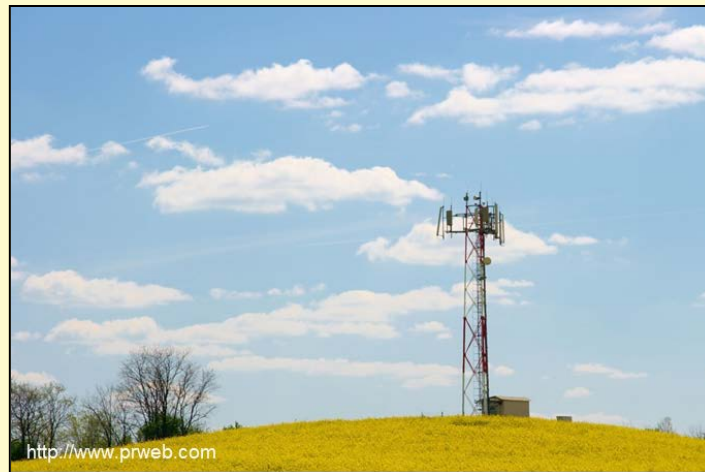


Wireless Telecommunications Facilities Meeting



CHARLOTTE
CHARLOTTE-MECKLENBURG
PLANNING

Neighborhood Leaders Meeting May 8, 2014



- **Welcome and Introductions**
- **Project Overview**
- **Process and Schedule**
- **Wireless Concepts and Terminology**
- **Overview of Charlotte Wireless Telecommunications Facilities Regulations**
- **National Survey Examples**
- **Open Discussion**
- **Wrap Up and Next Steps**



Project Overview

- **Planning Department has hired a consultant, Clarion Associates, to assist staff in updating the wireless telecommunication facilities (cell tower) regulations to:**
 1. **Create user-friendly regulations (consolidate, reorganize, and reformat);**
 2. **Ensure compliance with federal and state legislation; and**
 3. **Make possible modifications to the regulations (tower heights, tower types, setbacks, yards, landscaping, etc.)**



Process Steps & Schedule

- ✓ Clarion Associates selected as consultant.
- ✓ Clarion conducts research on best practices in other cities.
- ✓ Clarion reviews current wireless regulations in Zoning Ordinance
- ✓ Meeting with wireless providers to hear their challenges – April 24
- ✓ Meeting with Neighborhood Leaders to hear their concerns – May 8
- Clarion analysis of feedback and preparation of draft recommendations – June
- Meeting with wireless providers and Neighborhood Leaders to present draft recommendations and hear feedback – July



Process & Schedule

- Refine recommendations and prepare draft text amendment – July
- File text amendment – by July 28
- Public Hearing – October 20
- Zoning Committee Recommendation - Oct. 29
- Earliest Council Decision – November 17





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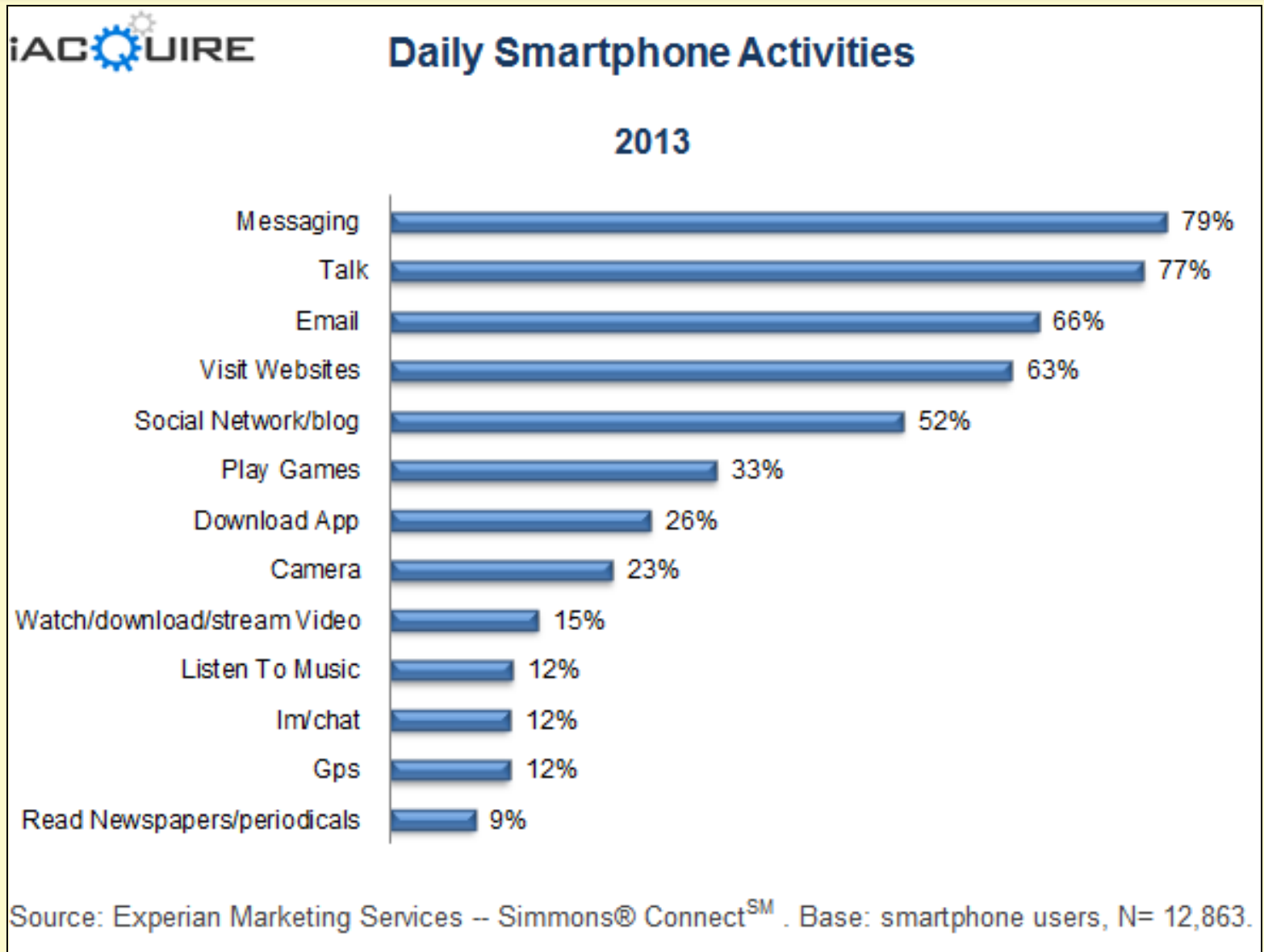
Wireless Devices – What We Like



What We Like: voice, text, face-time, downloading apps, email, video

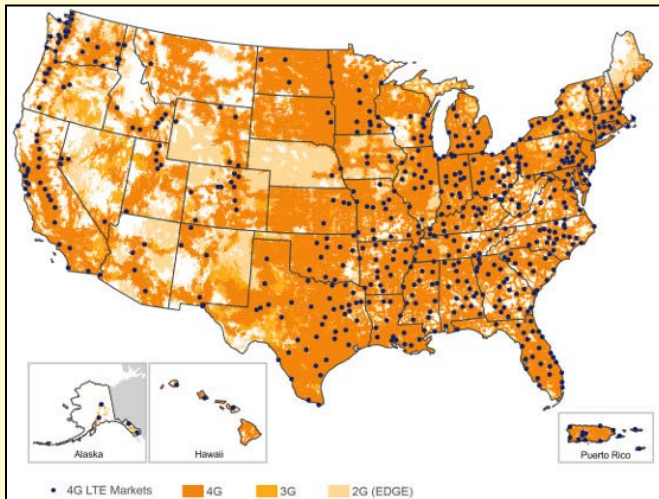


What We Like Most



Generations of mobile technology

- 1983: 1G - Voice
- 1990's: 2G - Texting
- 1993: 3G - Data (1st smartphone)
- 2000's: 3G - Data
- 2009: 4G - Streaming media (facetime, video, higher speeds)



AT&T Map

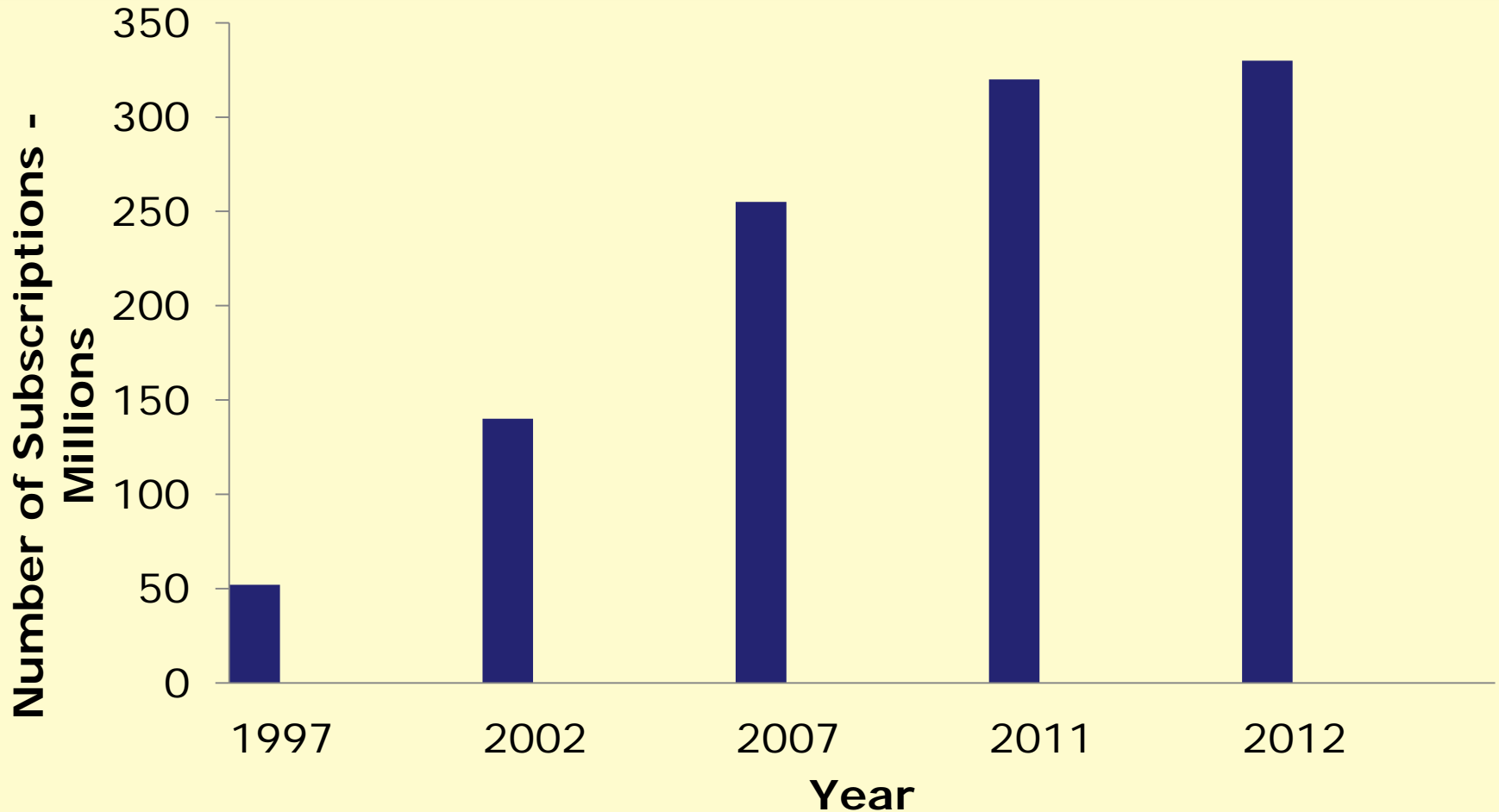
4G LTE Markets – Black dot

4G – Dark orange

3G – Medium orange

2G – Pale orange

Number of U.S. Wireless* Subscriptions

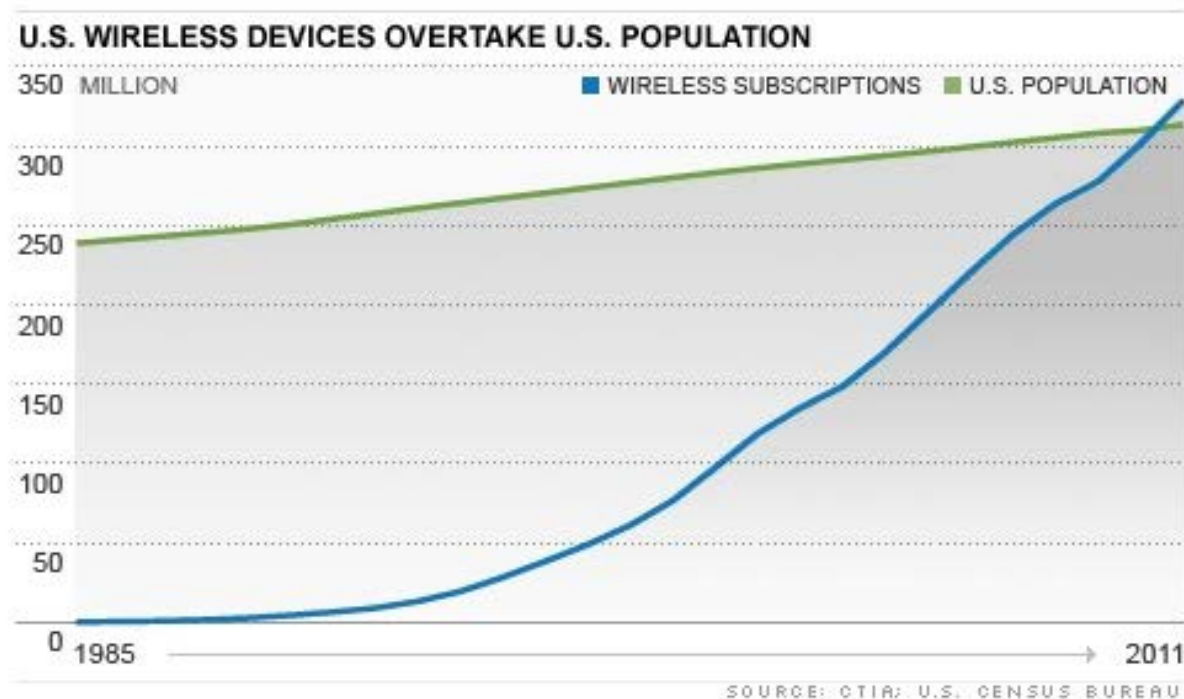


Pew Research Center, 2012

*Includes phones, tablets with data plans, wifi hot spot devices, but not wifi only

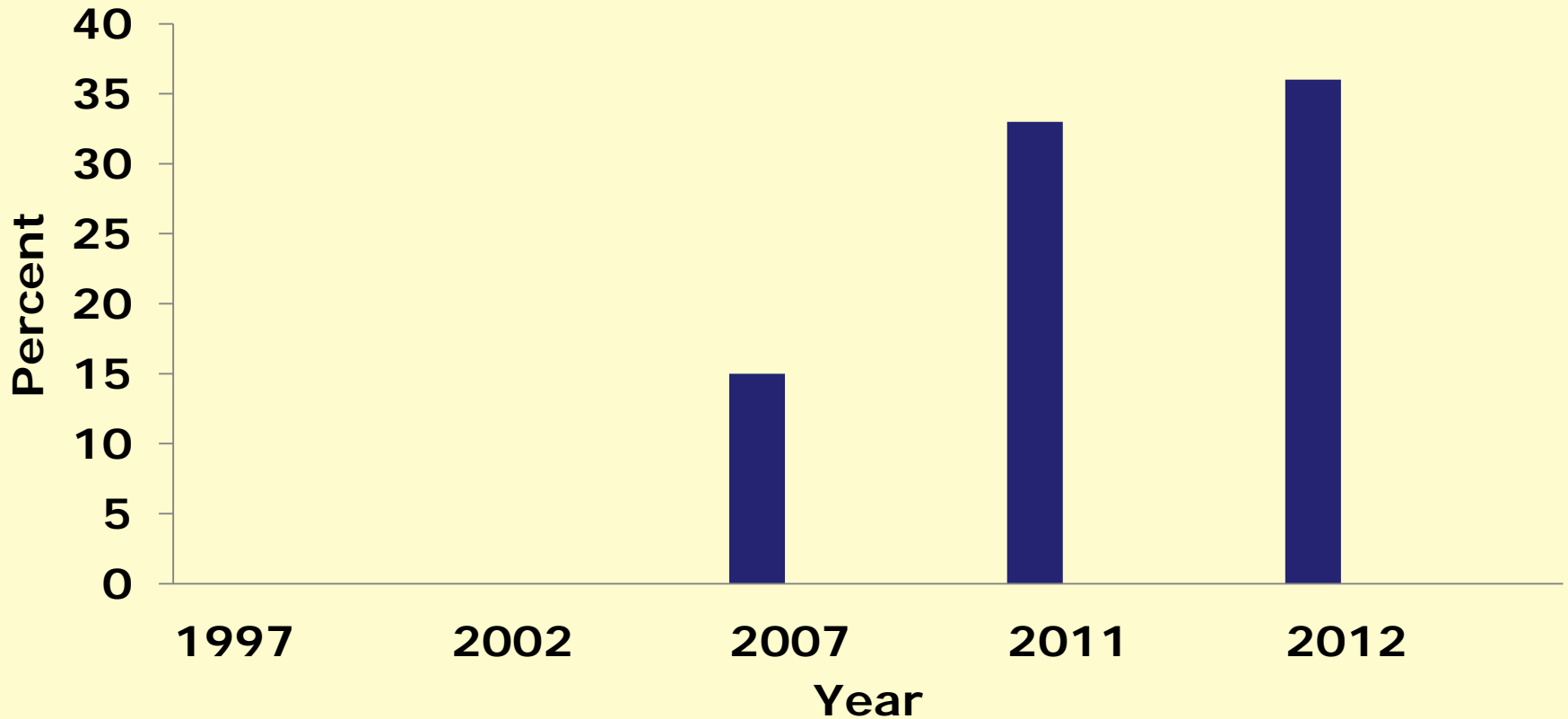
Wireless Devices Compared to U.S. Population

- Most people have more than one wireless device with a voice and/or data plan (mobile phones, tablets with data plans or wifi hot spot with data plan).



Wireless Only Households

Percent of U.S. Wireless Only Households





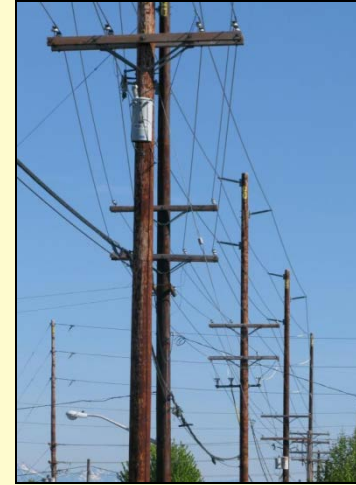
CHARLOTTE

Wireless Services How Does it Work?

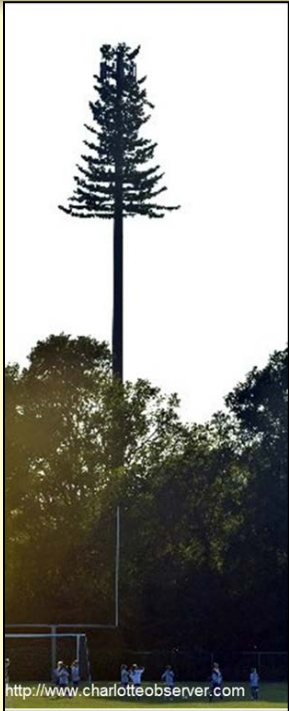
Service Requires the Needed Infrastructure



Like
electricity
and cable TV,
infrastructure
is required



What is the Infrastructure?





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Terminology and Concepts

Tower Types

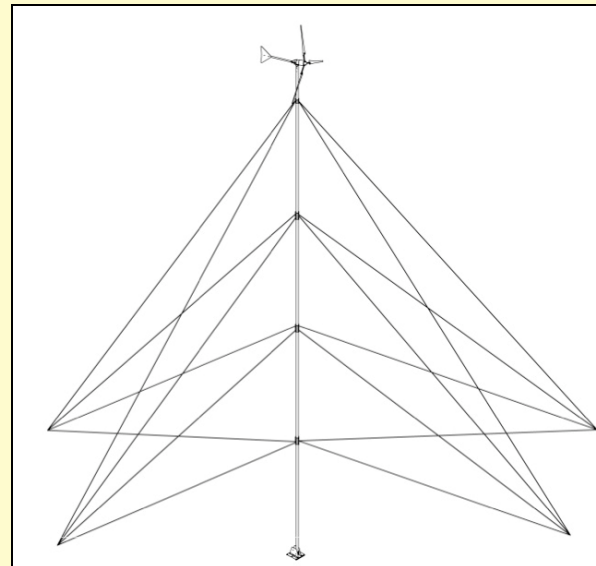
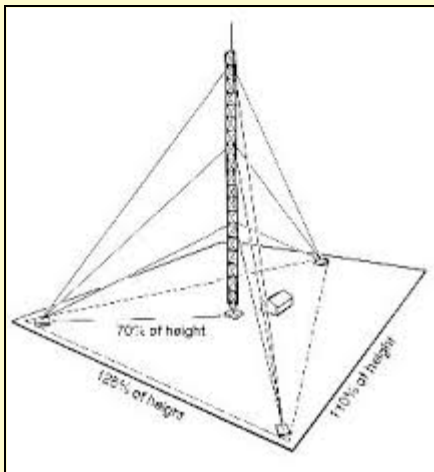
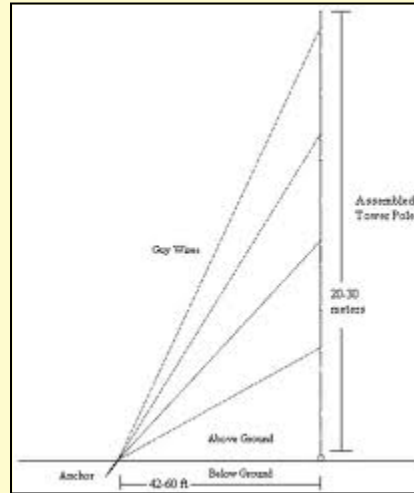
Monopole - Tapered steel tubes that fit over each other



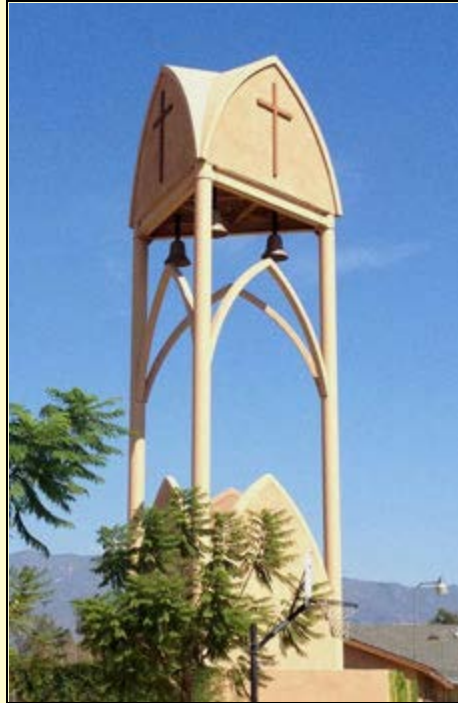
Lattice Tower – Self-supporting



Guyed Wire Tower – Tethered by Wires



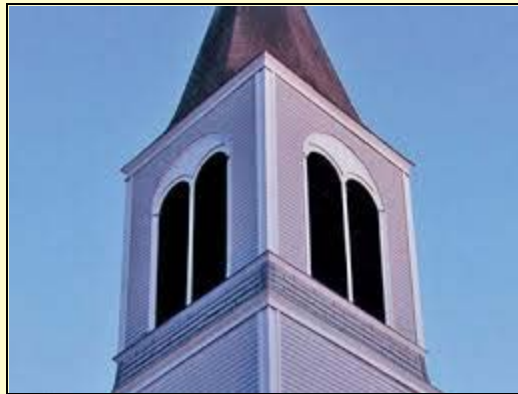
Stealth Towers

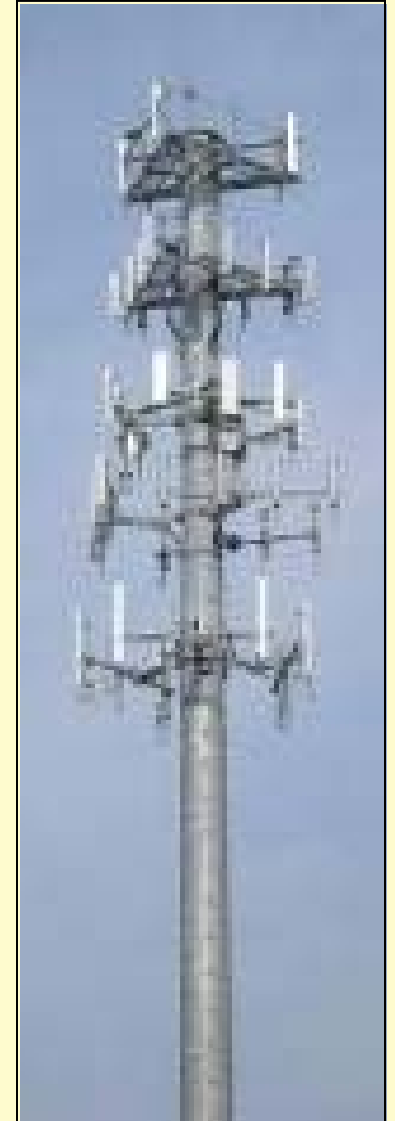
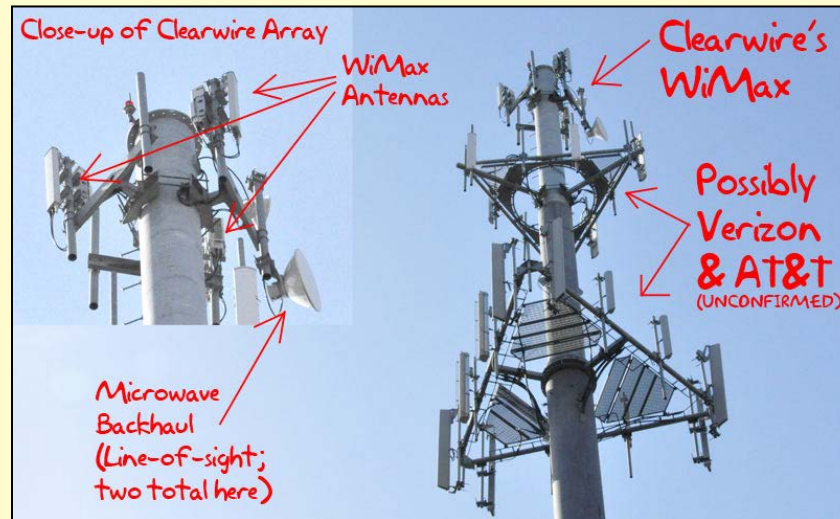


**Reduce
ability to
collocate**



Antenna Arrays





Equipment Facilities

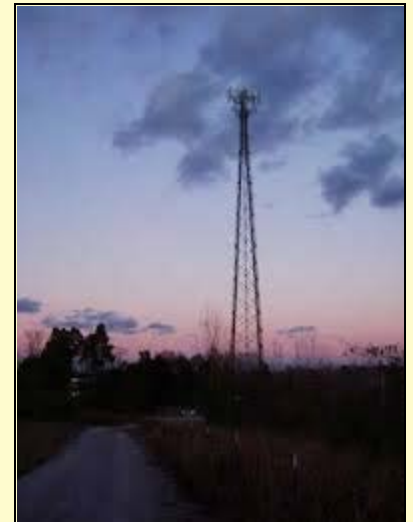


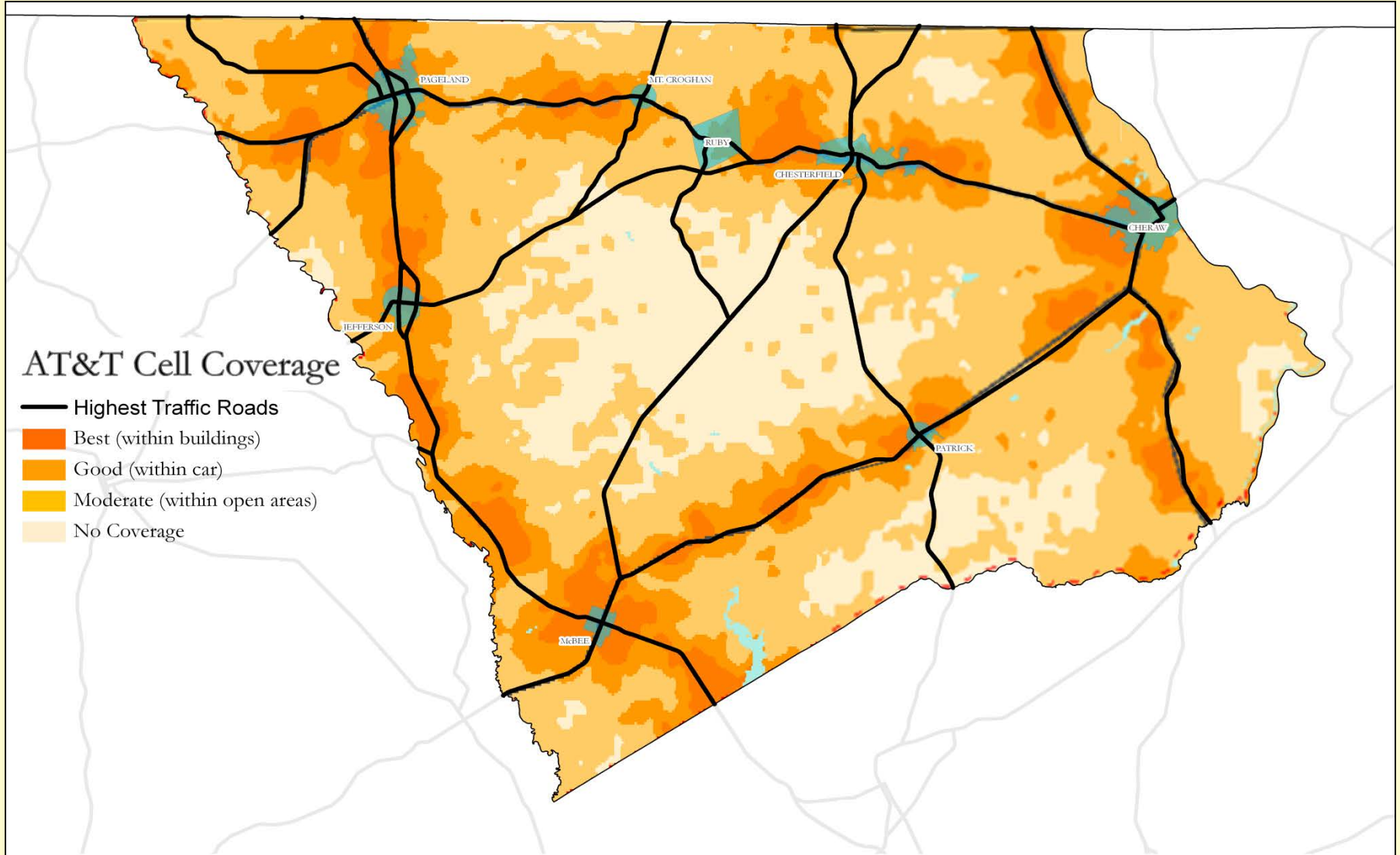
Enclosures



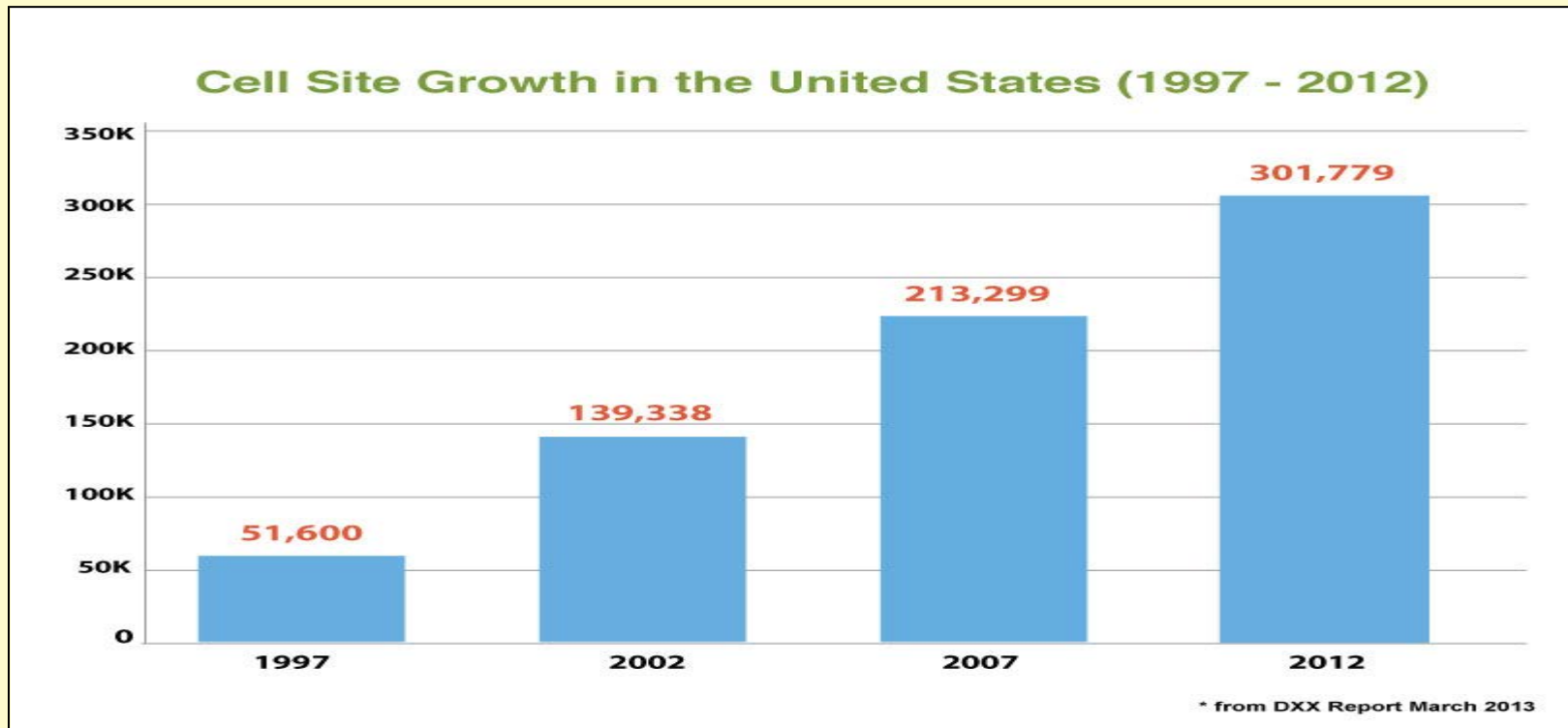
Tower Heights

- The taller the tower, the fewer towers are needed
- The taller the tower, the more opportunity for multiple wireless providers to use the tower.





- Each tower has a finite capacity, no matter the height.
 - Example: 100 phone calls or 50 data downloads
- The industry is struggling with their own success: More demand for hi-speed, data, downloads, facetime, videos, apps, etc.



- Each tower has a finite capacity, no matter the height.
 - Example: 100 phone calls or 50 data downloads
- The industry is struggling with their own success: More demand for service beyond voice and texting
- A tower that was sufficient to serve the area 5 years ago, can't keep up with demand today. People are doing more on their smartphones.
 - Results in busy signals, and longer wait times for internet data.





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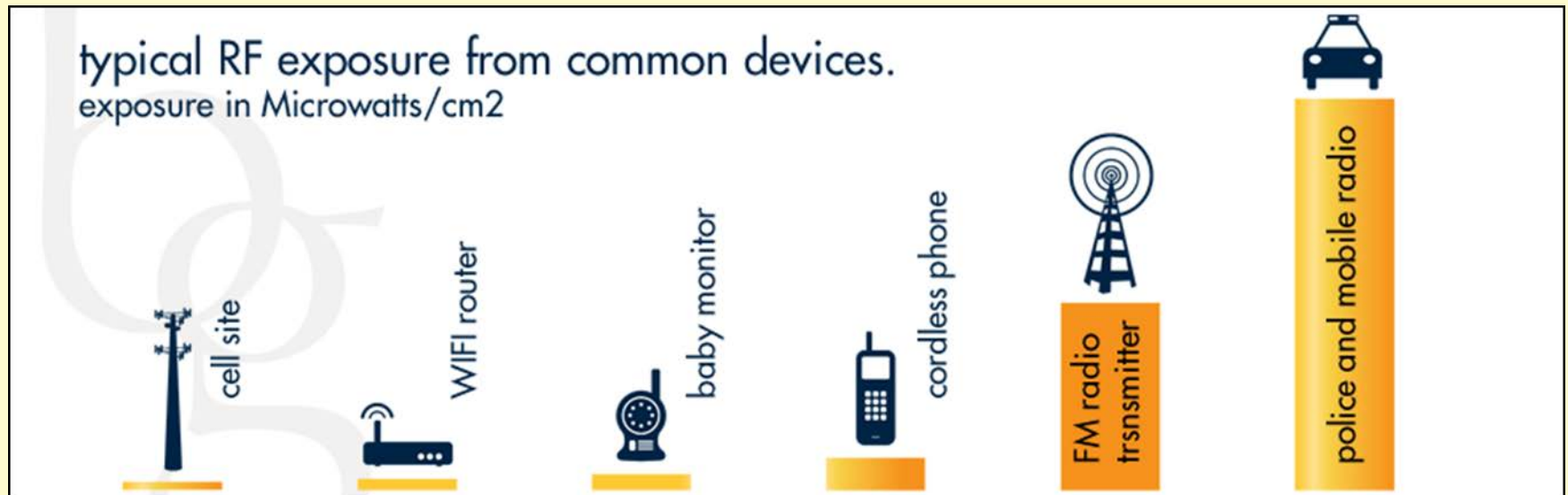
Legal Considerations

Legal Considerations

Telecommunications Act 1997:



- Can't discriminate among providers of equivalent wireless services.
- Can't deny service based on environmental effects of radio frequency emissions to the extent that the facilities comply with the Federal Communications Commission's regulations concerning such emissions.



Middle Class Tax Relief & Job Creation Act of 2012

“A local government may not deny, and shall approve, any eligible facilities request for modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.”



North Carolina Session Law 2013-185

- Cities can regulate based on zoning considerations (aesthetics, landscaping, structural design, setbacks and fall zones, among others).
- “Substantial modification” means:
 - Increase in height by more than 10% or the height of one additional antenna array with separation, not to exceed 20’, whichever is greater.
 - Adding appurtenance to the structure that protrudes horizontally by more than 20’ or more than the width of the support structure at the level of the addition, whichever is greater.
 - Increasing square footage of existing equipment compound by more than 2,500 sq. ft.



Federal Communications Commission Ruling

Federal Communications Commission Declaratory Ruling 2009:

- Can't deny/prohibit a wireless service facility siting because service is available from another provider.
- Applications for facilities must be acted upon within a reasonable period of time (90 days)
- Bars zoning decisions that have the effect of preventing a specific provider from providing service to a location.





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Comparison of Charlotte Regulations with Other Cities

Prepared by Clarion Associates

**Boston, Cleveland, Denver,
Los Angeles, Philadelphia,
Portland, Raleigh, and Cary**



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General Observations

General Observations (Charlotte)

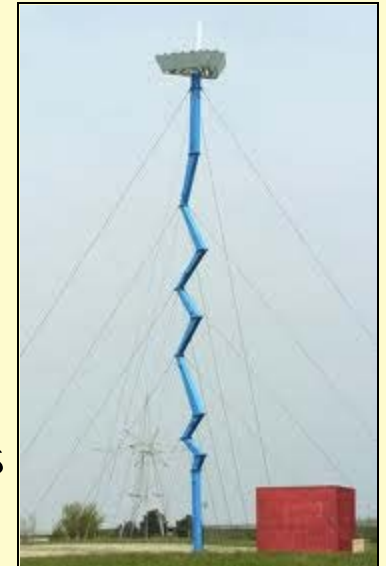
Not user-friendly

- Cell Tower requirements are embedded within the city's height limitations instead of being a separate use.
- A user has to read entire section to locate specific requirements (e.g., collocation standards)
- Text is not clear or concise
- No dimensional tables or graphics



General Observations (Other Cities)

- Many cities incorporate cell tower standards into their use regulations
 - Cary, Denver, Philadelphia
- Common Characteristics
 - Purpose statement
 - Definitions that align with industry terminology
 - Hierarchy of preferred types of facilities community desires and incentives to encourage these facilities (e.g., greater permitted max height for stealth towers)
 - Standards presented in table format



Tower Type (Charlotte)

- No hierarchy of tower type preference
- But, regulations favor monopole and stealth design
 - Replacement towers must be monopole.
 - Towers in or within 400' of a residential district must be concealed.



Photo credits:
<http://www.falloinc.com/>
Monopole



Photo credit: <http://www.obrag.org>

Stealth Tower

Tower Type (Other Cities)

- Include a hierarchy of preference for tower types and locations.
 - Cary
- Favors monopoles.
 - Cleveland, Denver, Los Angeles, Raleigh
- Prohibits lattice towers in some districts.
 - Portland



Photo credits:
<http://www.nettoinc.com/>

Disguised Unipole
("slick stick")

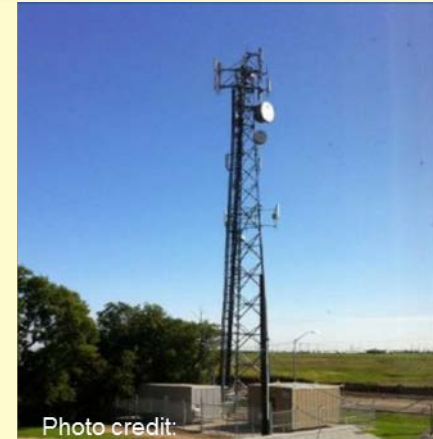


Photo credit:
<http://www.antennamgt.com>
Lattice Tower

Cary: Hierarchy of Preferences

1. Antenna collocation on existing tower
2. Stealth antenna on existing building
3. Building mounted antenna and/or tower
4. New stealth tower
5. New monopole tower
6. New lattice-type tower

Tower Height (Charlotte)

- Up to 40' in any district
- Above 40' in any district, as a principal or accessory use, with restrictions
 - Generally, setback and yard restrictions apply to facilities in or adjacent to residential areas
- Collocation
 - $\leq 150'$ (min 2 carriers)
 - $> 150'$ (min 3 carriers)



Tower Height (Other Cities)

- Often governed by underlying zoning district
 - Boston, Cleveland, Denver, Philadelphia, and Portland
- Maximum heights vary, but most allow greater maximum heights based on the number of providers that can be accommodated.
 - Cary, Denver, Los Angeles, and Raleigh
- Building-mounted antennae heights identified.
 - Cary, Philadelphia, and Los Angeles



Setback & Yard Standards (Charlotte)

- Up to 40', underlying zoning district standards apply.
- Greater than 40', standards vary (and are difficult to interpret) based on:
 - Zoning district,
 - Distance to a residential area, and
 - Whether facility is a principal or accessory use
 - Examples:
 1. Residential district, principal use: 200' from all abutting property lines.
 2. Residential district, accessory use, adjacent to Residential: Setbacks/yards increase 1':1' for each foot of height over 40', up to a max of 200'.
 - 100' tower = 60' setback adjacent to Residential.
 3. Non-Residential district, principal or accessory: setbacks/yards of the district



Setback & Yard Standards (Other Cities)

- Generally, the standards of the underlying zoning district govern. (Cary and Denver)
- Most require stricter setback standards for residential areas. (Cary, Cleveland and Denver)
 - Preserve neighborhood character, minimize aesthetic impacts, maintain property values.
- Standards presented in table format. (Denver)
- Few factor in fall zone. (Philadelphia and Los Angeles)



TABLE 1. TOWER SEPARATION FROM CERTAIN USES AND ZONES.

Off-Site Use/Designated Area	Separation Distance
Single-unit or two-unit dwellings	500 feet or 3 times the height whichever is greater
Vacant platted or unplatted residentially zoned land	500 feet or 3 times the height whichever is greater
Existing multi-unit residential units	500 feet or the height of tower whichever is greater
City park and open space uses	1,000 feet
Nonresidentially zoned lands with nonresidential uses	None; only setbacks apply

Landscaping and Screening (Charlotte)

- Few provisions
- New & Replacement towers
 - A permit applicant must “in good faith consider” landscaping, screening, and design comments from adjacent property owners.
- Replacement towers
 - Must conform to landscaping and buffering requirements in effect at the time of the replacement.



Landscaping and Screening (Other Cities)

- Landscaping and screening provisions are incorporated to minimize aesthetic impact.
 - Boston, Cary, Cleveland, Denver, Los Angeles, Philadelphia, Portland, Raleigh
- Most require a fence (6' – 8') around the tower base and landscaping (screening) around the fence.
 - Cary, Cleveland, Denver
- Some require heightened standards near residential districts.
 - Denver



- No purpose statement expressing intent to minimize adverse visual impacts of towers.
- Some concealment provisions, e.g.,
 - Facilities must blend into a neighborhood's character
 - Cell tower facilities within 400 ft. of a residential zoning district must be indiscernible
 - A flagpole design can only be used in non-residential (or institutional) zoning districts



- Purpose statements express the intent to regulate the design of cell towers to minimize adverse aesthetic impacts.
 - Boston, Cary, Cleveland, Los Angeles, Philadelphia, Portland
- Architectural design provisions are generally subjective, e.g.,
 - Denver: “design . . . must use materials, colors, textures, screening, and landscaping that create compatibility with the natural setting and surrounding structures”
 - Raleigh: Design to look like a residence when in a residential district



Open Discussion

- What regulations are important to you?
- What revisions should be considered?
- What concerns do you have?

DISCUSSION TOPICS

Tower Heights

Tower Types/Preferences

Concealment Standards

Building/Rooftop Facilities

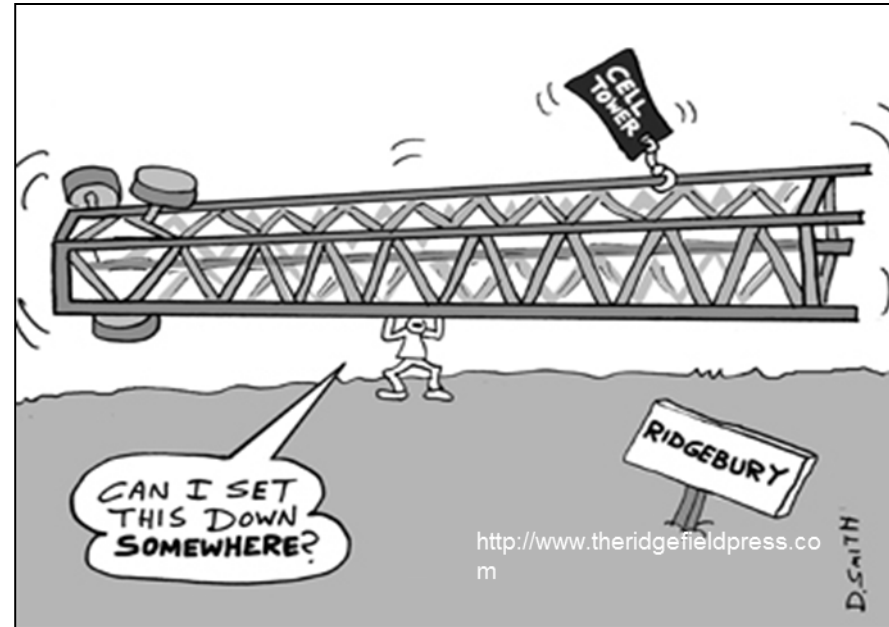
Collocation Requirements

Landscaping/Screening of Base

Enclosures

Setbacks/Yards

Principal/Accessory Use
Standards



Do we need another meeting to continue discussion?

Next Steps

Next Steps	Month/Date
Staff summarizes comments and forwards to consultant	By May 13
Consultant prepares draft text amendment recommendations in consultation with staff	By June 12
Staff presents draft text amendment recommendations to Neighborhood Leaders and Wireless Providers at Meeting and hears comments	July
Staff refines draft text amendment based on comments from meeting	July
Text amendment filed	By July 28
Public Hearing	October 20
Zoning Committee Recommendation	October 29
Earliest City Council Decision	November 17

Questions?

Please contact:
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704.336.5722

smontgomery@ci.charlotte.nc.us

Website:

[http://charmeck.org/city/charlotte/planning/Rezoning/
StakeholderGroups/TextAmendmentStakeholderGroup/
Pages/Wireless-Telecommunication-Facilities-%28Cell-
Towers%29.aspx](http://charmeck.org/city/charlotte/planning/Rezoning/StakeholderGroups/TextAmendmentStakeholderGroup/Pages/Wireless-Telecommunication-Facilities-%28Cell-Towers%29.aspx)

