

Personal Wireless Facilities Presentation



CityScape Consultants, Inc.

Susan Rabold, Project Manager

July 1, 2019

CityScape Consultants, Inc.

CityScape CONSULTANTS, INC.



- Company started in Florida in 1997
- Offices in Florida, Georgia, North Carolina and Washington, DC
- Exclusively serve government clientele with unbiased information
- Company goals and objectives consistent with Federal Statutory, Decisional and Regulatory Law
- Assists local government with:
 - Wireless Telecommunications Master Planning
 - Site Application Engineering Review
 - Ordinance Review
 - Leasing and Development of Public Land

CityScape Consultants, Inc.

Management Team

- Richard Edwards, President,
Partner, Engineer
- Anthony Lepore, Esq., Vice
President, Partner
- Kay Miles, Vice President,
Partner
- Jonathan Edwards, P.E.,
Principal Engineer
- Susan Rabold, Project
Manager
- Elizabeth Herington-Smith,
Government
Relations/Marketing
Manager



Introduction to Wireless Telecommunications

Personal Wireless Service Facilities (PWSF)

Infrastructure initially built for cellular phones now upgraded and constructed for cellular phones, tablets and smart devices



Wireless Telecommunications History



1G



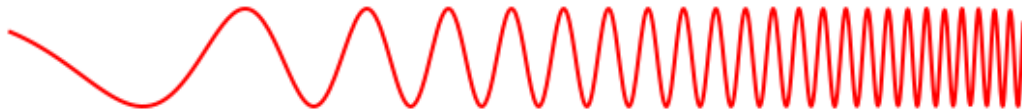
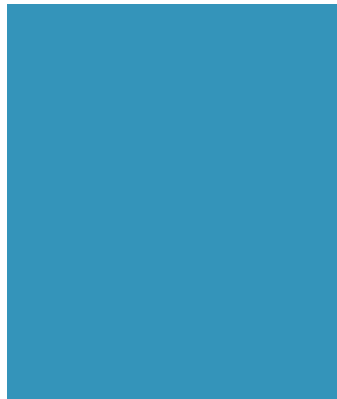
2G & 3G



4G

- 1G service provided voice calls only.
- 2G service included voice, texting and data.
- 3G service offered in early 2000's improved data speeds.
- iPhone in 2007 offers thousands of applications.
- 4G service on AWS and LTE began around 2010 and increased data speeds; included new 700 and 2100 MHz frequencies.
 - Even smaller handsets, increased battery power, offering more features including Internet access

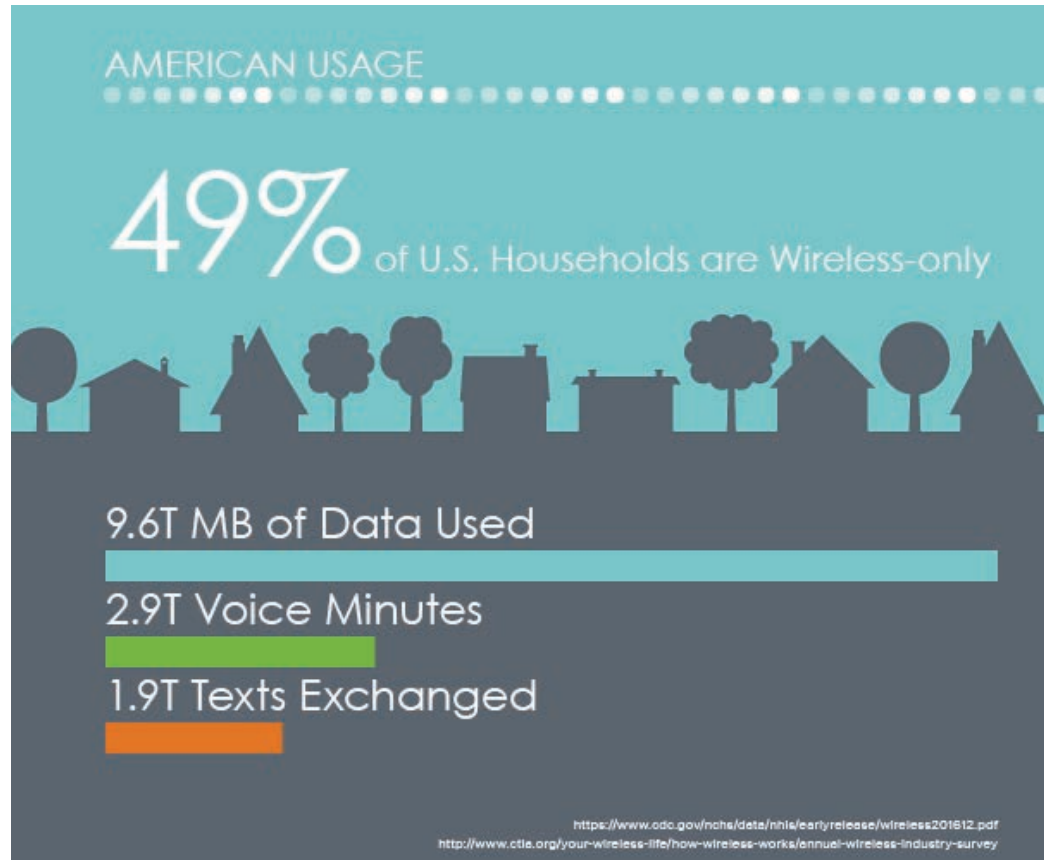
Site Location Considerations *Spectrum,* Coverage, Capacity



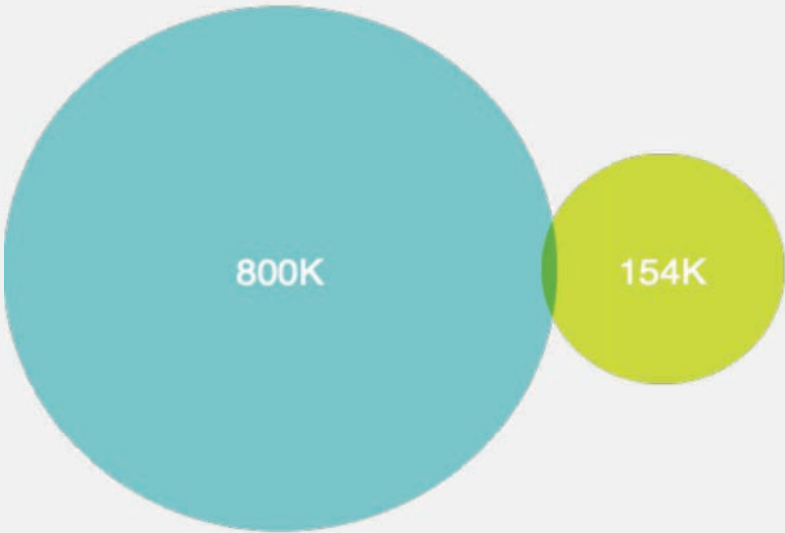
- Wireless service providers do not all use the same frequencies
- Lower frequencies (700-850 MHz) propagate farther than higher frequencies (1900-2400 MHz)
- Spacing of cell sites in rural areas is influenced greatly by the frequencies that a service provider can use in an area
- Capacity in suburban and urban areas influenced greatly by the number of simultaneous subscribers maximizing apps on devices
- More use of data intensive applications such as Facetime, Internet, Streaming Music and HD Movies, Social Media, etc.
 - Over 49% of U.S. households have “cut the cord” and are wireless only
 - 45 million Americans use mobile phones as their primary Internet access device
 - Smart houses, smart cars, smart industry

Quick Facts:

Source: CTIA Wireless
Quick Facts, 2016



Quick Facts:



80%
of future infrastructure
deployments will be small cells

- Towers Today
- Small Cells by 2026

Quick Facts:

330%

growth in health & fitness apps
over the last three years.

76%

of travelers say a
mobile phone is the most
important trip accessory.

85%

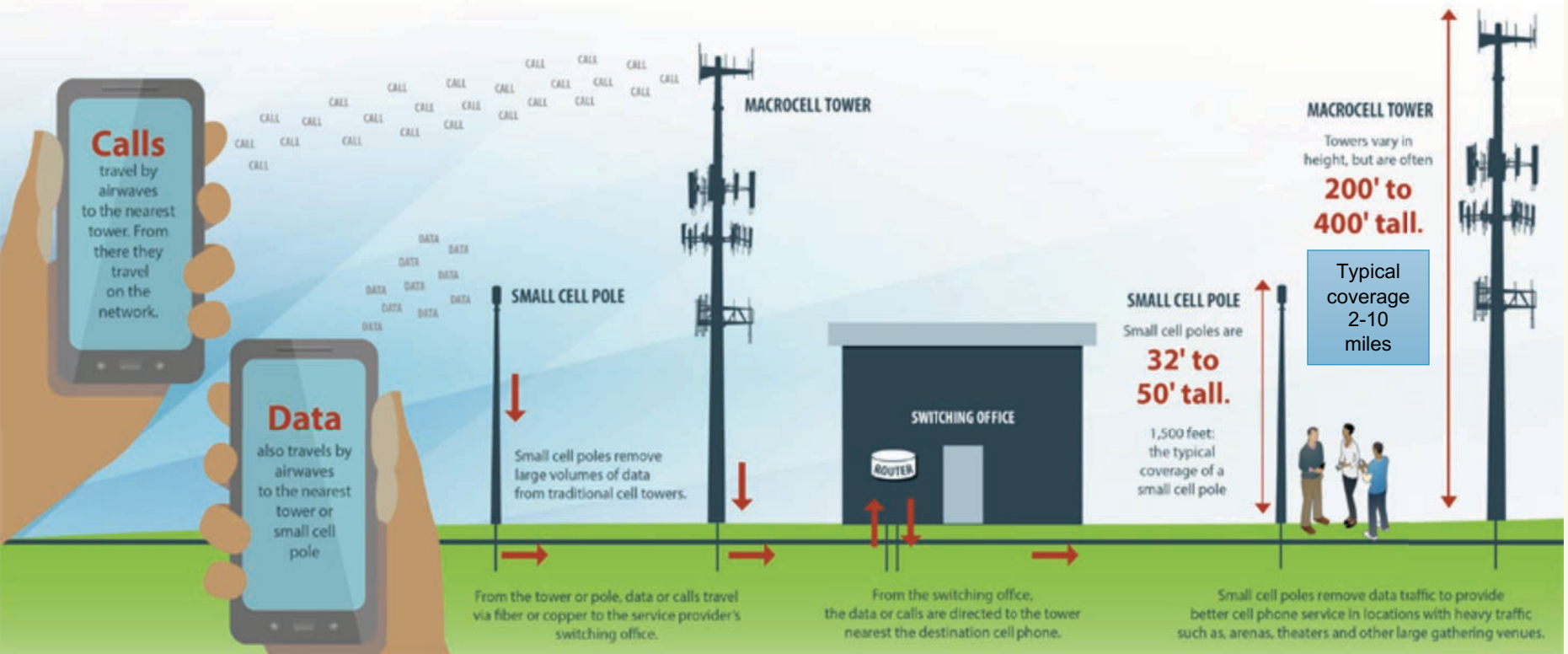
of photos taken in 2017 were
captured on a smartphone

31B

connected devices
predicted by 2023.

Facility Types

Macro Cell and Small Cell



Macro Cell Infrastructure



Microwave
commonly used
for backhaul



Panel Antennas
with RRU's



Omni-directional
whip type
antenna

Macro Cell Ground Equipment



Typical Low Frequency
(700-850 MHz) Ground
Equipment



Typical High Frequency
(1900-2400 MHz) Ground
Equipment

Non-Concealed Macro Cell Towers



Monopole
Self Support



Lattice
Self Support



Guy
With Support



Small Cell Wireless Facilities Non-Concealed

- Antenna mounted to the side of the pole with equipment at base of pole on the ground
- Antenna mounted on top of pole with equipment attached to pole



Small Cell Wireless Facilities Concealed

- Antenna no more than three cubic feet
- All other equipment no more than 28 cubic feet in volume





Small Cell Wireless Facilities Concealed

- Light poles can be painted different colors
- Various options for light fixture
- Banner options
- Planter options

Small Cell Wireless Facilities



Ground Equipment

Federal Statutory,
Decisional and
Regulatory Law

Wireless Telecommunications Regulatory Parameters

Federal Legislation Section 704

47 USC §332(c)(7)

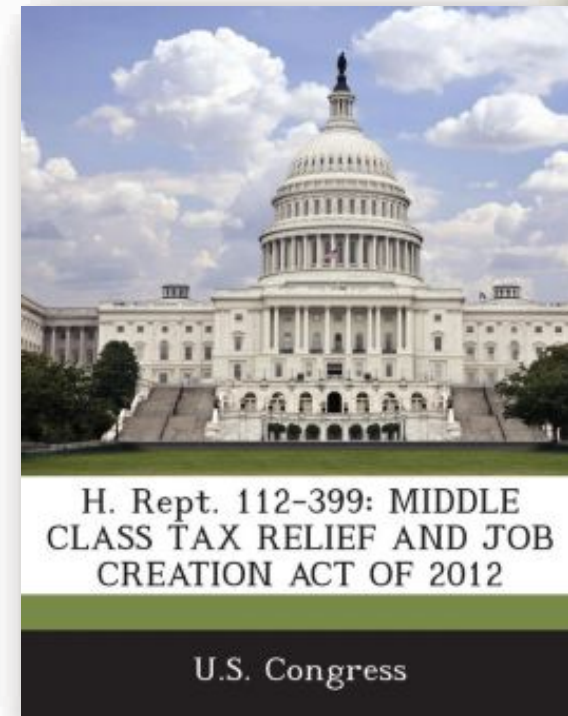
(a/k/a Section 704 of the Telecommunications Act of 1996)

Preservation of state and local zoning authority regarding placement, construction and modification of personal wireless service facilities, however the regulations shall not:

- Unreasonably discriminate among providers of functionally equivalent services
- Prohibit or have the effect of prohibiting the provision of personal wireless services
 - Shall act on requests within a reasonable time period
 - Provide denials in writing and supported in substantial evidence contained in a written record
 - Cannot regulate environmental effects of radio frequency (RF) emission beyond the Commission's regulations concerning such emissions
 - Can require a statement that facility complies with the Commission's regulations concerning such (RF) emissions

Middle Class Tax Relief and Job Creation Act of 2012, Section 6409A

- Notwithstanding Section 704 of the Telecommunications Act of 1996 or any other provision of law, a State or local government may not deny, and shall approve any **eligible facilities request** for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.
- Eligible facility request means any request for modification on an existing wireless tower or base station that involves:
 - Collocation, removal or replacement of new transmission equipment



Acceleration of Broadband Deployment by Improving Wireless Facility Siting Policies

(Report & Order #1 Released October 21, 2014 in W.T. Docket 13-238)

- “Demand for wireless capacity is booming; more consumers are accessing mobile broadband every year, driving more innovation and expanding access to public safety...we take concrete steps to facilitate the deployment of the infrastructure necessary to support surging demand, expand broadband access, support innovation and wireless opportunity, and enhance public safety – all to the benefit of consumers and the communities in which they live” (paragraph 2)
- “...Actions intended to encourage deployments on existing towers and structures” (paragraph 3)
- “...broadband access is essential to the Nation’s global competitiveness in the 21st century...also affording public safety agencies the opportunity for greater levels of effectiveness and interoperability” (paragraph 7)
- “As demand for wireless capacity surges, we must take steps to ensure that networks underlying wireless services can bear the load” (paragraph 8)

Collocations Permitted by Right Cannot Exceed Definition of Substantial Change

Collocation means:

- Mounting or installing equipment on an eligible support structure.

Eligible facility request means:

- Any request for modification of an existing tower or base station that does not substantially change the physical dimension of such tower or base station.

Eligible support structure means:

- Any tower or base station provided that is existing at the time the relevant application is filed.

**FCC's Report and
Order #1 Clarification
and Implementation of
Section 6409(a) of the
Spectrum Act**

Definition of Substantial Change

Must not exceed any of the 6 criteria

(1)

- Existing towers other in public rights-of-way increase in height by more than 10% of the height of one additional antenna array with separation from the nearest existing antenna not to exceed 20', whichever is greater
- Other eligible structures existing base stations (rooftops water tanks outside public rights-of-way and existing towers, utility poles, base stations inside public rights-of-way increase in height by more than 10% of the height of one additional antenna array with separation from the nearest existing antenna not to exceed 10', whichever is greater

Vertical Height Increase Example Outside the Right-Of-Way



96" to 105"
antenna heights
(average 8'3")



----- 20' increase to 100' new height
----- 80' original tower height

Section 6409(a)

10% of 80' is 8'

$80' + 8' = 88'$

$80' + 20' = 100'$

Tower could increase to maximum of 100'

For towers or utility structures in the rights-of-way height increase allowed is 10' or 10% whichever is greater

Base Station Height Modification Example



- 10' increase to 40' new height

- 30' original base station height

Section 6409(a)

10% of 30' is 3' = 33'

30' + 10' = 40' (this is the greater)

Base Station could increase to maximum of 40' and meet definition of substantial

- Area of Base Station is entire rooftop once approved.
- Cannot require additional concealment if original “eligible facility” is not concealed.

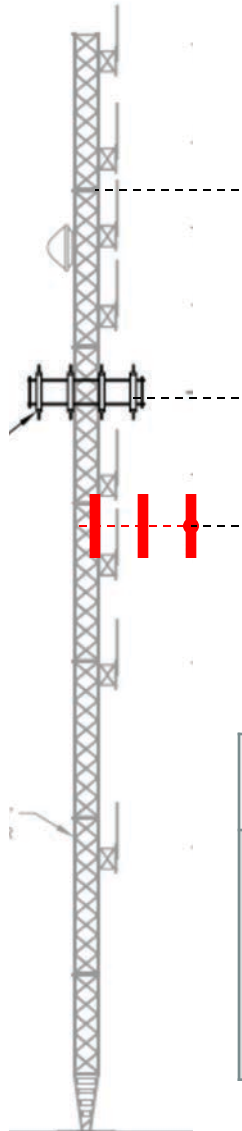
**FCC's Report and
Order #1 Clarification
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Spectrum Act**

(2)

A modification that substantially changes the physical dimensions of a tower or base station would fall outside Section 6409(a) if it meets any one of the following items:

- For towers outside the ROW, it protrudes from the edge of the tower by more than 20', or more than the width of the tower structure at the level of the appurtenance, whichever is greater
- For towers in the rights-of-way and for all base stations, it protrudes from the edge of the structure more than 6'

Tower Width Increase Outside ROW Example



Width of tower is 3'

Appurtenance is 10' from edge of tower

Appurtenance could extend up to 20'
from edge of tower

Section 6409(a)

- 20' from edge of tower or
- Width of tower at level of appurtenance
- Whichever is greater

**FCC's Report and
Order #1 Clarification
and Implementation of
Section 6409(a) of the
Spectrum Act**

(3) It involves installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets or ground cabinets are more than 10% larger in height or volume than any other ground cabinets associate with structure.

(4) It entails any excavation or deployment outside the current site of the tower or base station

(5) It would defeat the existing concealment elements of the tower or base station

(6) It does not comply with conditions associated with the prior approval of the tower or base station unless, the non-compliance is due to an increase in height, increase in width, addition of cabinets or new excavation that does not exceed the corresponding "substantial change" thresholds

**FCC's Report
and Order #1
Clarification and
Implementation
of Section
6409(a) of the
Spectrum Act**

Local government can require compliance with generally applicable building, structural, electrical and safety codes or with other laws codifying objective standards reasonably related to health and safety.

If existing wireless tower or base station was built without local review, or wasn't required to have local review, or doesn't have existing equipment that required local review, *no obligation for local authority to approve collocation under Section 6409 or the Order*

Provided tolling standards but those were redefined with Report and Order #3

FCC's Report and Order #3 Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment

“America is in the midst of a transition to the next generation...The FCC is committed to doing our part to help ensure the United States winds the global race to 5G to the benefit of all Americans.” (paragraph 1)

“To support advanced 4G or 5G offerings, providers must build out small cells at a faster pace and at a far greater density of deployment than before...” (paragraph 3)

“We confirm that our interpretations today extend to state and local governments' terms for access to public ROW that they own or control, including areas on, below, or above public roadways, highways, streets, sidewalks, or similar property...” (paragraph 92)

FCC's Report and Order #3 - 2018 Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment

Defines small wireless facilities as facilities that meet each of the following:

(1) The facilities are: (i) Mounted on structures 50' or less in height including their antenna; or (ii) Mounted on structures no more than 10 percent taller than other adjacent structures; or (iii) Do not extend existing structures on which they are located to a height of more than 50 feet or by more than 10 percent, whichever is greater.

(2) Each antenna is no more than 3 cubic feet in volume.

(3) All other wireless equipment associated with the deployment is no more than 28 cubic feet in volume.

(4) Facilities do not require antenna structure registration.

(5) Facilities are not located on Tribal lands

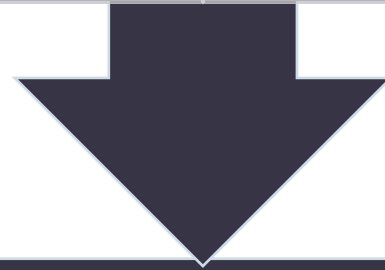
(6) Facilities do not result in human exposure to radiofrequency radiation in excess of the applicable safety standards specified in section 1.1307(b)

**FCC's Report
and Order #3
Accelerating
Wireless
Broadband
Deployment
by Removing
Barriers to
Infrastructure
Investment**

Redefines Collocation to mean,

(1) Mounting or installing
an antenna on a pre-
existing structure
and/or;

(2) Modifying a structure
for the purpose of
mounting or installing an
antenna facility on
that structure.



Structure means, a pole, tower, base station or other building, whether or not it has an existing antenna facility, that is used or to be used for the provision of personal wireless service (whether on its own or comingled with other types of services).

FCC's Report and Order #3 Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment

Other items:

- Not allowing use of the ROW, minimum spacing requirements between facilities, requiring all new small wireless facilities to be concealed or requiring all lines to be underground may be considered a barrier to entry.
- “We conclude that aesthetics requirements are not preempted if they are (1) reasonable, (2) no more burdensome than those applied to other types of infrastructure deployments, and (3) objective and published in advance.” (paragraph 86)
- Fees are considered reasonable for small cell facilities if they are around:
 - \$500 for a single up-front application including up to 5 small wireless facilities with an additional \$100 for each small cell facility beyond five, or \$1,000 for non-recurring fees for a new pole (not a collocation) intended to support one or more small cell facilities and
 - \$270 per facility per year for all recurring fees, including any possible ROW access fee or fee for attachment to municipally-owned structures in the ROW.

FCC's Report and Order #3 Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment

Unless a written agreement between Applicant and siting authority

10-days to review initial application for completeness; if incomplete must specify missing documents or information needed for completion



Application review timelines:

60 days to collocate a small wireless facility using an existing structure

90 days to collocate non-small wireless facilities using an existing structure

90 days to deploy a small wireless facility using a new structure

150 days to deploy a non-small wireless facility using a new structure

CityScape's Review Small Wireless Facility Application

ExteNet Systems
Proposed 18 Nodes
Verizon

Summary of Application(s)

May 30, 2017 – Application to install wireless antenna and radio on replacement wood utility pole and install fiber connection to other nodes in the area to complete the Distributed Antenna System in the public rights-of-way.

- Application is deficient and incomplete

December 20th, 2018 – Refilled application to install Distributed Antenna System in Village rights-of-way, project consists of 18 nodes.

- Application for Special Use Permit under consideration

February 6, 2019 Letter from ExteNet indicates 18 nodes

- 3 involve replacement of new poles
- 15 involve attachment of small cell equipment to PSE&G Long Island poles

April 5, 2019 Proposed Distributed Antenna Node Locations and Pole Types Village of Flower Hill from ExteNet Systems

- 2 existing wood utility poles
- 5 replacement wood poles
- 8 new decorative metal street lights
- 2 existing wood utility poles or new decorative metal street lights
- 1 new decorative metal street light or flag pole

May 6, 2019 Public meeting presentation

- 9 proposed relocations of proposed new nodes

Site plans provided do not match current proposed request changes through May 6, 2019

Summary of Application(s)

To date the applicant has not provided the following materials:

- Demonstration or provide reasons why the highest locational priorities specified in Section 209-77A.(1-6) are not possible.
- A description of the anticipated maintenance needs, including frequency of service, personnel needs and equipment needs, and the potential traffic safety and noise impact of such maintenance. (Sec. 209-76(D)(1)(e).)
- Materials to help address aesthetic and neighborhood impact mitigation (Sec. 209-79.)

Applicant has:

- Provided photographic examples of decorative metal street lights both concealed and non-concealed as possible options for the proposed new metal street lights.
 - No design measurements are provided on the street lights shown in the photographs.
 - No product summary is provided indicating the number of tenants that can use the infrastructure.
- Offered to meet with the Village community to plan/strategize possible decorative metal street light options for the proposed nodes.
- Provided RF exposure study stating the emission levels will not exceed 100% of the uncontrolled (public) limit at areas more than 5 feet from the antenna (measured 2' above and below the antenna for a distance of 5-foot horizontally outward 360 degrees around the antenna).

Considerations for the Village

Once nodes are approved, constructed and finalized they become existing eligible facilities.

The Village Code includes Chapter 7 titled, "Architectural Review Committee" which is a published document that includes purposes and objectives for protecting the unique character of the Village.

The Village Code includes Article VIII titled, "Small-cell Wireless Facilities" which includes published purposes, goals and design objectives intended to address the aesthetics of small cell wireless facilities within the Village.

Four of the proposed nodes (32, 34, 36 and 38) are in the Stonytown Road right-of-way where existing utility poles are located inside the right-of-way.

The remaining nodes are proposed in local residential street rights-of-way where no utility power lines or existing public street lights are located now.

- An occasional power line crosses the street and the utility line follows a side yard inside a utility easement.
- Otherwise, the power lines and utility poles are in the rear yards inside utility easements.