

# Planning Commission

Revised Draft Telecommunications  
Ordinance

P13-0065

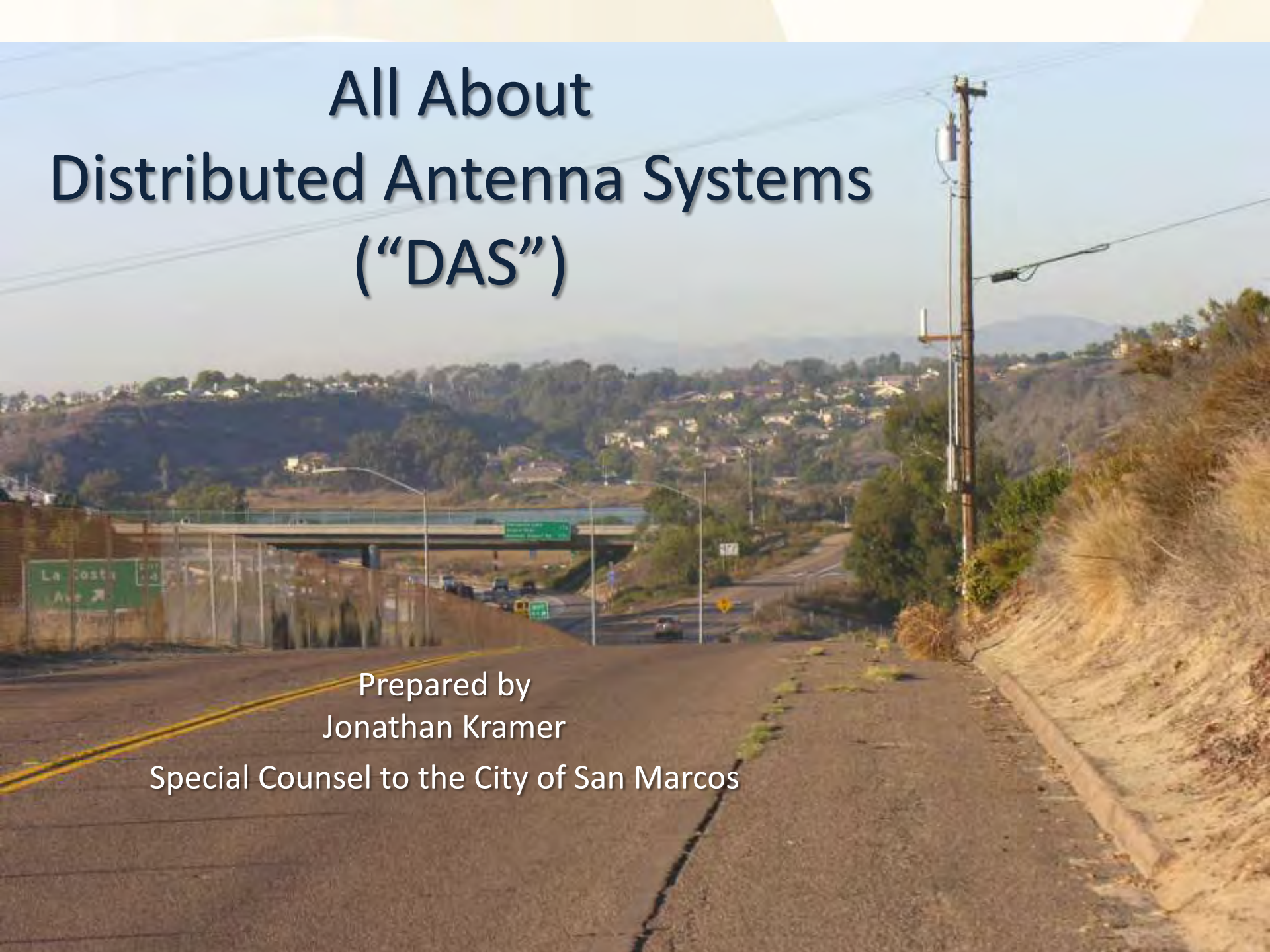
June 30, 2014



# All About Distributed Antenna Systems ("DAS")

Prepared by  
Jonathan Kramer

Special Counsel to the City of San Marcos



# Some Specialized DAS Terms of Art

- **DAS** Distributed Antenna System
- **Fiber** Fiber Optic cable connecting the DAS HUB to the DAS Node
- **HUB** Where the wireless carrier's signals are handed off to the DAS equipment
- **Node** The remote location, including the DAS equipment and local DAS antenna
- **Protocol Agnostic** DAS can carry 2G, 3G, 4G + RF signals



# What is a DAS Network?

- At its core, a DAS network:
  1. Takes a small portion of the wireless carrier's radio frequency (RF) signal at the carrier's base station, often at an existing cell site, then...
  2. Converts that RF signal to light waves at the DAS Hub, and...
  3. Sends those light waves via fiber optic cables to a distant location (the DAS Node) which may be physically located miles away from the DAS Hub, where...
  4. The light waves are converted back to RF signals, and...
  5. The RF signals are sent via coaxial cable to a small antenna, where
  6. The antenna sends the RF signals to the wireless carrier's customers located in the area around the DAS Node.
  7. The process simultaneously operates in the reverse direction to connect the customers' cell phones back to the wireless carrier's base station via the DAS network.





# The Illustrated DAS Network

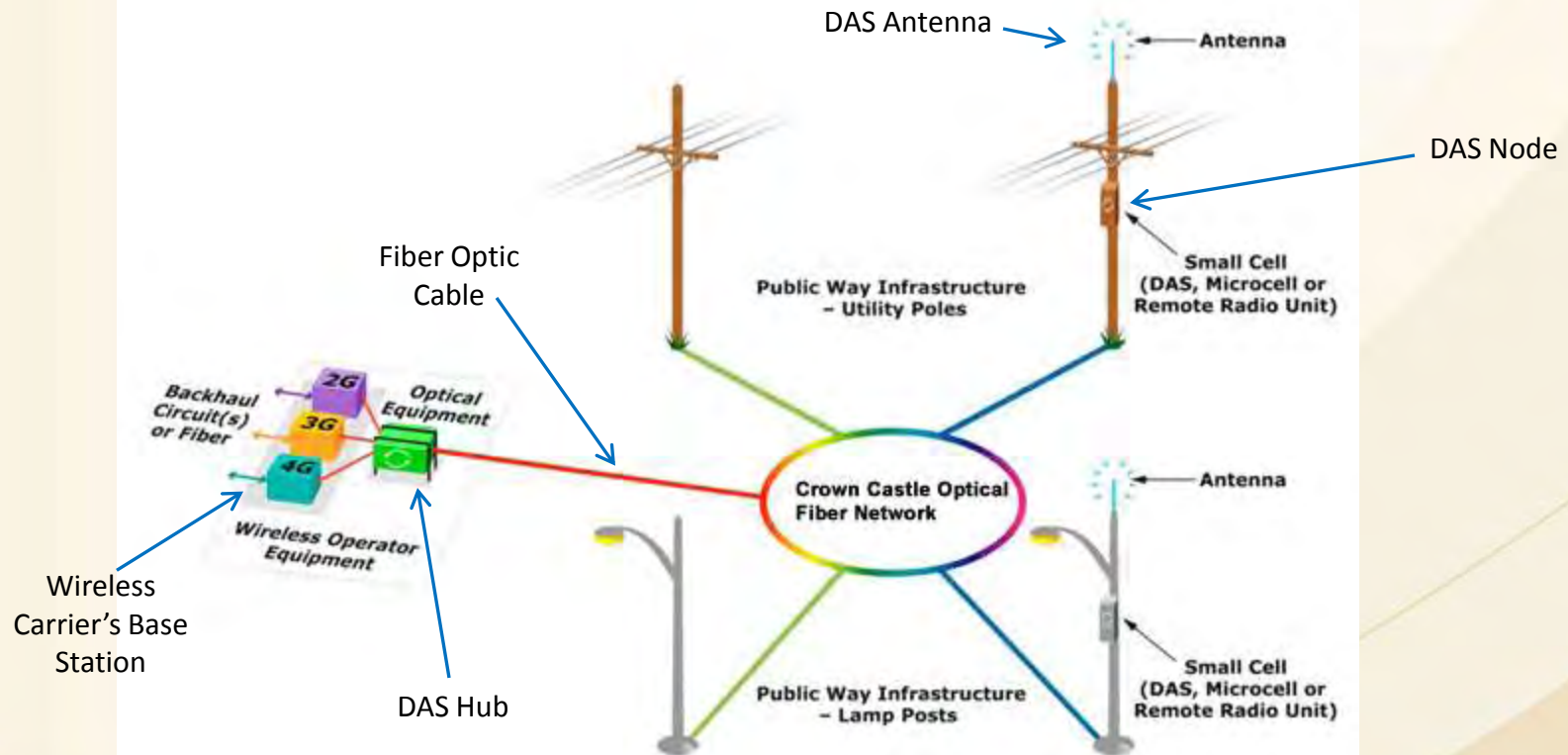
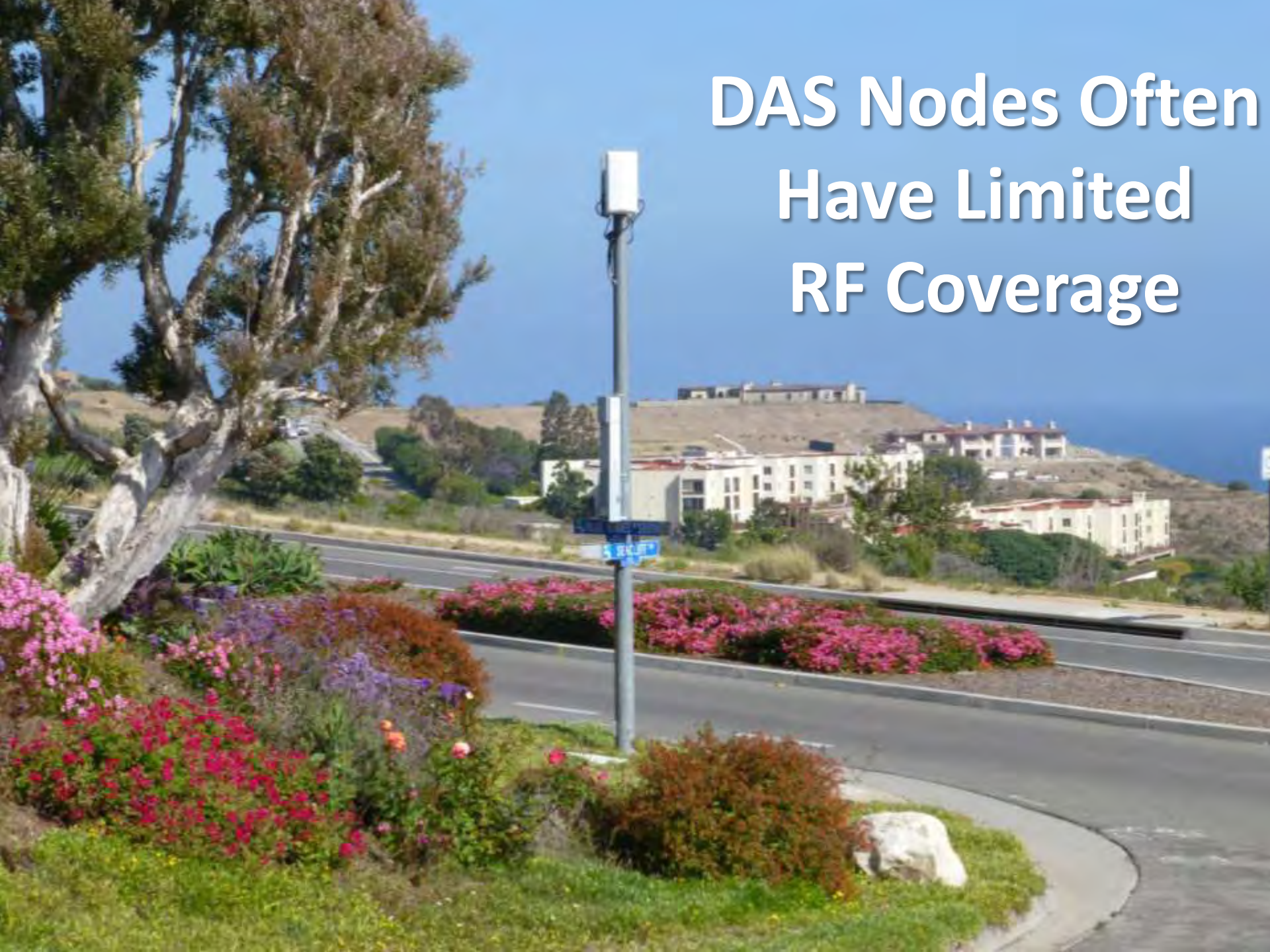


Illustration source: <http://www.crowncastle.com/das/technology.aspx>

Annotations by J. Kramer



**DAS Nodes Often  
Have Limited  
RF Coverage**

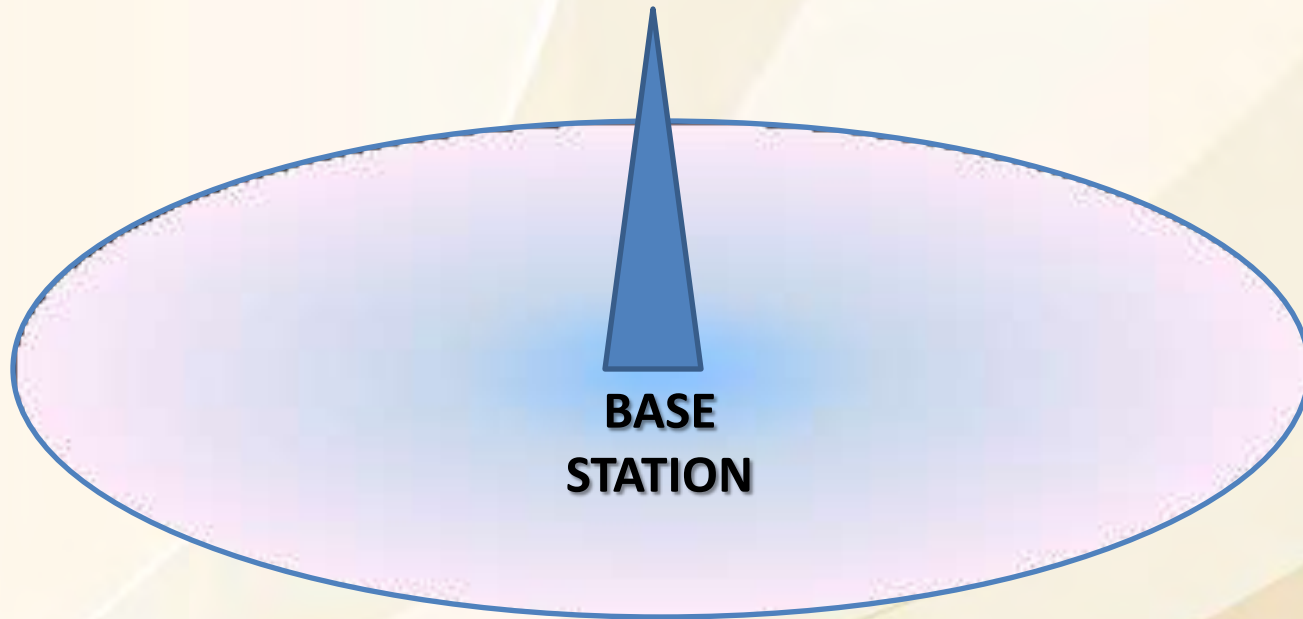




**DAS Nodes Are  
Often Installed  
About 22' – 25'  
Above Ground**

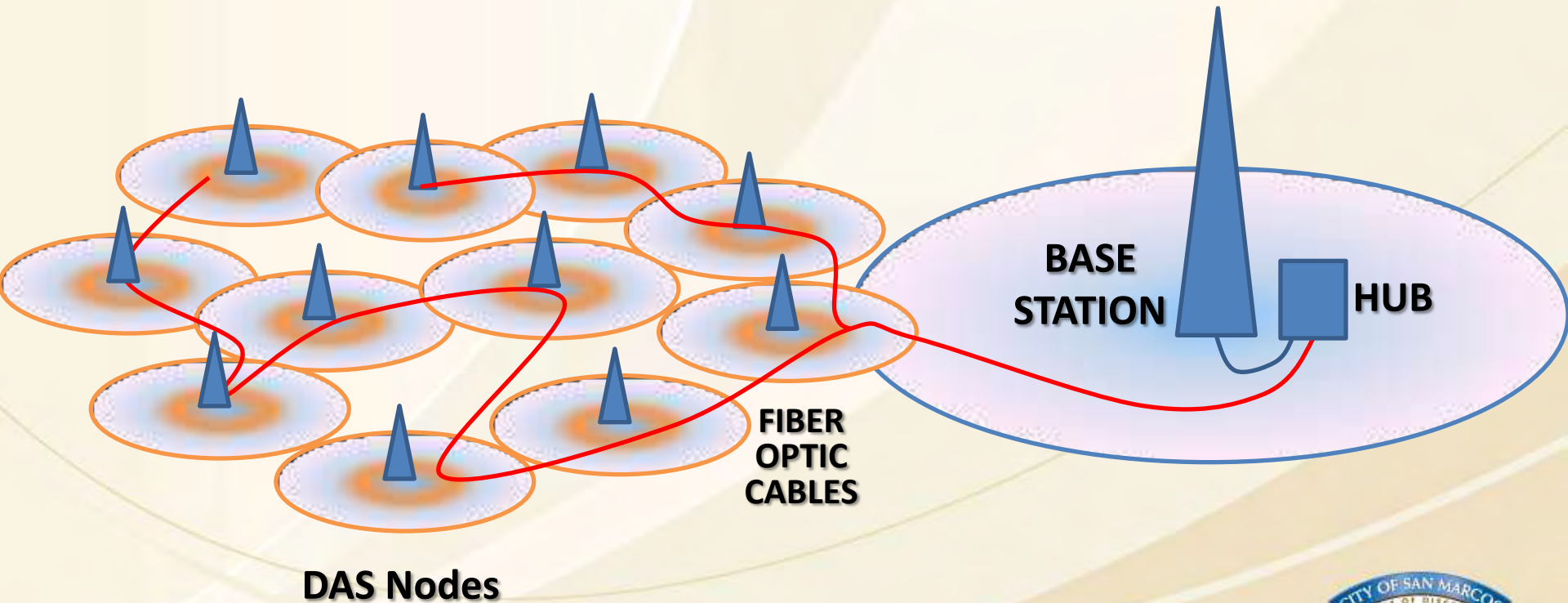


# **A Single Macrocell Base Station Provides Wide Area Coverage Compared with a DAS network**





# A DAS Network May Require 8 to 12 (or more) DAS Nodes to Achieve Similar RF Signal Coverage From a Single Macrocell Base Station



# Main Benefits of DAS

- Much smaller 'foot print' compared to a traditional Macrocell base station
- Advertised ability to serve multiple wireless carriers from a single node
- Increased signal strength in the immediate area of each DAS node (sometimes resulting in improved in-building services)



# Main Detriments of DAS

- DAS is NOT a replacement for a macrocell;
- DAS is NOT a base station, but rather an system of remote antennas that requires a connection to an existing or new base station;
- Many DAS facilities in a given area closer to end users compared with a macrocell;
- Incomplete signal coverage compared with a macrocell due to lower antenna height.





# Main Detriments of DAS

*Continued*

- Unlikely that DAS network nodes and antennas will be shared between different wireless carriers;
- Substantial new installations of fiber optic cables (new street scarring; new pole-to-pole cables) ;
- Multiple DAS nodes, antennas installed on the same pole;
- DAS nodes are rarely camouflaged or undergrounded, although they can be;
- DAS antennas are rarely camouflaged;
- Usually requires a separate SDG&E meter/breaker box to provide electrical power



# **Additional Photo Examples of DAS Node Installations**



**DAS NODES CAN BE  
INSTALLED IN  
UNDERGROUND  
VAULTS**





























# Staff Presentation





# Background

- The City currently regulates wireless telecommunications facilities (WTFs) per San Marcos Municipal Code Chapter 20.465
- In 2013, staff prepared draft revisions to Chapter 20.465
- The draft ordinance was presented at a workshop in December 2013



# Background

- In December 2013 the Planning Commission recommended approval of the draft ordinance to the City Council
- At the January 14, 2014 City Council hearing, public testimony was presented; and the Council gave staff additional direction to modify the draft ordinance



# Background

- On January 28, 2014 the City Council adopted an urgency moratorium ordinance and extended the moratorium on March 11, 2014
- If not further extended, the moratorium remains in place until a new ordinance is adopted or January 21, 2015, whichever occurs first





# Background

- The City Council asked staff to re-evaluate the following provisions of the draft Ordinance:
  - Maximum number of WTFs allowed on a parcel;
  - Consider allowing more than one (1) WTF in agricultural/residential areas based on lot size;
  - Eliminate the minimum 1,000' separation between existing and proposed WTFs within agricultural and residential zones/areas and to allow clustering
  - Include regulations for smaller equipment (referred to at the time as “DAS”)



# Background

- On April 2, 2014 a revised draft was presented at a public workshop; public comment was received and considered
- Staff further modified the revised draft during the month of April/May 2014
- On May 22, 2014, the draft ordinance being considered tonight was published to the City's website to allow a 30 day public review period prior to the Planning Commission hearing



# Background

- Public comment has been received, is included in the Planning Commission packet, and will be discussed later in the presentation





# Recap of Existing City Zoning Regulations

- The existing zoning regulations are designed to encourage wireless telecommunications facilities to be located on City owned property, on commercial/industrial sites and to incorporate a camouflaged design
- If a proposed facility is allowed “by right” the application is processed administratively; otherwise, a Conditional Use Permit is required



# Background - Federal Regulations

- Federal law (as interpreted by court decisions) preserves a local jurisdiction's authority to regulate wireless telecommunications facilities, but with restrictions, according to:
  - Telecommunications Act of 1996 (TCA) Section 704
  - 6409(a) Middle Class Tax Relief and Job Creation Act of 2012
  - FCC rules



# 1996 TCA Section 704

- The City may not “unreasonably discriminate” against providers of similar telecom services
- The City may not prevent the completion of a carrier’s network
- The City must process applications in a “reasonable” timeframe (subsequently specific “shot clock” processing limitations imposed)
- The City cannot deny an application based on perceived health risks associated with RF Emissions





# 6409(a) Middle Class Tax Relief and Job Creation Act of 2012

- “...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. . .”



# Revisions to the Draft Ordinance- Overview

- Revisions to the January 14, 2014 draft ordinance are identified in underlined, red text to highlight the changes staff is recommending
- Primary revisions are to areas of the draft Ordinance the City Council wanted addressed, these areas will be the focus of the next slides



# Draft Ordinance-Overview

- The majority of the draft ordinance remains consistent with the previous version submitted to the Planning Commission/City Council, except as discussed tonight





# Draft Ordinance-Broad Overview

- Clearly identifies how applications for WTFs are processed based on the location and design
- Encourages WTFs to locate outside of residential and other sensitive areas
- Encourages the use of camouflaged designs
- Provides for managed development in the City with the fewest number of WTFs to complete a network
- Encourages the use of Compact Cell facilities when feasible



# Draft Ordinance-Overview

- Draft Ordinance organized as follows:
  - Purpose
  - Applicability
  - Permit requirements
  - General Regulations
  - Location Criteria
  - Application Content
  - Design and Development Standards
  - Maintenance and Operations
  - Abandonment or Discontinuance of Use
  - Duration of Permit



# Draft Ordinance-Overview

- Draft Ordinance organized as follows:
  - As-Built Photograph Submittal Requirement
  - Notification of Change of Ownership/Operator
  - Amateur Radio and Over-the-Air Receiving Devices
  - Indemnification
  - Obligation to Comply with the Chapter
  - Appeals
  - Enforcement
  - Definitions





# Draft Ordinance-Overview

- Permit tier remains intact
  - Administrative Permit required for proposed WTFs in “preferred locations”
  - Conditional Use Permit required for proposed WTFs in “discouraged locations”



# Primary Revisions to the Draft Ordinance- Max. Number of WTFs

- Revised the maximum number of allowable WTFs on a single parcel the Agricultural and residential zones/areas, depending on lot size

Parcel Size	
Less than 1.0 acre	A WTF should not locate on a parcel this size
Between 1.0 – 5.0 acres	No more than one (1) WTF
Between 5.1 – 10.0 acres	No more than two (2) WTFs
Greater than 10.1 acres	No more than three (3) WTFs



# Primary Revisions to the Draft Ordinance- Maximum Number of WTFs

- Exception: if provider submits technically sufficient and conclusive proof the site is necessary to close a significant gap and there are no less intrusive alternative means available to close the gap
- This ‘safety valve’ is required by court decisions





# Public Comment

- Lot size threshold should be a minimum of 15 acres
- Maximum number of WTFs:
  - Three is too many
  - Three WTFs could mean six or nine WTFs if a carrier proposes collocation
  - Should allow more than three WTFs



# Staff Response to Public Comment- Lot Size Criteria

- Staff analyzed the quantity of Agricultural zoned parcels on a Citywide basis
- 610 parcels are zoned A-1 or A-2
- Only 9 parcels have a lot size of 15 acres or more; Most lot sizes fall between 1.0-5.0 acres
- A 15 acre minimum lot size standard for WTFs would effectively prohibit a carrier's ability to complete their network coverage



# Staff Response to Public Comment-Lot Size Criteria

- As a result of public comment regarding the maximum number of WTFs in the Agricultural and Residential areas/zones, staff added language to indicate the maximum number of WTFs (based on lot size) is 1, 2, or 3, regardless if a site has collocation or standalone facilities
- Staff supports retaining a maximum of three WTFs based on the standards included in the draft ordinance





# Primary Revisions to the Draft Ordinance-Clustering

- Ordinance revised to encourage and allow collocation and clustering of WTFs whenever feasible
- 1000' separation standard between WTFs was eliminated



# Public Comment

- Clustering:
  - Should not be allowed; WTF setbacks should be measured between the WTF and nearby homes in order to minimize visual impact of the WTF on adjacent homes
    - Minimum setback ranged between 600' – 2000'
    - Minimum setback of 1,000' measured from property line
  - Should be allowed



# Staff Response to Public Comment-Clustering/Setbacks

- Draft Ordinance design standards require that a proposed WTF be located in the least intrusive location
- WTF must be designed to minimize the visual impact to the greatest extent feasible; use camouflage techniques to blend into surrounding area
- WTF must use the least visible and physically smallest antennas possible to accomplish the coverage objectives





# Staff Response to Public Comment- Clustering/Setbacks

- Planning principles measure setbacks from property lines, not an adjacent land uses or structures
- Staff modified the setback standard for standalone facilities in the Agricultural zone to 100' measured from the property line, or 110% of the height of the proposed WTF, whichever is greater
- This standard is consistent with an existing development standard in the Agricultural zone



# Staff Response to Public Comment- Clustering/Setbacks

- The public's proposed setbacks could be construed as or result in a prohibition, which is precluded under Section 704 of the 1996 Telecommunications Act
- It is also problematic to utilize a distance setback from homes, as that has the appearance of an RF-related restriction, which is prohibited by the Telecommunications Act



# Primary Revisions to the Draft Ordinance-Smaller Equipment

- Encourages the use of smaller, less intrusive equipment to supplement existing larger wireless facilities
- Additional language added to the “Public Right-of-Way” section to address installations of smaller equipment within the right-of-way





# Public Comment

- Smaller technology:
  - Use an alternative “DAS” term to define smaller equipment
  - Mandate the use of “Safe Small Cell Technology”
  - Require replacement of Macro sites with small sites especially when located near homes
  - City cannot mandate the use of “DAS networks” or specific technology per federal law



# Staff Response to Public Comment- Smaller Equipment

- Terminology revised from “DAS” to “compact cell” to retain flexibility over time as equipment size changes
- Federal regulations prohibit the City from mandating a specific type of technology; City cannot require existing facilities with current entitlements to remove/replace a WTF
- Ordinance encourages the use of smaller equipment to supplement larger wireless facilities



# All Other Revisions to Draft Ordinance Since January

- Incorporated additional language to 20.465.040B to require the applicant to provide justification if the proposed height of the WTF exceeds the height of the underlying zone
  - Only modification to this standard was to specify justification is required





# All Other Revisions to Draft Ordinance Since January

- Modified 20.465.040F (General Regulations, Legal Access) to specify applicant/operator must “warrant and represent” that it has the written agreement of the applicant and the owner of the property for legal access to and from the WTF and to any utilities necessary to operate and maintain the WTF



# Revised Draft Ordinance- Overview

- On the list of “Preferred Locations” moved the order of “Public right-of-way (non-camouflaged design) – All Zones from # 11 to #5 (after “Public right-of-way (camouflaged design) – All zones
- This was done to encourage the location of smaller WTFs, such as compact cell installations, within the public right-of-way



# Revised Draft Ordinance- Overview

- Added language to Section 20.465.050B- Location Criteria For WTFs in Discouraged locations (including residential and agricultural zones) that requires an applicant to justify that no other alternative exists to close a significant gap, including the installation of one or more facilities in a preferred location, including the installation of facilities such as Compact Cell facilities





# Revised Draft Ordinance-Overview

- Added language to 20.465.060 (Application Content for all WTFs) to require the applicant to include the following in its application package: coverage objectives; basis for selecting the proposed site, and the reasons that other preferred sites, including, but not limited to, Compact Cell facilities within the public right-of-way were not technically or legally feasible



# Revised Draft Ordinance- Overview

- Added language to 20.465.060A.9 to clarify manufacturing specifications for any noise producing equipment (temporary or permanent) must be submitted with the application materials



# Revised Draft Ordinance- Overview

- Added clarifying language to 20.465.060A.16 to indicate the applicant will be required to pay all fees incurred for the City's expert consultant services prior to the public hearing or decision





# Revised Draft Ordinance-Overview

- In the section that identifies Design and Development Standards for all facilities- the order of 20.465.070 A1 and A2 were flipped



# Revised Draft Ordinance- Overview

## – Public Right-of-Way Installations

- Modified Section 20.465.070 E – Design and Development Standards for Public Right-of-Way installations to address compact cell options; including encouragement of the installation of smaller antenna networks within the public right of way



# Revised Ordinance-Public Right-of-Way Installations

- 20.465.070E was expanded to provide more specific regulations
- Standards include:
  - Maximum number and location of antennas;
  - Maximum height and design standards for antennas and equipment;
  - Antenna and equipment mounting regulations;
  - City permits and License Agreement required



# Revised Draft Ordinance- Overview

## Maintenance and Operations

- Modified 20.465.080C (Maintenance Hours) to also apply to sites in or within 100' of Agricultural zones; added reference to the Pacific Time standard
- Modified 20.465.080G (security lighting) to allow the use of a hand-set timer and requirement to have the hand-set timer turn off automatically after one hour





# Revised Draft Ordinance- Overview Maintenance and Operations

- Modified 20.465.080H (Noise) to clarify the standard applies to temporary & permanent facilities



# Revised Draft Ordinance- Overview Amateur Radio & OTARD Devices

- Modified 20.465.130A.8 to allow a permit to be transferred as long as the transferee is qualified to hold the permit



# Revised Draft Ordinance-Broad Overview – Definitions

- Modified definitions:
  - Antenna Tower, removed reference to amateur antennas (separate definition)
  - Significant Gap
- Added definitions:
  - Compact Cell
  - Drive Test
  - Unreasonable Interference (within the public right of way)



# Revised Draft Ordinance

- All other provisions of the January 2014 draft have been retained





# Public Comments

- Public comment has been included in the packet
- Subsequent written comments submitted after the PC Packet was distributed were publicly distributed once received by the City
- Comments were received from residents as well as industry attorneys (AT&T, Crown Castle, and Verizon)
- Next slides will summarize categories of comments



# Public Comments-

- Height standards
  - Do not allow WTFs to exceed the allowable height of the underlying zone
  - Height standard should be allowed to exceed underlying zone's height



# Staff Response to Public Comments

## –Height Standards

- Draft Ordinance includes that proposed WTFs must be designed to be the shortest minimum height technically feasible, placed in location least visible to the public, and least disruptive to the host property
- Enforcing same height as all other structures could result in more WTFs because structures could interrupt signals



# Staff Response to Public Comments

## –Height Standards

- Collocation on one wireless telecommunications tower instead of two may reduce visual impacts, depending on the site location and other project-specific factors





# Public Comments

- Require an Independent 3<sup>rd</sup> Party Site Analysis if the proposed WTF is near homes or schools, using data independent of what the applicant submits
- Third party Site Analysis would be burdensome and costly
- Staff Response:
  - Section 20.465.060.A.16 requires the City's consultant to review application submittals



# Public Comment

- Establish a Citizen Council and an Integrated San Marcos 1, 3, and 5 year plan for responsible community cell coverage
- City should not require a Citizen Council; And providing multi-year network plans would require public disclosure of proprietary business information



# Staff Response – Citizen Council

- The draft ordinance includes opportunities for the public to participate in the process (administrative and CUP)
- Would be difficult to comply with Federal “Shot Clock” processing time standards (90 days for collocation site; 150 days for new site)



# Public Comment – Legal Access

- City must require proof all other property owners that have access rights grant permission to carrier to use the access road
- Staff Response:
  - Draft ordinance requires applicant and property owner to represent and warrant that the applicant has lawful access to the site along common easement access roads





# Public Comment- Maintenance Hours

- Require Monday-Friday 8:00 AM – 5:00 PM for sites within 500' of homes
- Staff Response:
  - Standard in draft ordinance is more restrictive than existing SMMC standard for construction hours
  - Staff modified the ordinance to include all maintenance activity related to WTFs is subject to the M-F hours, and the standard is applicable to WTFs in or within 100' of agricultural zones



# Public Comment-RF Reporting

- RF analysis at time of application and annually a report showing the site and surrounding sites (estimates vs actual readings) be based on what the maximum RF rate was for the site the prior year
- Staff Response:
  - Federal law requires compliance with FCC's RF standards, this is included in the draft ordinance
  - Annual reporting is required and applicant must pay for independent consultant review of annual reports



# Public Comment

- Violations/Enforcement- the ordinance does not contain provisions for enforcing violations
- Staff Response:
  - Ordinance specifies compliance with regulations is required and specifies enforcement will be through civil remedies in accordance with San Marcos Municipal Code (SMMC). SMMC Chapter 1.12 (General Penalty) covers all violations of the SMMC



# Public Comment

- AT&T
- Crown Castle
- Verizon





# Recommendation

- That the City Council consider approving modifications to the SMMC that would supersede and replace Chapter 20.465 of the SMMC in its entirety, as well as affected sections of the SMMC Title 20, and
- That the City Council consider approving an Addendum to the General Plan Program EIR that was prepared and adopted for the update to SMMC Chapter 20.465



# Planning Commission

Revised Draft Telecommunications  
Ordinance

P13-0065

June 30, 2014

