Wireless Communications Briefing

Community Technology & Telecommunications Commission

September 14, 2016

Purpose of Briefing

- Importance of increasing connectivity in downtown and discuss a phased strategy for improving connectivity in other areas
- Process used to develop a strategy and policy for installation of wireless systems in the City right of way (ROW)
- Next steps for implementation

Background

- Increased demand for enhanced mobile wireless services
- Multiple companies requesting use of public ROW and City infrastructure to install outdoor wireless antenna systems are fairly new technologies
- Wireline telecommunications providers (telephone and cable/video) are accommodated in the ROW under state law
- No current City policies that facilitate access to the ROW & City infrastructure for wireless antenna systems

Background (cont.)

- Wireless system installations in the public ROW can include attachments to:

  - electric utility poles
  - street lights
  - traffic signal and other traffic management poles
  - installation of new stand-alone poles
  - connecting fiber optic cable or microwave transmission for backhaul

- Equipment such as radio transceivers, low-powered antennas, amplifiers, power and back-up power supplies, and control boxes mounted either on the poles or placed on the ground.

Wireline Installation

Wireless System Installations

Source: RCR Wireless News

Source: Crown Castle Small Cell – Los Angeles

Interdepartmental Approach

- In January, the City Manager tasked a group of departments to consider options that would:
  - Establish a city-wide approach to wireless equipment placement in ROW
  - Build a strategy, policies, and processes that position Austin for the SMART City and Internet-of-Things future
  - Ensure reliable, ubiquitous, city-wide Wi-Fi and wireless coverage
  - Bridge the digital divide by expanding free public Wi-Fi
  - Generate revenue for the City

Companies

AT&T

Crown Castle

ExteNet Systems

Google Fiber

IBM & Corning

Mobilitie

Sprint & Cisco

Verizon

Zayo Group

Process (cont.)

The group obtained additional input from City Departments about:

- Pole attachment considerations
- Public safety considerations
- Design standards and Great Streets design requirements for Downtown
- Procedures related to licensing, permitting and franchising
- Other city initiatives including Smart City efforts and public Wi-Fi

City Benchmarks

Research on 9 cities including Dallas, Houston, and San Antonio found that:

- All use various forms of a Master License Agreement
- ROW and infrastructure license terms range from 5 to 25 years
- Application fees range from $200 to $750 per site
- ROW rental and facility usage fees range from $1,200 to $4,000 per site with one provider paying 5% of its annual gross revenues

Staff Findings

Downtown Service Area - Majority of companies identified as area with a great need for expanded wireless service

Available Infrastructure - Only viable vertical City infrastructure is Traffic Signal Poles

- No above ground electric distribution poles downtown
- Great Streets Street light poles were not designed for installations
- New stand-alone poles are incompatible with the Great Streets design

Staff Findings (cont.)

Addressing the digital divide - Group explored options to help reduce the digital divide by providing Wi-Fi coverage in underserved areas of Austin

Coordinating with other City initiatives - Group considered other City initiatives and programs including Great Streets program and SMART City applications and Internet of Things

Zilker Park and Auditorium Shores - Several providers expressed interest in expanding wireless services in City parks that host major events. State law limits the use of park land. Therefore, current practice allows a temporary mobile use during major festivals but no long term use

Great Streets Streetlight Pole

Wireless Cell on Wheels (COW)

Source: Austin American Statesman

Public Interest Considerations

- Preserve public safety and welfare, including traffic, pedestrian, and accessibility requirements
- Minimize disruption from construction and installation work in City ROW
- Continue implementation of the City's Great Streets initiative to reduce physical and visual clutter on City streets and sidewalks
- Provide access and safety for systems repairs and maintenance; and
- Include flexibility to anticipate changing technology for continued innovation

Phased Implementation Strategy

Use a ***phased approach*** to address increased wireless coverage and capacity:

- **Phase I** - Downtown Implementation (Pilot)
- **Phase II** - Further Considerations outside of Downtown Area

Phase I Pilot – Downtown Implementation

- In a single geographical area – the Downtown Austin Great Streets Master Plan boundary (MLK to Cesar Chavez, I-35 to Lamar Blvd.)

Phase I (cont.)

- On a single type of City infrastructure, traffic signal poles
- Using Small Cell technology
- Limiting the installations to two traffic signal poles per approved intersection to minimize visual clutter and maintain future infrastructure availability for City and other projects
- Short initial term (3-5 years) with possible extensions

Phase I (cont.)

- Staff has retained a consultant to provide:
  - Expert knowledge on the design of wireless equipment, streetscape and infrastructure design
  - Recommendations regarding:
    - business terms to license use of poles and ROW
    - design standards to minimize impact to ROW
    - usage fees

Next Steps - Phase I

- Consultant report due to staff September 26

- Staff to propose Code amendments determined necessary for implementation (Chapters 14-11 and 15-7) and fees for consideration on or before October 20, 2016, council meeting

- Staff to develop and adopt administrative rules that will allow for public comments to include:
  - form license agreements
  - design standards and guidelines
  - permit requirements

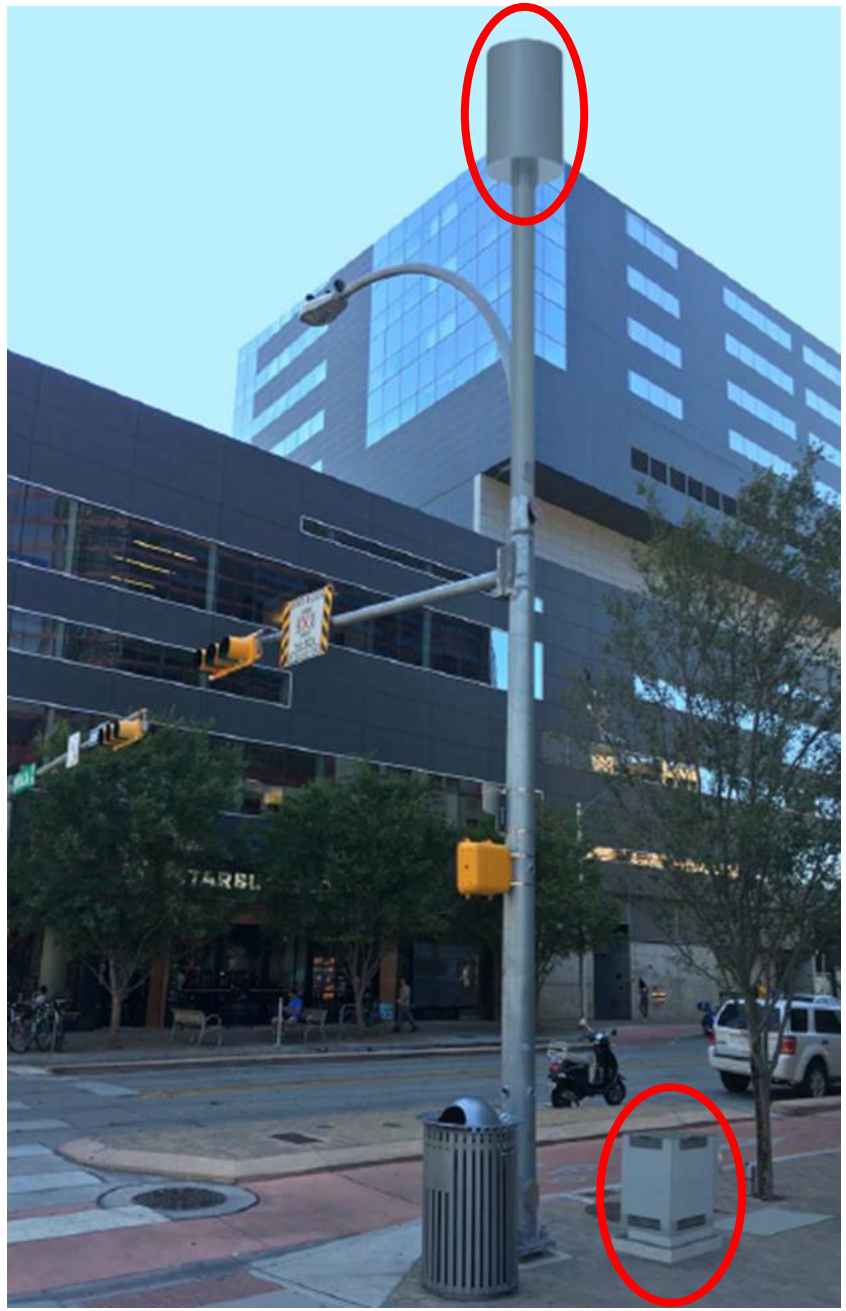
- Early November – Response and adoption of administrative rules
- End of November – Transportation Director to accept applications

COMPANY-PROVIDED PHOTO SIMULATIONS

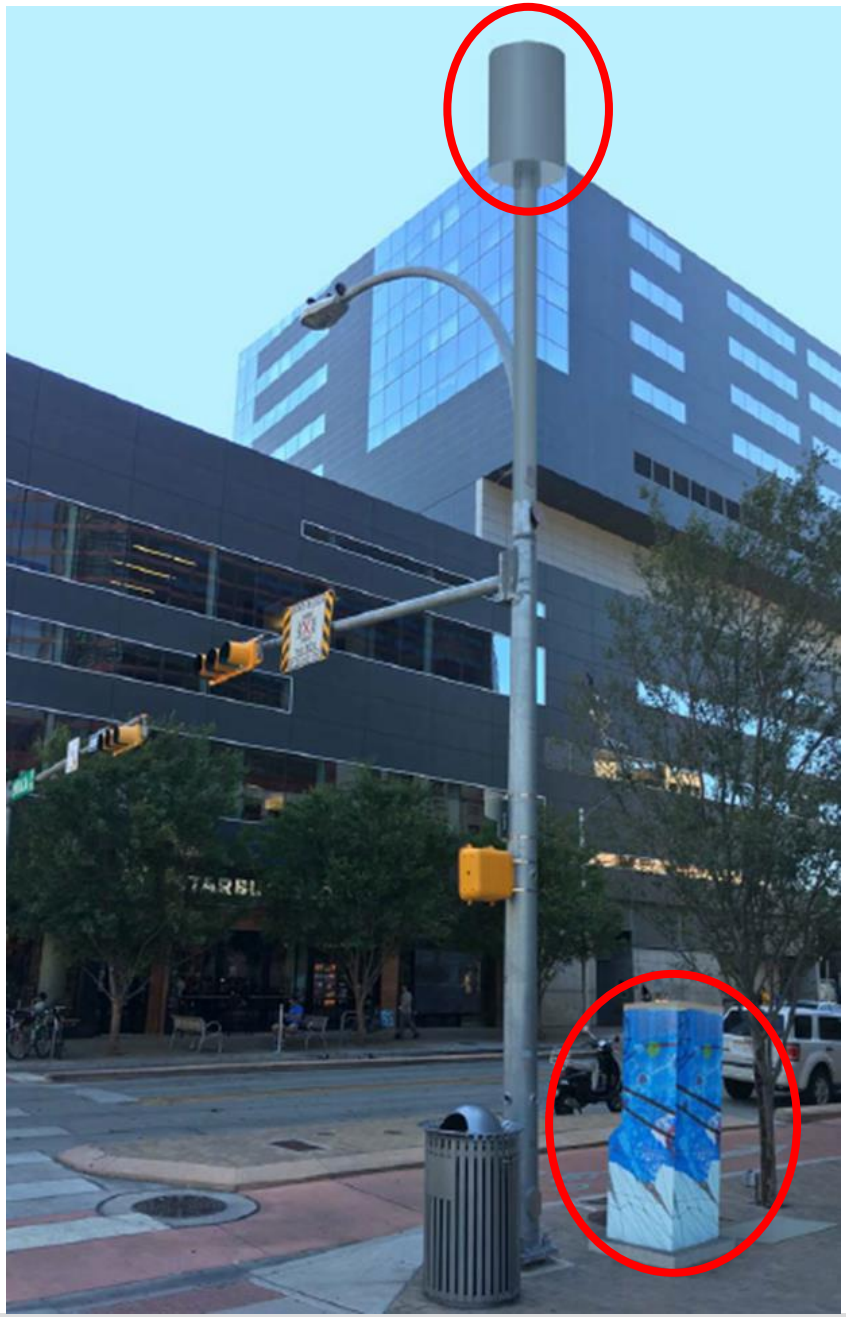
Antenna Shroud & Mounted Equipment Enclosure

Antenna Shroud & Mounted Equipment Enclosure

Antenna Shroud & Ground Equipment Enclosure



Antenna Shroud & Decorative Ground Equipment Enclosure



Antenna Shroud & Mounted Equipment Enclosure

Antenna Shroud & Mounted Equipment Enclosure

Integrated Antenna
& Un-shrouded Radio Module

Integrated Antenna
& Shrouded Radio Module

Next Steps - Phase II

- Begin planning in 2017
- Consider licensing use of poles and ROW for wireless communications equipment in the Imagine Austin Centers and Corridors and in other areas of need
- Evaluate availability and demand for public Wi-Fi in underserved areas of the City and consider expansion of public Wi-Fi in those areas
- Community engagement for areas outside of the downtown area

City’s Wireless Mesh Network System