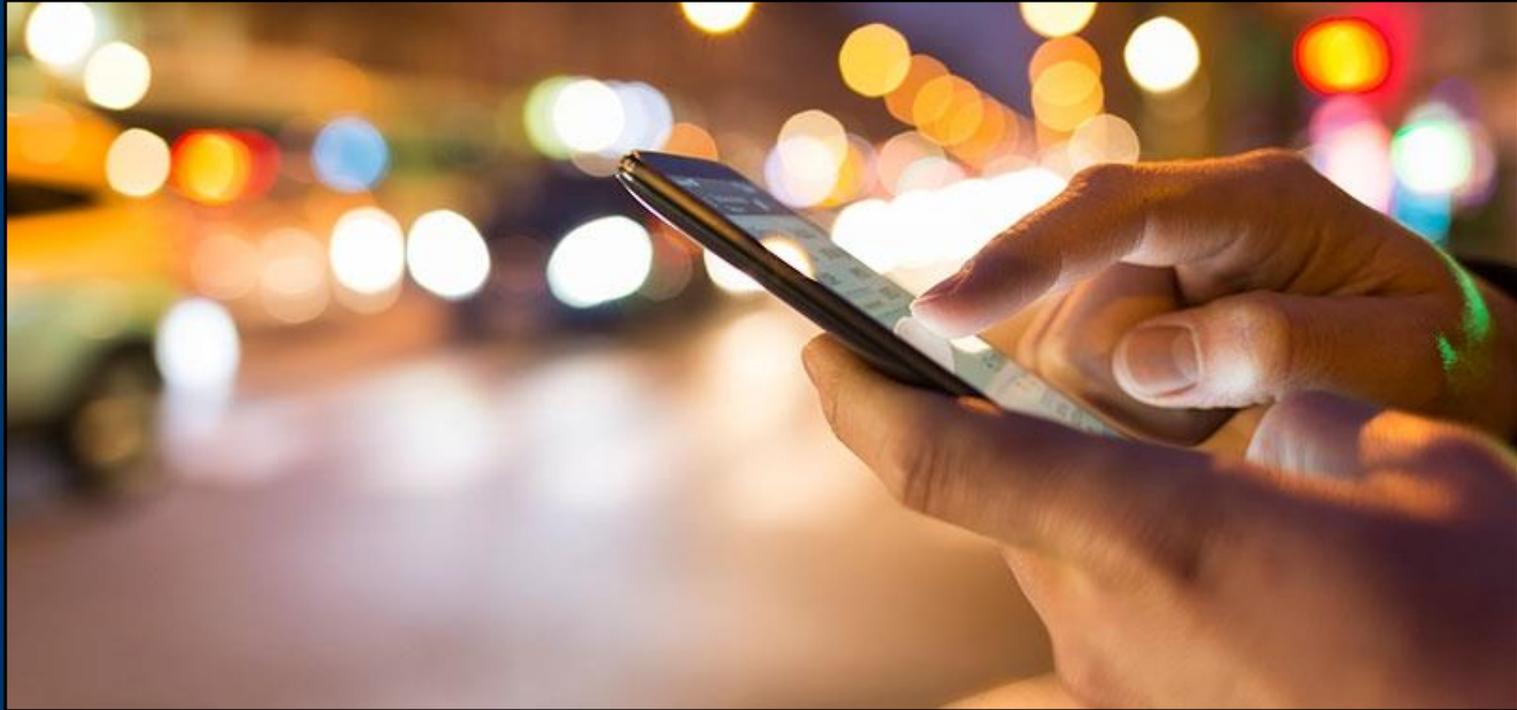


Wireless Telecomm Initiative



Planning Commission – Status Report

WTI Master Plan and Ordinance

Phil Mason - Susan Rabold

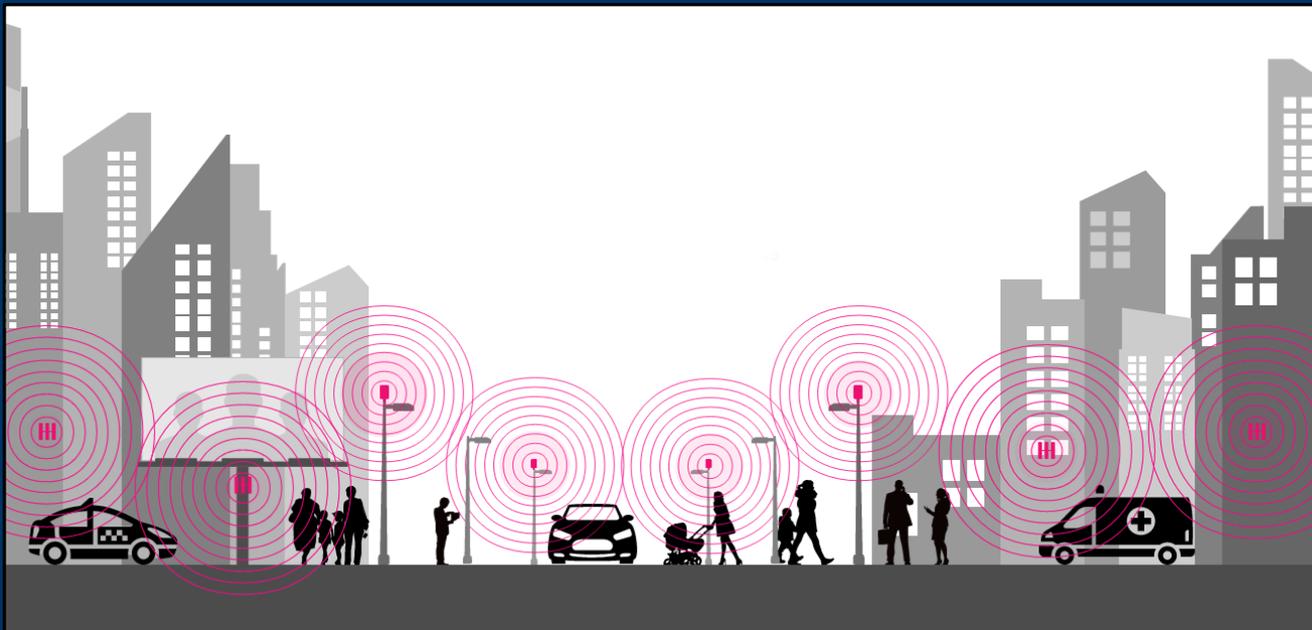
November 21, 2017



TOWN OF CHAPEL HILL

Purpose

- To position the Town for the deployment of essential new wireless infrastructure; and
- Minimize impacts on neighborhoods and the community.



Town and Consultant Collaboration

WTI Team: Scott Clark, Ben Hitchings, Ralph Karpinos, Phil Mason, Michael Sudol, Barry McLamb, Chris Roberts, Ernie Rogers.

CityScape Consultant Team: Susan Rabold, Anthony Lepore, Rick Edwards, Elizabeth Herington-Smith, Kay Miles, and Jon Edwards.



WTI Project

- Master Plan
- Ordinance
- Application Review
- Lease Negotiation



Process / Status

Preliminary
Scoping &
Field
Assessments

Council Work
Session

Public
Information
Mtg / Poll

Assessment
of Poll
Results / Gap
Analysis



Process / Status

Planning
Commission –
Status Report

Drafting
Master Plan
and Ordinance

Advisory
Board
Meetings

Council Public
Hearing &
Business
Meetings



Expansion / Community Benefits

Enhanced Coverage and Capacity

Towers

Good for voice. Data signal can degrade over distance.



VOICE:



DATA:



Small cells

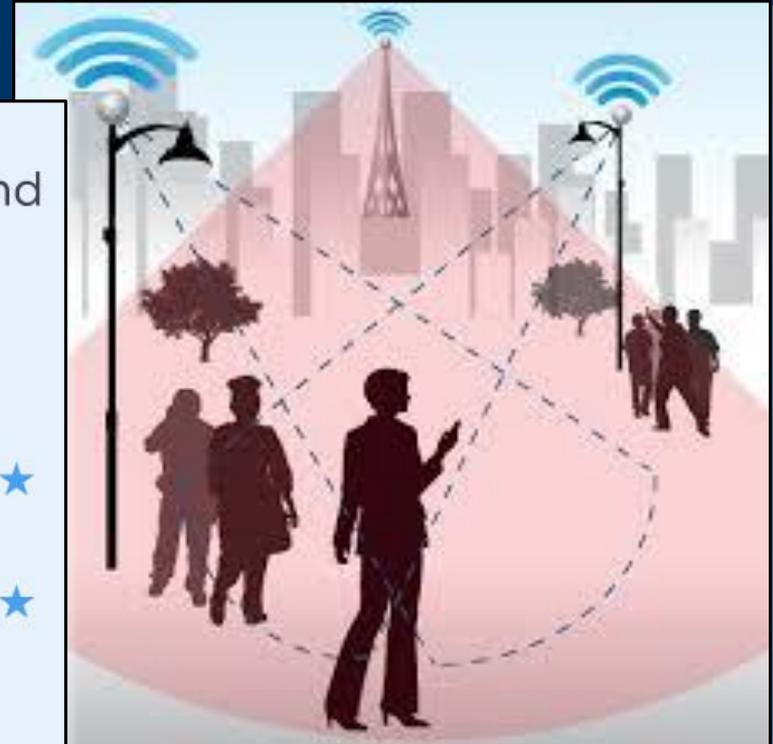
Good for voice and data.



VOICE:



DATA:



New Wireless Legislation

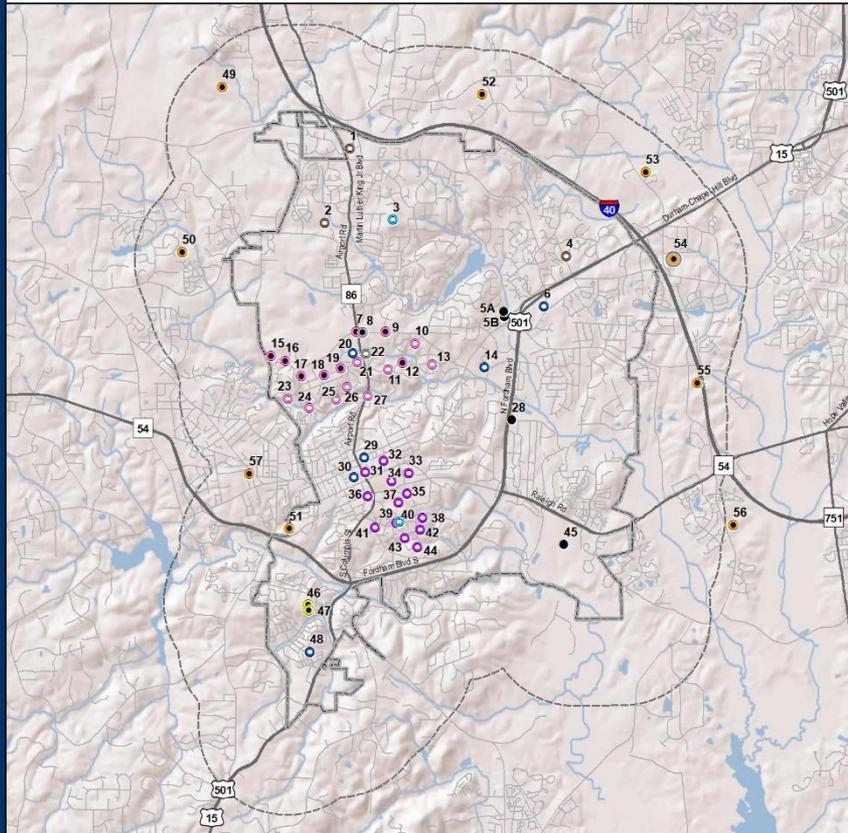
House Bill 310 – Key Provisions

- Limits Regulation by Local Government
- Wireless Poles Allowed in Public Rights of Way
- Maximum Pole Height Allowed
- Reduced Application Fees



Wireless Telecommunications Inventory

Chapel Hill Tower Inventory



- 58 Total Facilities
 - 49 within Town limits
 - 9 outside Town limits
- More base stations than towers
- Blend of macro and small cell sites

Towers

- Outside Right-Of-Way
- Small Cell Inside Right-Of-Way
- Concealed
- Dual Purpose
- Outside Study Area

Base Stations

- Rooftop
- Water Tower
- Utility Easement
- Small Cell Inside Right-Of-Way
- Small Cell Rooftop
- Concealed



Study Area



Corporate Limits



One Mile Buffer



Major Roads



Minor Roads

Sources: US Census Bureau, CityScape Consultants, Inc, USGS

Map Created by CityScape Consultants, Inc. on November 7, 2017

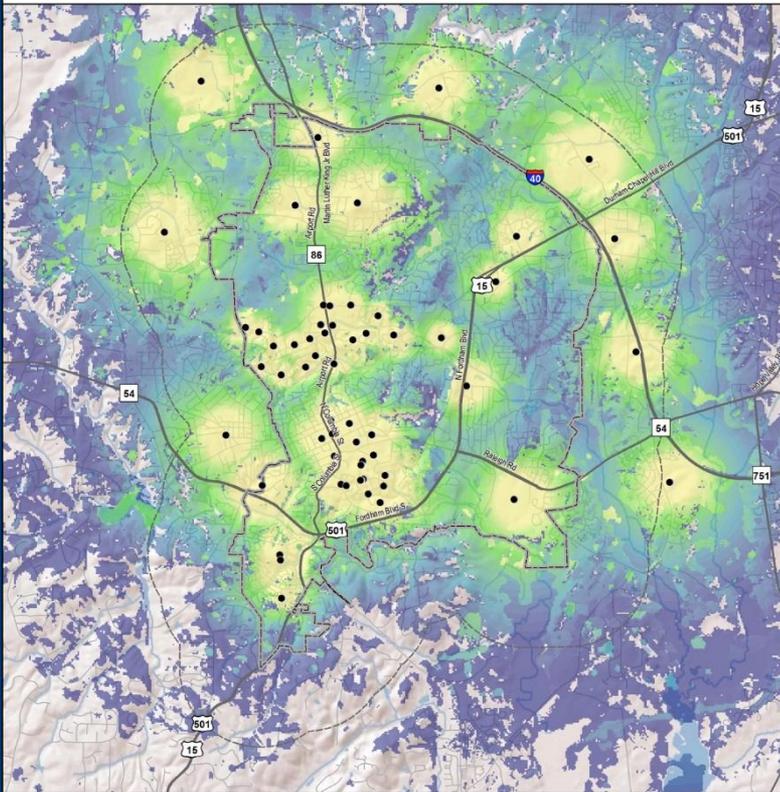
0 0.25 0.5 1 Miles



TOWN OF CHAPEL HILL

Gap Analysis

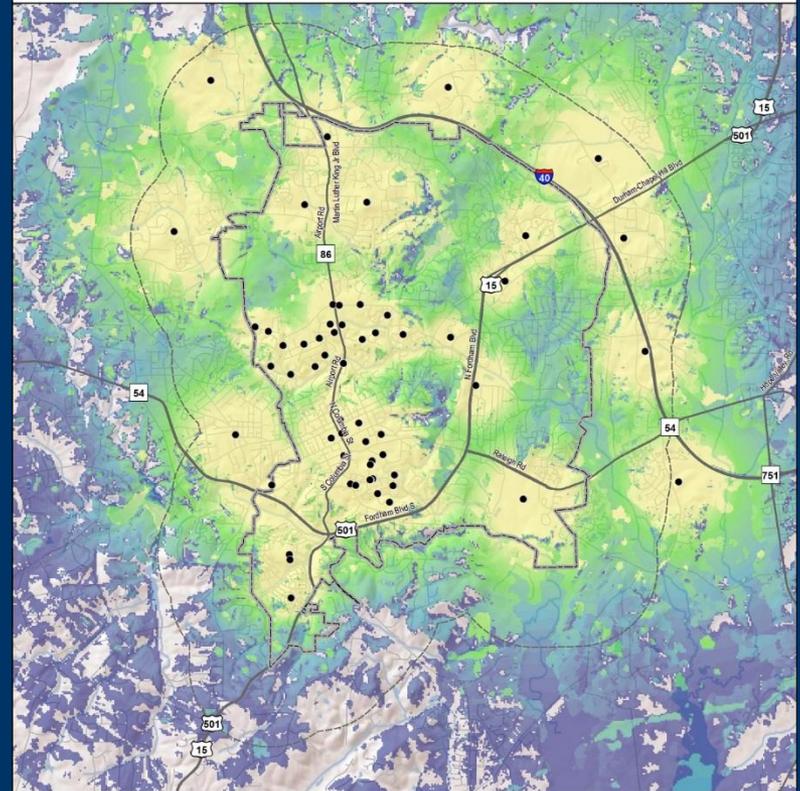
Theoretical High Frequency Coverage From All Potential Identified Sites Considering Topography, Vegetative Cover and Population Density



- Existing Sites
 - Tower or Base Station
- Approximate Coverage
 - Indoor
 - In Vehicle
 - Outdoor
- Study Area Corporate Limits
- One Mile Buffer
- Major Roads
- Minor Roads

Sources: US Census Bureau, Chapel Hill GIS, CityScape Consultants, Inc, USGS
 Map Created by Cityscape Consultants, Inc. on November 8, 2017
 0 0.25 0.5 1 Miles

Theoretical Low Frequency Coverage From All Potential Identified Sites Considering Topography, Vegetative Cover and Population Density



- Existing Sites
 - Tower or Base Station
- Approximate Coverage
 - Indoor
 - In Vehicle
 - Outdoor
- Study Area Corporate Limits
- One Mile Buffer
- Major Roads
- Minor Roads

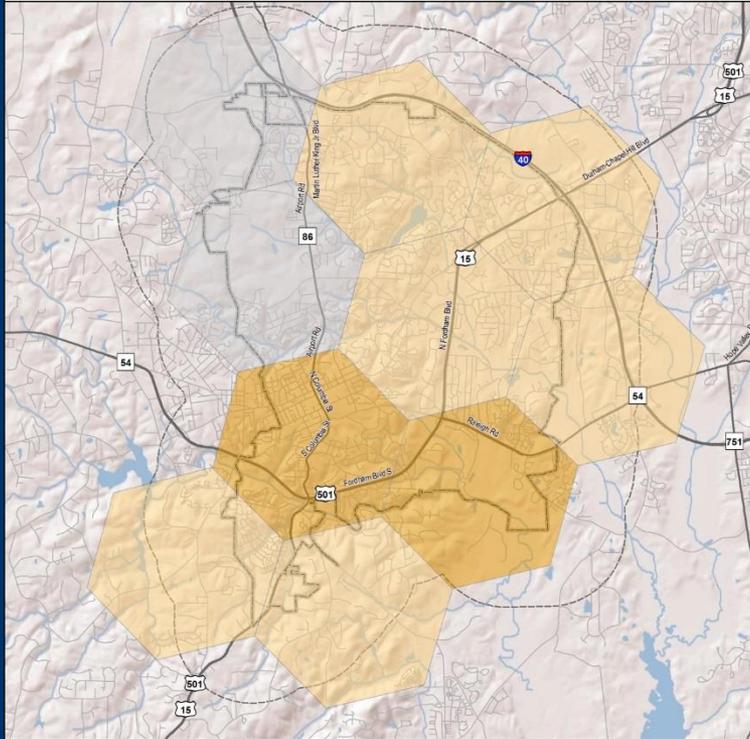
Sources: US Census Bureau, Chapel Hill GIS, CityScape Consultants, Inc, USGS
 Map Created by Cityscape Consultants, Inc. on November 8, 2017
 0 0.25 0.5 1 Miles



TOWN OF CHAPEL HILL

Gap Analysis

Approximate Additional Macro Sites Needed for All Providers to Accommodate Capacity at Peak using 4G, 10 Year Projection



Number of Macro Sites Needed

- No more than 1
- 1
- 2 to 3

⬡ = 2.5 miles across

Study Area Corporate Limits
 One Mile Buffer
 Major Roads
 Minor Roads

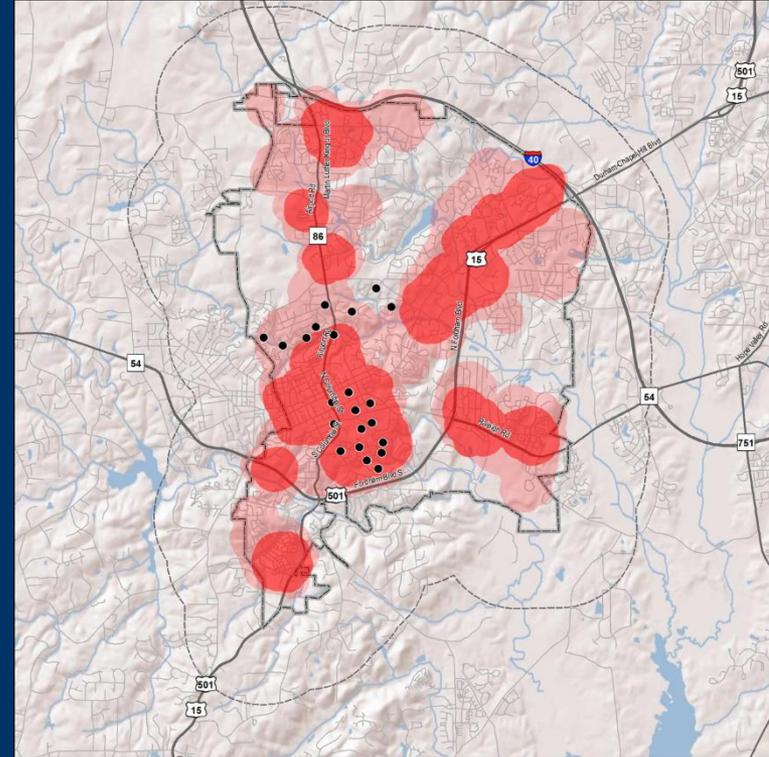
Sources: US Census Bureau, CityScape Consultants, Inc, USGS

Map Created by Cityscape Consultants, Inc, on November 15, 2017

0 0.25 0.5 1 Miles



Areas With Peak Population Density for Potential Small Cell Deployment



Current Node Deployment
 Moderate Peak Population Density Area
 High Peak Population Density Area

Study Area Corporate Limits
 One Mile Buffer
 Major Roads
 Minor Roads

Sources: US Census Bureau, CityScape Consultants, Inc, USGS

Map Created by Cityscape Consultants, Inc, on November 9, 2017

0 0.25 0.5 1 Miles



TOWN OF CHAPEL HILL

Macro Tower Site

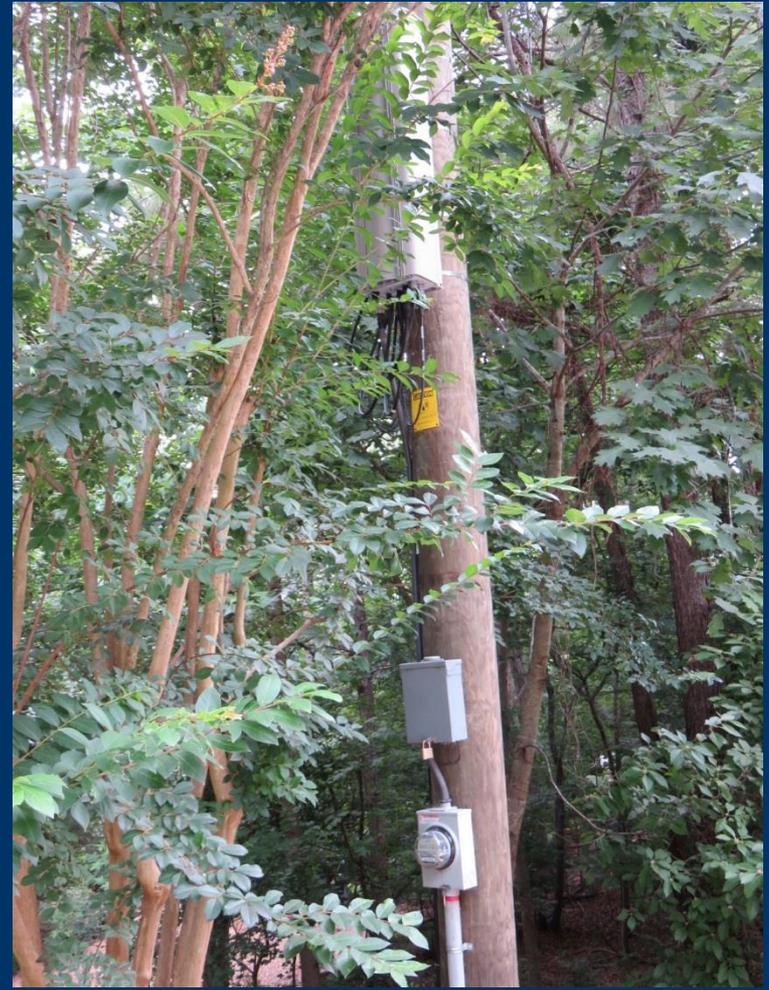


TOWN OF CHAPEL HILL

Small Cell Site



Outdoor Distributed Antenna System



TOWN OF CHAPEL HILL

Base Stations



Base Stations



Concealed Facilities



TOWN OF CHAPEL HILL

Poll Results

- 329 Participants, 95% residents of the Town
- 36% Network coverage poor where they live
- 12% Network coverage excellent around Town
- 38% Network coverage good around Town
- 71% Rely on mobile device to great extent
- 87% Indicate quality of service is important
- 19% Willing to compromise telecomm service for reduced visual impacts



Poll Results

Infrastructure Preference Groupings:

- 53% Prefer monopole for non-concealed tower
- Moderate preference for painted monopoles and light stanchions
- Significant preferences for concealed towers and base stations



Next Steps

- Begin Drafting WTI Master Plan and Ordinance
- Return to Planning Commission Mid-Winter
- Take to Council in the Spring



Wireless Telecomm Initiative



TOWN OF CHAPEL HILL