

Network Facilities 5G Council Workshop

WEST UNIVERSITY PLACE

JANUARY 11, 2021

Small Cell Nodes

CenterPoint – Colocation



Small Node Streamline Pole

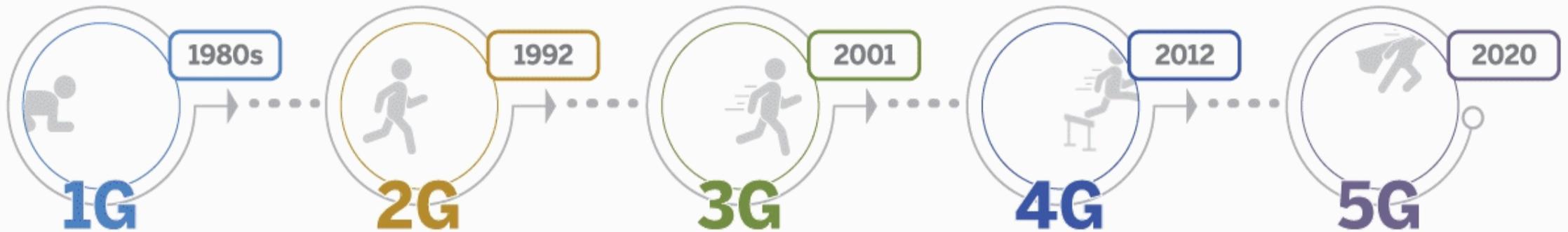


Summary of Topics

1. Brief History – Small Cell Nodes and West University Place.
 - A. Small Nodes are for 5G Wireless
 - B. Texas SB-1004F & Recent Federal Rulings
 - C. CenterPoint Policy's and Colocation
 - D. Existing Small Node Locations – City of West University Place
2. Existing requirements for Small Nodes.
3. Proposed Changes to Design Manual.
4. Input on Decorative Street - Light Small Nodes.
5. Questions/Discussion?

Small Cell Nodes

From 1G to 5G - A Brief History of Evolution of Mobile Standards





1. Brief History

1. Small Cell Nodes = 5G = Increased Internet Speeds

2. State of Texas passed S.B. No. 1004 – effective 9-1-2017:
 - A. Requires cities to allow use of right-of-way for 5G providers
 - B. Limits the amount of fees charged for each small cell node
 - C. General Limitations
 - a. Application review time limitations (referred to “shot clock”)
 - b. Maximum height of poles
 - c. Maximum size of utility pedestals/cabinets
 - d. Allows special standards in Design/Historic Districts
 1. The City of West University Place is defined as a Design District.

1. Brief History Continued

B. Federal Rulings 2019 – Overruled certain SB No. 1004 regulations

- a. Application review times reduced
- b. Limited maximum fees charged for node co-locates
- c. Requires “reasonable” spacing requirements
- d. Same burden as those applied to other types of infrastructure developments (i.e. electric, telecom, cable, etc.)

* Lawsuits are continuing through the courts, and clarifications will occur during each cases resolution.

1B. CenterPoint's Policy & Small Node Colocations



1. Small nodes can not be on a power pole with a transformer or riser(see photograph).
2. All colocations can not have utility equipment (besides for antenna's) on pole and must install a utility pedestal on ground.
3. Installation of small node antenna's can be 10 feet above power lines (typically requires a replacement of the power pole).
4. All small nodes are required to have an individual power meter.

West U - Permitted 5G Poles and Small Cell Node Locations

revised 11-11-2020

- Proposed on CPE Poles
- Proposed (new poles)

Fiber
(MCIMetro)

- ⊗ Mounted on existing poles
- New poles (installed)



Current Adopted Regulations & Design Manual

Colocation on existing poles (Mostly CenterPoint Energy Poles):

1. Equipment not on pole must be in a cabinet or underground.
2. Equipment on pole a minimum of 8 feet tall or 16 feet tall if over a roadway.
3. Color of equipment to match existing pole color or color designated in Design Manual.
4. 10' ft. in height above tallest utility pole located within 500' ft. of the new pole or max. 55' ft. above ground level
5. Not permitted on traffic lights or street signs.
6. One network node per pole (single provider)
7. Required approved permit application and notification.

Current Adopted Regulations & Design Manual

New Poles within the City:

1. Concealed equipment and no external wires.
2. Poles must be breakaway & powder-coated black.
3. Near Parks – No ground equipment; all equipment must be enclosed within the pole.
4. Residential Properties – no ground equipment, poles within the front property building line. (may be located between property lines based on justification)
5. Required distances from water, storm, and sewer lines.
6. Public Works Director able to grant exceptions to the prohibited locations.
7. One network node per pole.
8. Required approved permit application and notification.

Proposed Modifications – Design Manual & Policy Changes

- 1. Strengthen the requirement to collocate on existing CenterPoint poles or other utility poles.**

Goal: To utilize existing CenterPoint poles.

- 2. Require Photo-Sims for every small cell node (Shows before and after installation).**

- 3. Consideration of allowing a streetlight replacement option for stealth small cell nodes.**

a. City of West University Place can stipulate the design of these nodes – Decorative to match type of lighting currently installed in West University Place (lighting at same height as normal, but higher pole).

b. Decorative light poles may not be able to be breakaway.

- 4. Reviews of new small node locations by 5G expert.**

- 5. Paint meter pedestals and match required pedestal color indicated in Design Manual.**

4. Street Light Replacement – Small Nodes

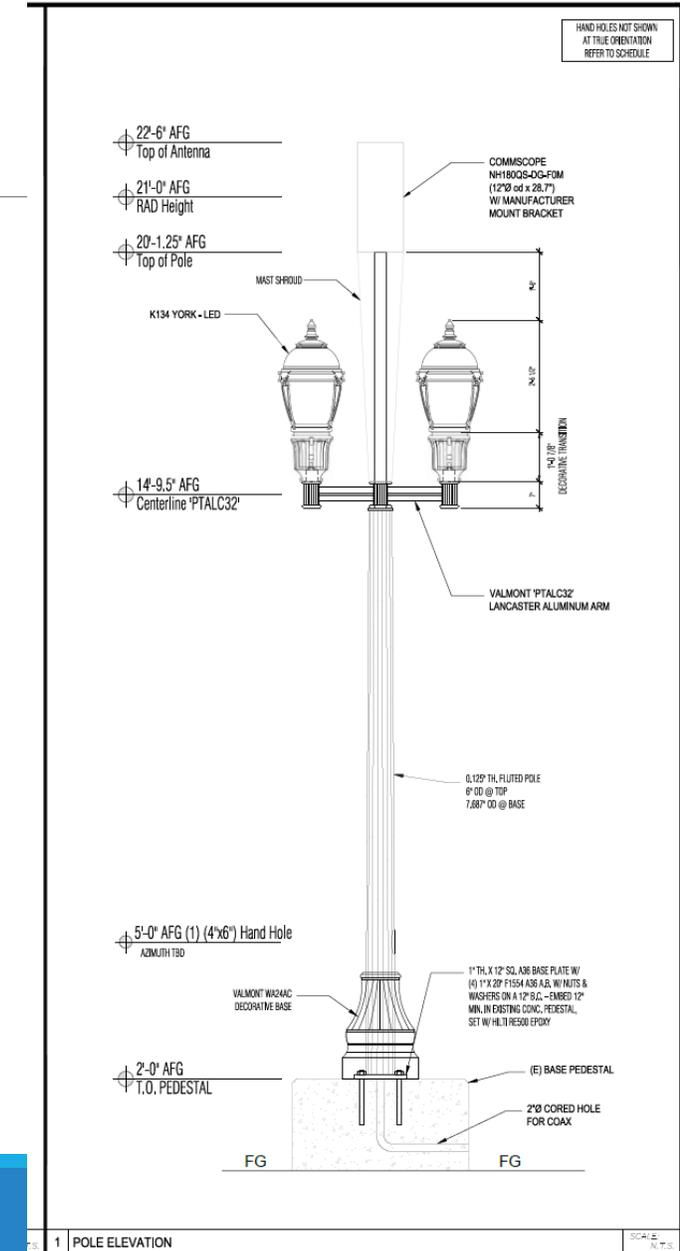
West University Place could adopt streetlight replacement for small nodes:

Pros

1. Can replace existing streetlights or add some when needed.
2. Can be less objectionable in residential neighborhoods.
3. Lessens City's cost for streetlights & can have agreement with Public Works for light replacement.

Cons

1. Ultimately is not completely stealth.
2. Has increased height for antennae.



5. Expert for 5G – Small Cell Node Discussion

Driss Benhaddou, PhD



Dr. Benhaddou's areas of expertise include optical networking, sensor networks, switching system design, routing protocols, performance analysis, and optical instrument development for defect recognition of semiconductors. He is an expert in the area of multi-protocol internetworking (SONET, ATM, IP, optical) and also has a solid background in software development with applications in routing/signaling protocols and network simulation.

Ph.D Interdisciplinary in Electrical Engineering and Telecommunications Networking

Ph.D Opto-Electronic Engineering

5. Questions/Discussion?

Thank You