CITY OF CEDAR PARK
NETWORK NODE DESIGN MANUAL

I. Purpose and Applicability

a. Purpose. The City of Cedar Park ("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. Local Government Code Chapter 284 allows Network Providers to install in the Public Rights-of-Way their wireless facilities, described and defined in Chapter 284 as "Micro Network Nodes," "Network Nodes," and "Node Support Poles."

b. Applicability. This Design Manual governs siting and the installation of Network Nodes, Node Support Poles and related Ground Equipment pursuant to Local Government Code Chapter 284. This Design Manual shall apply to any sitings, installations, collocations of Network Nodes, Node Support Poles, Micro Network Nodes, Distributed Antenna Systems, microwave communications or other Wireless Facilities, by whatever nomenclature they are known, in, on, over or under the public rights-of-way, whether they are installed pursuant to Chapter 284, or installed pursuant to an agreement as agreed to and consented to by the City in its discretion, or installed as may otherwise be allowed by state law. A Network Provider shall comply with the City's Use Of Right-Of-Way For Construction, Excavation, Facility Installation, Or Temporary Use Public Rights-of-Way Management Ordinance, including the Traffic Criteria Manual, this Design Manual, and all other applicable City regulations except where in conflict with Chapter 284.

II. Definitions.

The terms used in this Design Manual have the meanings attributed to them by Texas Local Government Code Section 284.002, as amended, if defined therein, and as stated below.

a. "Antenna" means communications equipment transmitting or receiving electromagnetic radio frequency signals used in providing Wireless Service.

b. "Applicable Code" means: (1) uniform building, fire, electrical, plumbing, or mechanical codes adopted by a recognized national code organization; and (2) COCP amendments to those codes.

c. *"Cantenna"* means a waveguide antenna, directional in nature, used to better detect or broaden a wireless network's range generally in the shape of a can.

d. *"City"* means the City of Cedar Park, Texas and the City's officers and employees.

e. *"City Manager"* means the City of Cedar Park City Manager or their designee.

f. "*City Pole*" means a service pole, as defined by Chapter 284 of the Texas Local Government Code.

g. "Collocation" means the installation of a Network Node on an existing Service Pole.

h. "*CPCO*" means the Cedar Park Code of Ordinances, as amended.

i. *"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 according to Applicable Codes.

j. *"Design District"* means an area zoned or otherwise designated by the City and for which the City maintains and enforces unique design and aesthetic standards.

k. " Director" means the City's Director of Engineering, or their designee.

l. *"Facilities"* any equipment or infrastructure supporting a Network Node, including Transport Facilities, Network Nodes, Node Support Poles, and Ground Equipment.

m. "*Ground Equipment"* means a Wireless Facility that is located on the surface of the Public Right-of-Way in an approved permit that is immediately adjacent to the Pole on which the Network Node is located.

n. *"Historic District"* means an area zoned or otherwise designated as a historic district under city, state or federal law.

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

p. *"Municipal Park"* means an area zoned or otherwise designated by the City as a public park for recreational activity.

q. *"Network Node"* means equipment at a fixed location enabling wireless communications between user equipment and a communications network, and 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 immediately adjacent to and directly associated with a particular collocation

Network Node does not include:

iv. An electric generator;
v. A pole; or
vi. A macro tower.

r. *"Network Node Facility"* means Network Node(s), Node Support Pole(s), Transport Facilit(ies), ground equipment, Antenna(s), Cantenna(s), and any other equipment used to facilitate the implementation of Network Nodes and related technology.

s. "*Network Provider*" means:

i. A Wireless Service Provider; or
ii. A person who does not provide Wireless Service and is not an electric utility but builds or installs on behalf of a Wireless Service Provider:

1. Network Nodes; or
2. Node Support Poles or any other structure supporting or capable of supporting a Network Node.

t. *"Node Support Pole"* means a Pole installed by a Network Provider for the primary purpose of supporting a Network Node.

u. *"Permit"* means written authorization to use Public ROW or collocation on a Service Pole required from the City before a Network Provider may perform an action or initiate, continue, or complete a project over which the City has police power authority.

v. *"Park"* means the various properties under the direction, control and supervision of the City's Director of Parks and Recreation Department pursuant to the authority granted by City Council and the City Code of Ordinances.

w. *"PEC"* means Pedernales Electric Cooperative, Inc.

x. *"Pole"* means Service Pole, Node Support Pole, or Utility Pole.

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

z. *"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 private easement or the airwaves above a public Right-of-Way with regard to wireless telecommunications.

aa. "*Right-of-Way Management Ordinance"* means Cedar Park Code of Ordinances Articles 16.01, Adoption of City of Austin Transportation Criteria Manual; Article 16.02, Right-of-Way; and Article 16.03, Use of Right-of-Way, and any amendments thereto.

bb. *"Service Pole"* means a Pole, owned or operated by the City and located in the Public ROW, including:

i. A Pole supporting traffic control functions;

ii. A structure for signage;

iii. A Pole supporting lighting, other than a Decorative Pole; and

iv. A Pole or similar structure owned or operated by the City and supporting only Network Nodes.

cc. *"Special District"* means a Design District or Historic District.

dd. "Streetlight Pole" means any streetlight located in the public right-of-way that is owned by the City, Texas Department of Transportation (TxDOT), Central Texas Regional Mobility Authority (CTRMA), any property owner's association, or private party.

ee. *"TCM"* means the Transportation Criteria Manual adopted by the City pursuant to Cedar Park Code of Ordinances Article 16.01.

ff. "*Traffic Pole*" means a Pole supporting traffic control functions owned by either the City, TxDOT or CTRMA.

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

hh. *"Transport Facility"* means each transmission path physically within a Public ROW, extending with a physical line from a Network Node directly to the network for providing backhaul for Network Nodes.

ii. "Utility Pole" means a Pole providing: (i) electric distribution with a voltage rating of not more than 34.5 kilovolts; or (ii) services of a telecommunications provider.

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

kk. "Wireless Service Provider" means a person providing Wireless Services to the public.

III. Applicable Materials

a. Applicable Regulations

i. Cedar Park Code of Ordinances Chapter 16, Transportation Regulations Article 16.01, Adoption of City of Austin Transportation Criteria Manual & Article 16.03, Use of Right-of-Way

ii. Cedar Park Code of Ordinances, Section 14.08 Lighting regulations

iii. Cedar Park Code of Ordinances, Article 14.06 Electrical and Communication Utilities

iv. Cedar Park Code of Ordinances Appendix A, Fee Schedule Section 2.300 Public Works Fees

v. Transportation Criteria Manual

b. Forms and Agreements

i. Right-of-Way Use Permit Application

ii. License Agreement

iii. Network Provider Eligibility Form

iv. Application Checklists

IV. Application Process, Review Timelines & Fees

a. Permit Eligibility and Application. Before filing an application for a permit to install a Network Node Facility, a Network Provider shall provide the Director the information required by CPCO Section 16.03.038, as amended. An application for a permit to install a Network Node Facility shall not be deemed received unless the applicant first receives the pre-application site-specific assessment, as required herein.

b. Permit Required. No person shall place a Network Node, Transport Facility or Node Support Pole in the public right-of-way, without first filing a permit application and obtaining a permit, except as otherwise provided in this Article.

c. Permit Application. All permit applications filed pursuant to this Design Manual shall be filed electronically with the City through the City's official website (www.cedarparktexas.gov).

d. Pre-Application Site-Specific Assessment. A Network Provider, prior to submitting a Network Node Facility Permit Application, shall obtain from the City a pre-application site-specific assessment for availability, suitability, safety, and conflicts that includes a site walk and interview with the Director's representative and review of preliminary

architectural and engineering design drawings, in accordance with CPCO Section 16.03.038, as amended.

e. Permit Application. The Permit application shall include all of the required information in accordance with all applicable CPCO requirements and shall include the following items with the submitted application:

i. Map showing proposed location of the Network Node.

ii. Aerial Map showing the location of the proposed Network Node, and a current street view image. This shall include a before and-after image of the Network Node and all proposed attachments and associated standalone equipment.

iii. Analysis showing that the proposed Network Node is spaced at least 1,000 feet from another existing or previously permitted Network Node.

f. Review of Applications. City staff shall review applications for Network Nodes, Node Support Poles and Transport Facilities to verify compliance with applicable law and CPCO in conformance with the timeline set forth below.

i. Within 10 days of receiving an application for a Network Node or Node Support Pole, or a Transport Facility, the City shall determine and notify the Applicant whether the application is complete. lf the application is incomplete, the City will specifically identify the missing information in such notification. The timelines pursuant to Subsections IV(f)(ii) shall be reset upon the resubmission by the applicant with the supplemental information requested by the City. For subsequent determinations of incompleteness, the timelines pursuant to Subsections IV(f)(ii) shall be tolled if the City provides written notice within 10 days that the supplemental submission did not provide the information identified in the original notice delineating missing information.

ii. The City shall make its final decision to approve or deny a complete application no later than:

1. 21 days after receipt of a complete application for a transport facility;

2. 60 days after receipt of a complete application for a network node; and

3. 90 days after receipt of a completed application for a new node support pole.

iii. The City shall advise the Applicant in writing of its final decision. If the application is denied, the City shall provide the basis for that denial, including specific provisions of City Code or applicable law on which the denial was based, and send

the documentation to the Applicant on or before the day the City denies the application.

g. Fees

Network Provider shall pay the fees set forth in Cedar Park Code of Ordinances, Appendix A Fee Schedule, Section 2.300 Public Works Fees, Subsection (f), which is restated below.

Network Node Application Fee	$500	Up to five Network Nodes, with an additional $100 for each Network Node beyond five
New Node Support Pole Application Fee	$1,000	New Node Support Pole
Annual Fee	$270/Network Node/year	For all recurring fees, including any possible ROW access fee or fee for attachment to municipally-owned structures in the ROW

h. Permit Expiration for Non-Performance. Any permit issued by the City shall expire in accordance with CPCO Section 16.03.040, as amended.

V. Restricted Placement

a. Spacing. No Network Node shall be placed within 1,000 feet of any other permitted Network Node to minimize the hazard of poles adjacent to roadways and to minimize effect on property values and aesthetics on the area.

b. No Network Provider may install a new Node Support Pole in a Public Right-of-Way without the City's discretionary, nondiscriminatory, and written consent if the Public Right-of-Way:

i. is in a municipal park; or

ii. is adjacent to a street or thorough fare that is:

1. Not more than 50 feet wide; and

2. Adjacent to single-family residential lots or other multifamily residences or undeveloped land that is designated for residential use by zoning or deed restriction.

c. As a condition for approval of new network nodes or new node support poles in a historic district or a Design District in accordance with Local Government Code Chapter 284, the City will require reasonable design or concealment measures as described in this Design Manual for New Network Nodes or New Node Support Poles located in Design Districts. The Design Districts designated by the City are set forth in CPCO Article 14.08, as amended.

d. To receive the City's discretionary, nondiscriminatory, and written consent to install a new Network Node or Node Support Pole pursuant to subsection (a) or (b), a Network Provider must meet all applicable concealment requirements.

VI. Requirements Applicable to Network Node Facilities

a. Concealment & Design.

i. All Network Node equipment installed on a new Node Support Pole (excluding replacement Streetlight Poles) shall be installed internal to the pole.

ii. All Network Node equipment installed on an existing Utility Pole, Streetlight Pole or Traffic Pole shall be either internal to the Pole or shrouded or a combination.

iii. Network Node equipment not installed internal to the pole shall be concealed or enclosed as much as reasonably possible in an equipment box, cabinet, or other unit that may include ventilation openings. External cables and wires hanging off a pole shall be sheathed or enclosed in a conduit, so that wires are protected and not visible or visually minimized to the extent possible in strict accordance with this Design Manual and other applicable City ordinances.

iv. Decorative transition between the equipment cabinet and upper Pole shall be installed over the equipment cabinet upper bolts or decorative base cover installed to match the equipment cabinet size.

v. All hardware connections shall be hidden from view.

vi. Each Pole component shall be architecturally compatible to create a cohesive aesthetic.

vii. All concealment of Network Node Facilities, including installation within Poles, shall account for not only concealment of 4G technology, but also for 5G technology.

viii. Network Nodes and Node Support Poles must be designed to be compact and unobtrusive so as to minimize the visual impact on the surrounding streetscape. When shrouding equipment, the applicant shall avoid using enclosures that are bulky or include distracting materials.

1. Network nodes and equipment shall be grouped or stacked closely together on the same side of the pole. Large gaps between equipment and enclosures should be avoided.

2. The color of a network node placed on any existing pole must match the color of the existing pole.

3. Network Providers shall size Network Node components to meet the City's design criteria below:

a. A decorative transition shall exist between the equipment cabinet and upper Pole installed over the equipment cabinet upper bolts or decorative base cover to match the equipment cabinet size.

b. The upper pole shall be scaled to 0.5 to 0.75 the size of the equipment cabinet, with a 10-inch minimum outer diameter.

c. All hardware connections shall be hidden from view.

d. No horizontal flat spaces greater than 1.5 inches shall exist on the equipment cabinet.

e. Each Pole component shall be architecturally compatible to create a cohesive aesthetic.

Components generally include a: foundation, equipment cabinet, upper pole, Cantenna or Antenna enclosure, and all hardware and electrical equipment necessary for a complete assembly. Streetlight Poles will also include an LED luminaire, mast arm, and luminaire control node.

b. Placement and Installation of New Node Support Poles. Prior to installation or modification of a new or existing Node Support Pole, including replacing an existing Streetlight Pole with a new Pole, a Network Provider shall comply with the installation and placement requirements below:

i. Freestanding Node Support Poles. All freestanding Node Support Poles shall be privately owned and shall be placed:

1. To not impede, obstruct or hinder pedestrian or vehicular travel;

2. To not significantly create a new obstruction to property sight lines;

3. At the intersection of property lines or along secondary property street facing;

4. In alignment with existing trees, utility poles, and streetlights;

5. So as not to inhibit a consistent, uniform streetscape, or tree trimming. Any tree trimming must maintain the tree's natural shape and growth pattern.

6. Equidistant between trees when possible, with a minimum 15 foot separation;

7. With required clearing from existing utilities;

8. 10 feet from the triangle extension of an alley way flare;

9. No closer than 18 inches from the curb face;

10. Not within 100 feet of the apron of a fire station or other adjacent emergency service facility; and

11. No closer than 1,000 feet, radially, from another network node; and

12. Not encroaching into a municipal park beyond the Public Right-of-Way line.

ii. Replacement Streetlight Poles.

1. Network Providers shall only locate Replacement Streetlight Poles:

    a. Where an existing Streetlight Pole can be removed and replaced; or
    b. At a new location requiring a Streetlight Pole.

2. The replacement Streetlight Pole shall be placed in the same location as the existing street light pole it is replacing or at an alternate location as may be approved by the Director at their discretion and shall be substantially similar as the Streetlight Pole being replaced in terms of materials, color, finish, etc. and shall include an LED luminaire and mast arm meeting the requirements of this Design Manual and applicable CPCO, as approved by the Director, or owner of the Pole.

3. If the replacement Streetlight Pole is owned by an entity other than the City, approval shall also be obtained from the owner of the pole prior to permit issuance.

c. Collocation of Network Node equipment on a Traffic Pole. Network providers may request to collocate network nodes on Traffic Poles provided that Network Nodes or associated equipment may only be installed and enclosed in accordance with the design, installation, and construction details for a Traffic Pole collocation shown and described in the TCM and other applicable CPCO.

d. Collocation of Network Node equipment on a Streetlight Pole, Utility Pole or other City-owned Pole. Prior to collocation on a Streetlight Pole, Utility Pole or other City-owned Pole a Network Provider shall provide the following:

i. An evaluation prepared by a professional engineer licensed in the State of Texas, which confirms the existing Pole and/or foundation infrastructure is structurally stable to carry proposed Network Nodes and can bear the wind load without pole modification, or whether the installation will require pole re-enforcement. If pole re-enforcement is necessary, the Network Provider shall provide engineering design and specification drawings for the proposed alteration to the existing pole. Any pole re-enforcement or replacement pole shall be at the Network Provider's sole cost. Structural reinforcement or replacement poles (if necessary) shall substantially match the color, and character of the pre-existing Pole in order to blend into the surrounding environment and be visually unobtrusive. If a replacement pole is proposed, it shall comply with all applicable concealment requirements and the above stated requirements of this Design Manual.

ii. Scaled dimensioned drawings, in plan and profile view, supplemented with pictures and drawing, of the proposed attachments to the Network Node to the existing poles as well as any other proposed equipment associated with the proposal, indicating the spacing from existing curb, driveways, sidewalk, and other existing light poles and any other poles or appurtenances. This shall include a before and-after image of the pole and all proposed attachments and associated standalone equipment.

iii. Scaled dimensioned construction plans indicating the current Right-of-Way line and showing the proposed underground conduit and equipment, and its spacing from existing utilities. The drawings shall also show a sectional profile of the Right-of-Way and identify all existing utilities and existing utility conflicts.

iv. If the Pole is owned by an entity other than the City, approval shall also be obtained from the owner of the Pole prior to permit issuance.

e. Maximum Pole Height. A network provider shall ensure that each new, modified, or replacement utility pole or node support pole installed in a public right-of-way in relation

to which the network provider received approval of a permit application does not exceed the lesser of:

i. 10 feet in height above the tallest existing utility pole located within 500 linear feet of the new pole in the same public right-of-way; or

ii. 55 feet above ground level.

f. State and Federal Rights-of-Way Permit. If the project lies within the right-of-way adjacent to a state or federal highway, the applicant must also provide evidence of a permit from the State or Federal Government.

g. Electrical Power Supply.

i. Applications for a Network Node Facility permit shall include all plans, specifications and other applicable information as is required for all facility installations in the Public Right-of-Way in accordance with CPCO Article 16.03 and the TCM.

ii. Network Provider shall not allow or install generators or back-up generators in the Right of-Way in accordance with Local Government Code Chapter 284, Section 284.002(12)(B)(1).

iii. All electrical equipment, hardware, devices, etc. necessary for the network node shall be approved by the entity providing the electrical service (i.e., PEC) prior to the City issuing a Permit.

h. Standard Specifications. Network Node Facility design, installation and materials shall comply with standards, criteria, rules and regulations as set forth in the City of Austin Standards Manual and the City of Austin Standard Specifications Manual per COCP Section 12.12.001, being the most current addition thereof, as amended from time to time, including later editions, except such portions as are hereinafter amended, deleted or modified by the City of Cedar Park

i. Water, Sewer and Storm Drainage Lines. Special precautions must be taken where underground fiber optic cable or electrical power service ("cables") is installed in Public Rights-of-Way commonly used for utility corridors.

i. Underground utilities and service connections must be identified prior to excavation. "Dig Alert," "One Call," or similar underground utility contractor must be contacted to identify the locations of subsurface utilities.

ii. If temporary disruption of service is required, the installation contractor must notify the City, the service provider, and customers at least 24 hours in advance. No service

on such lines may be disrupted until prior approval from the City and the service provider.

iii. At locations where the cables will cross other subsurface utilities or structures, the cable must be installed to provide a minimum of 12 inches of vertical clearance between it and the other subsurface utilities or structures, while still maintaining the other applicable minimum depth requirement. To maintain the minimum depth requirement, the cable must be installed under the existing utility. If the minimum 12-inch clearance cannot be obtained between the proposed cable and the existing utility, the proposed cable must be encased in steel pipe of avoid future damage.

iv. Existing Water Lines: No cables shall be placed on top of a water line but may be placed to the side of a water line at least 4 feet from the center line of the water line. When crossing a water line, a 12- inch vertical or horizontal clearance must be maintained. Poles must be at least 3 feet from a water line.

v. Existing Sewer Lines: No cables shall be placed on top of a sewer line but may be placed to the side of a sewer line at least 4 feet from the center line of the sewer line. When crossing a sewer line, a 12- inch vertical or horizontal clearance must be maintained. Poles must be at least 3 feet from a sewer line.

vi. Existing Storm Drainage Lines: No cables shall be placed on top of a storm drainage line but may be placed to the side of a storm drainage line at least 4 feet from the center line of the storm drainage line. When crossing a storm drainage line, a 12-inch vertical or horizontal clearance must be maintained. Poles must be at least 3 feet from a storm drainage line.

j. Inspections.

The Director, or designee, may perform visual inspections of any Network Node Facility or related ground equipment located in the Right-of- Way for compliance with this Design Manual, the City's rights-of-way management ordinance, and other applicable ordinances, except to the extent not consistent with Chapter 284.