- a) A pole that supports traffic control functions;
- b) A structure for signage;
- c) A pole that supports lighting, other than a decorative pole; and
- d) A pole or similar structure owned or operated by a municipality and supporting only Network Nodes.

*Small Cell* shall be included as a type of "Network Node."

*Street* means only the portion of the right-of-way used for vehicular travel, being the area between the inside of the curb to the inside of the opposite curb, or the area between the two parallel edges of the roadway for vehicular travel where there is no curb. A "street" is generally part of, but smaller in width than the width of the entire right-of-way; while a right-of-way may include sidewalks and utility easements, a "street" does not. A "street" does not include the curb or the sidewalk, if either are present at the time of a permit application or if added later.

*TAS* means Texas Accessibility Standards.

*Traffic Signal* means any device, whether manually, electrically or mechanically operated, by which traffic is alternately directed to stop and to proceed.

*Transport Facility* means each transmission path physically within a Public Right-of-Way, extending with a physical line from a network node directly to the network, for the purpose of providing backhaul for Network Nodes.

*Underground Requirement Area* means an area where poles, overhead wires and associated overhead or above ground structures have been removed and buried or have been approved for burial underground pursuant to municipal ordinances, zoning regulations, state law, private deed restrictions, and other public or private restrictions that prohibit installing above ground structures in a Public Right-of-Way.

*User* means a person or organization that conducts a business over facilities occupying the whole or a part of a public street or right-of-way, depending on the context.

*Utility Pole* means a pole that provides:

- a) Electric distribution with a voltage rating of not more than 34.5 kilovolts; or
- b) Services of a telecommunications provider, as defined by Chapter 284, Section 51.002, Utilities Code.

*Wireless Service* means any service, using licensed or unlicensed wireless spectrum, including the use of Wi-Fi, whether at a fixed location or mobile, provided to the public using a Network Node.

*Wireless Service Provider* means a person that provides wireless service to the public.

*Wireless Facilities* mean Micro Network Nodes, Network Nodes, Node Support Poles, Transport Facilities, and any related equipment, including, but not limited to, ground or underground equipment not Marco facilities.

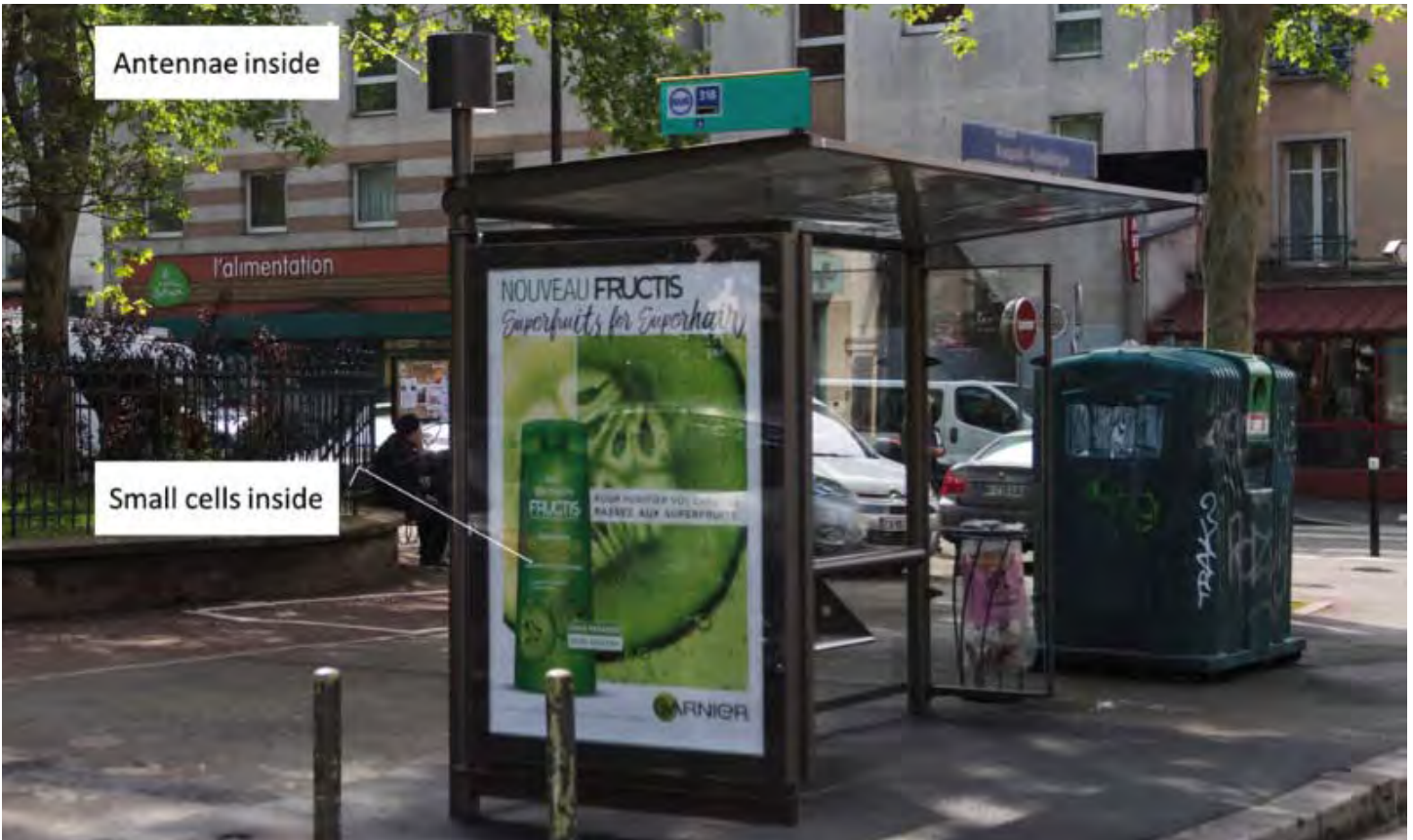


Exhibit 1– Unique and creative design solutions are encouraged and should be contextual to the Location of the Wireless Facility.

## WIRELESS FACILITIES AND INFRASTRUCTURE DESIGN MANUAL



Exhibit 2- Non-decorative streetlights with a height of more than 20 feet.



Exhibit 3- Traffic signal structure.





Exhibit 4- Decorative street light with public art. Network Providers shall not install Wireless Facilities on Public Art without written permission from the artist to prevent potential copyright issues.



Exhibit 5- Example of a photo simulation.



Exhibit 6- In Historic Districts and Design Districts with Decorative Poles more than one Network Node is not allowed because it fails to meet the Concealment standards.



Exhibit 7- Aerial power and fiber connections are not be permitted. They create additional visual clutter and may require extra tension and structural support.



Exhibit 8- All attachments on all Service Poles shall be at least twelve (12) feet above grade, and if a Wireless Facilities' attachment is projecting toward the street, for the safety and protection of the public and vehicular traffic, the attachment shall be installed no less than sixteen (16) feet above the ground (see exhibit 12).



Exhibit 9– The Pole on the right the Wireless Facility is mounted in an inconspicuous location and painted to match. The Pole on the left the Wireless Facility is a different color than the pole and there is exposed conduit.



Exhibit 10- Exposed wiring is prohibited. Above the electric meter and disconnect switch, all conduit and wiring shall be located inside the pole. All equipment is located inside the pole and avoids creating physical or visual obstruction to pedestrian and vehicular traffic.



Exhibit 11- Equipment shall not be placed adjacent to the walkway in a manner that diminishes the comfort of pedestrians or be located within the Pedestrian Clear Zone



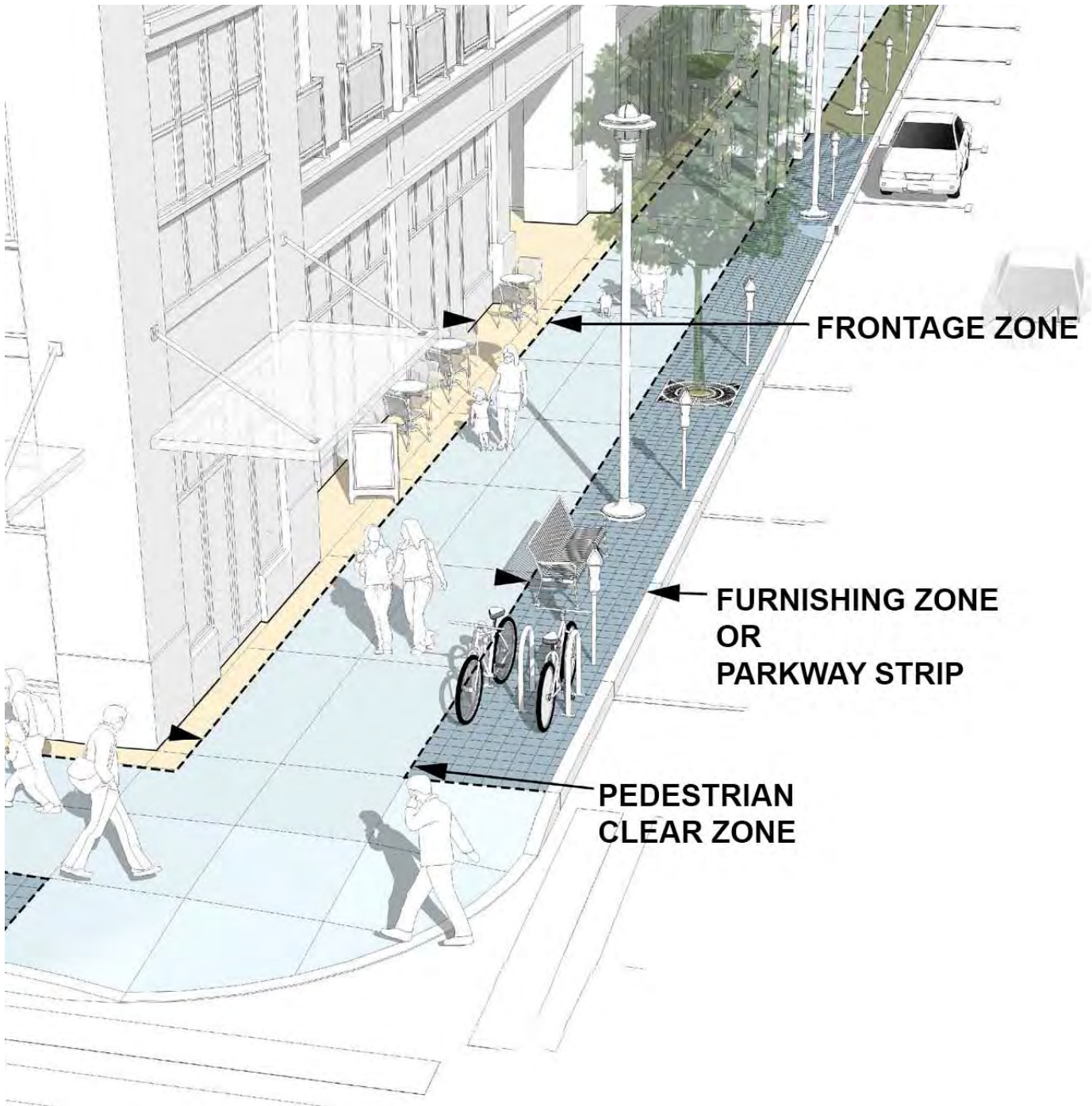


Exhibit 12- Where available, all Wireless Facilities shall be located in the Furnishing Zone or Parkway Strip in line with existing street trees and Decorative Poles. In no instance shall a Wireless Facility equipment be located in the Pedestrian Clear Zone. In the Downtown Urban Design District a seven (7) foot wide Pedestrian Clear Zone shall be maintained.

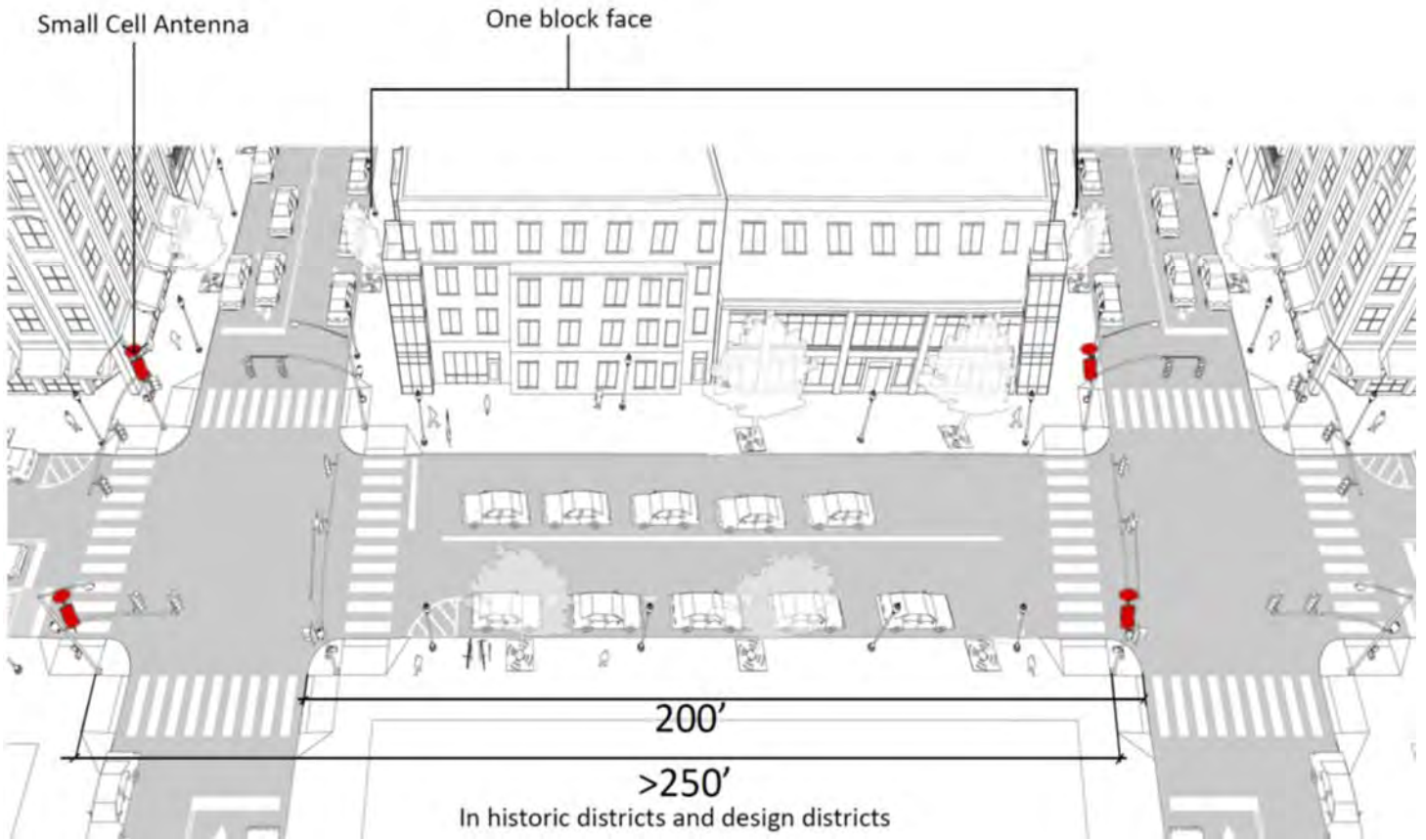


Exhibit 13- The separation between Wireless Facilities shall be a minimum of two-hundred (200) feet or two-hundred fifty (250) feet in Historic Districts and Design Districts with decorative poles, per block face, to minimize the hazard of multiple poles adjacent to road ways and to minimize effect on property values and aesthetics in the area



Exhibit 14- The Wireless Facility is located in front of the residential building. Wireless Facilities shall be located where the shared property line intersects the Public Right-of-Way



Exhibit 15- Network Node placement shall not impair light, air, or views from adjacent windows.



**Inappropriate**



**Appropriate**

Exhibit 16- Equipment enclosures and equipment mounting base plates shall be the same width as the pole or structure that they are attached to, even if they need to be slightly longer as a result. Narrow equipment enclosures are less likely to impede pedestrian traffic, impair views of buildings and scenic resources or to detract from streetscapes (see exhibit 14).



Exhibit 17– The cabling that is cluttered & tangled. Excess loose cabling, excess decals/ stickers, and cluttered appearance of equipment cabinets is not allowed. Repetitive, and highly visible RF warning stickers, and equipment manufacturer decals located near bottom of pole and visible to pedestrians are not allowed. The presence of multiple stickers and manufacturer logos, which should be removed or painted over.