Town of Paradise Valley

6401 E Lincoln Dr
Paradise Valley, AZ 85253

Meeting Notice and Agenda

Town Council

Wednesday, May 17, 2017 | **5:00 PM** | **Council Chambers**

JOINT TOWN COUNCIL / PLANNING COMMISSION SPECIAL MEETING

Pursuant to A.R.S. § 38-431.02, notice is hereby given to the members of the Town Council, Planning Commission and to the general public that the Town Council and Planning Commission of the Town of Paradise Valley will hold a Joint Meeting on Wednesday, May 17, 2017 at 5:00 p.m. at Town Hall, 6401 E Lincoln Drive, Paradise Valley, AZ 85253.

1. CALL TO ORDER / ROLL CALL

Notice is hereby given that members of the Town Council and Planning Commission will attend either in person or by telephone conference call, pursuant to A.R.S. §38-431(4).

2. COMMUNITY CONVERSATION

This item is open to the public and is scheduled for discussion only. The Town Council and Planning Commission will be briefed by staff and other Town representatives. There will be no votes and no final action taken. The Council may give direction to staff and request that items be scheduled for consideration and final action at a later date.

17-177 **Discussion of problems, solutions and permit processes for cell phone coverage in Paradise Valley**

Recommendation: Discuss and provide direction to staff on key questions.

Staff Contact: Kevin Burke, 480-348-3690
Andrew Miller, Town Attorney
Dawn Marie Buckland, Director of Administration and Government Affairs

3. EXECUTIVE SESSION

17-179 **The Town Council may go into executive session at one or more times during the meeting as needed to confer with the Town Attorney for legal advice regarding any of the agenda items listed on the agenda as authorized by A.R.S. §38-431.03(A)(3).**

15. ADJOURN

AGENDA IS SUBJECT TO CHANGE

**Notice is hereby given that pursuant to A.R.S. §1-602.A.9, subject to certain specified statutory exceptions, parents have a right to consent before the State or any of its political subdivisions make a video or audio recording of a minor child. Meetings of the Town Council are audio and/or video recorded, and, as a result, proceedings in which children are present may be subject to such recording. Parents in order to exercise their rights may either file written consent with the Town Clerk to such recording, or take personal action to ensure that their child or children are not present when a recording may be made. If a child is present at the time a recording is made, the Town will assume that the rights afforded parents pursuant to A.R.S. §1-602.A.9 have been waived.*

The Town of Paradise Valley endeavors to make all public meetings accessible to persons with disabilities. With 72 hours advance notice, special assistance can also be provided for disabled persons at public meetings. Please call 480-948-7411 (voice) or 480-483-1811 (TDD) to request accommodation to participate in the Town Council meeting.

Town of Paradise Valley

6401 E Lincoln Dr
Paradise Valley, AZ 85253

Action Report

File #: 17-177

TO: **Mayor Collins and Town Council Members**

FROM: **Kevin Burke, Town Manager**

DATE: **May 17, 2017**

DEPARTMENT: Town Manager

Andrew Miller, Town Attorney
Dawn Marie Buckland, Director of Administration and Government Affairs

AGENDA TITLE:
Discussion of problems, solutions and permit processes for cell phone coverage in Paradise Valley

Council Goals or Other Policies / Statutory Requirements:
Quality of Life - Maintain and Improve the Paradise Valley quality of life

RECOMMENDATION:
Discuss and provide direction to staff on key questions.

SUMMARY STATEMENT:

Poor cell phone coverage has been a continuous issue for the Town of Paradise Valley for several decades. Various solutions have had limited or temporary success. After investigation with carriers and tower companies, the apparent reason remains a lack of infrastructure. Therefore, the purpose of this Quality of Life Initiative, and in turn this special joint meeting, is to explore solutions to increase or improve cell phone infrastructure without sacrificing aesthetics and staying within the confines of the new State law on this topic.

To accomplish this objective, this meeting intends to:

- Share information learned to date
- Provide an update on the State legislation
- Identify possible solutions
- Resolve process questions
- Receive public feedback
- Receive Planning Commission feedback; and,
- Receive direction from Council

Background

Poor Cell Phone Service was identified in January 2016 as a Quality of Life Initiative. The Mayor is the Council Liaison and worked with the Town Manager to obtain information. That started by asking for meetings with the carriers. The Mayor and Manager met with Verizon on March 31, 2017 and AT&T on June 2, 2016. These were preceded and followed with various phone calls with the representatives. Other industry members also approached the Town and had meetings including Engineering Wireless Services (EWS), Ulti-Mobile, and 5thGenWireless (each owned by a PV residents); the Town also spent time with Coal Creek who had submitted the most recent applications for cell antennas in PV. Finally a small cell tower company out of California called Ghost Networks reached out to the Town. These companies provided a consistent message that the Town's poor cell phone coverage was due to a lack of infrastructure. This seemed odd since the Town had worked extensively with a company called New Path (later acquired by Crown Castle) to develop an outdoor distributed antennas system (ODAS) a decade earlier which is housed in faux cactus around Town. Unfortunately, it was learned that an ODAS systems are designed for high density, low interference areas. So it does well for vehicle traffic but does poorly for residential that is more than 400 feet away and/or behind walls (which is most of the PV population). Ghost Networks then provided a more detailed analysis of coverage. This data is summarized in the visuals attached. In short, there were three principal dark spots in the coverage-south central PV (approximately Lincoln and 56th), north east PV ((approximately the Camelback Golf Course), and Northwest PV (approximately Mockingbird and 52nd). Ghost Network postulated that the quickest most cost effective way to solve the problem was three 50-60' tall macro cell antenna towers in those regions that could accommodate all 4 carriers. Mayor and Council expressed appreciation for the information with some members skeptical or opposed to 60 foot monopoles camouflaged or not.

Discussion then moved to the Planning Commission to look closer at the problem and solutions. Currently, Cell Towers are regulated under the Personal Wireless Service Facilities (PWSF) chapter of the zoning code. Moreover, applications for cell phone antennas (or PWSF's) are permitted through a Conditional Use Permit (CUP) that is granted or denied by the Planning Commission. Lastly, any rewrite of the zoning code must go through the Planning Commission. For these reasons, the Planning Commission has an important role in this discussion and will join the Town Council for this meeting.

The Planning Commission had two meetings regarding this topic. The first was an orientation of the information and the second commenced the brainstorming on solutions and policy choices. During the second meeting, the Planning Commission directed the Town Manager to research and provide greater information on the different PWSF options. The owner of EWS, mentioned above, offered his free assistance. That work is attached. However, that work was never presented to the Planning Commission because in January, several bills were introduced at the Arizona State Legislature pre-empting cities and towns ability to regulate cell phone antennas in the Town's right-of-way (ROW). This moved the Town into a defensive position to prevent a loss of regulatory authority on this issue. While new infrastructure is a necessary component of solving the problem, it needed to be done consistent with Town values and precedent. The Mayor & Council identified and prioritized their values relative to negotiating a better bill (attached).

The eventual legislation that was passed does require a rewrite of the PWSF Chapter of the zoning code. Staff will present key points from the legislation and ask Planning Commission and Council for direction on certain components where discretion remains with the municipality.

Following the presentation and discussion on the new State law, the conversation will focus upon solutions. Staff has divided solutions into several buckets. The first two buckets differentiate between “Market Driven” and “Town Facilitated” solutions. The cell phone market is in constant evolution as new technologies are deployed, data demands grow, use patterns change, and federal and state laws change. Therefore, solutions in vogue today may change in the next five years. Attached please find an email from the 5thGenWireless Owner with links to articles on this topic. A market driven solution focuses upon rewriting the zoning ordinance such that it provides flexibility for emerging technology but sufficient controls to manage the aesthetics. That is a very difficult balance to accomplish with a static law. Conversely, the Town could facilitate a solution such that the problem is solved in the immediate future and within acceptable aesthetic considerations but uncertain about the durability of that solution over time.

Within each of those buckets, any solution must look at both small cell and macro cell deployment. The industry appears to be aggressively moving toward small cell solutions. This is evident with the recent state legislation that was originally geared toward small cell and the fact that 5G (the next generation of cell technology) appears to require denser infrastructure. Small cell antennas generally cover about a block (~400’) at a time. They also are typically higher band frequencies with a focus on data. Small cell antennas prefer to be in the 30-50 feet high range. Conversely, the last few Town applications, and discussions regarding applications, have been for macro cell solutions. Macro cell solutions cover areas of 1 mile or more and more recently deploy multiple frequencies (lower frequencies for voice coverage and higher for data coverage). It makes sense that these are the applications Paradise Valley is receiving because: 1) it is the quickest way to cover large areas of underserved customers; 2) the Town is low density; and 3) there are some topography considerations that make macro cells advantageous. The disadvantaged is that macro cells need height to be effective. In Paradise Valley, height issues often mean interference with view corridors. This then requires some creative camouflage solutions as well.

Recently, the Town has talked to another industry expert, American Tower. They have presented both micro and macro solutions to the Town. These can be seen in the attached Power Point presentation.

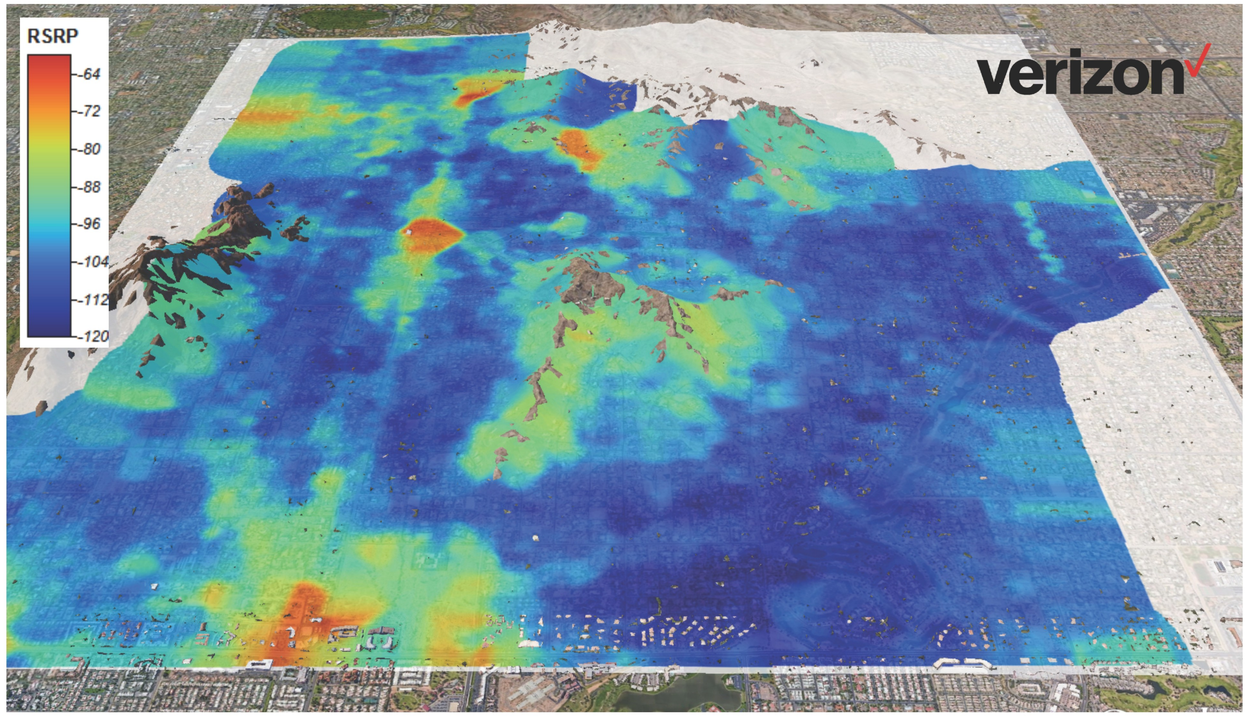
A Market Driven solution is not incompatible with a Town facilitated solution. Staff recommends that the policy makers explore both. It is recommended that the Planning Commission work on small cell and macro cell Market Driven solutions via a zoning code rewrite guided by a statement of direction from the Town Council. Further, staff recommends, the Town Council explore a town facilitated macro cell solution as such a solution likely involves Town ROW, ton property and policy decisions. A discussion of these options and solicitation of public feedback will round out the meeting.

BUDGETARY IMPACT:
None at this time.

ATTACHMENT(S):
Ghost Networks Carrier Coverage Analysis

File #: 17-177

Small Cell Policy Priorities
PWSF Options Matrix
Dana Kully 5thGenWireless Email
Power Point Presentation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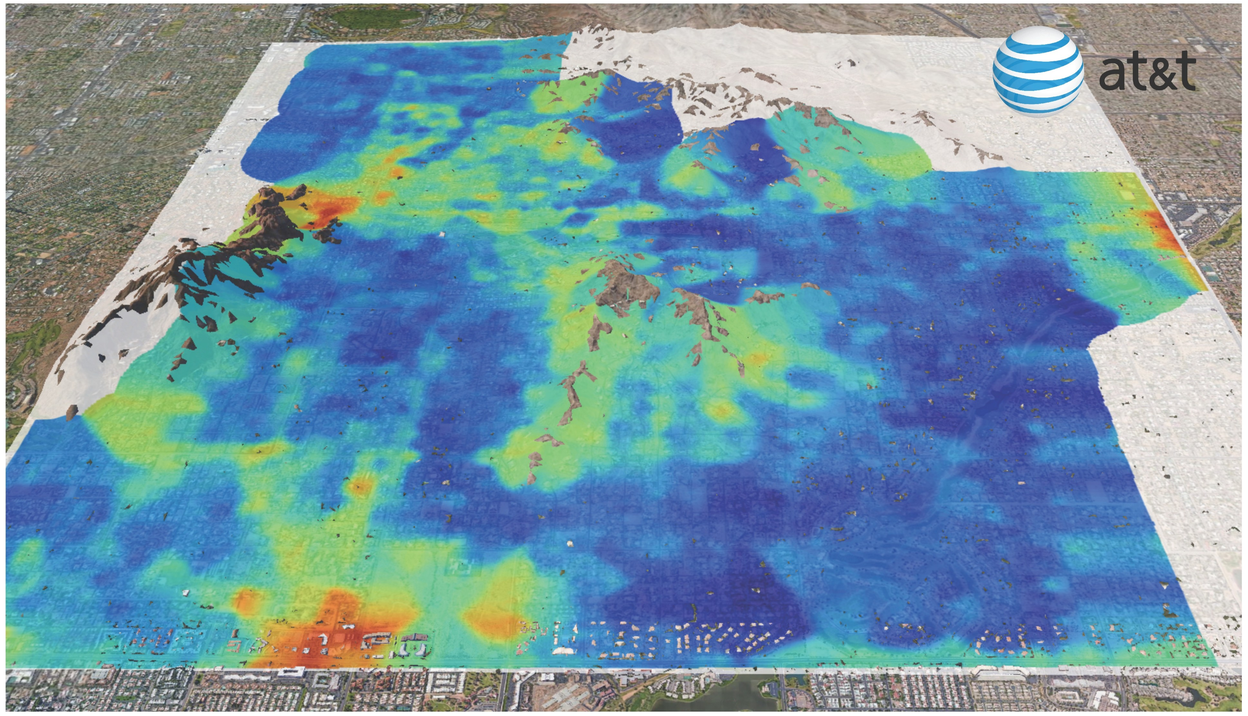
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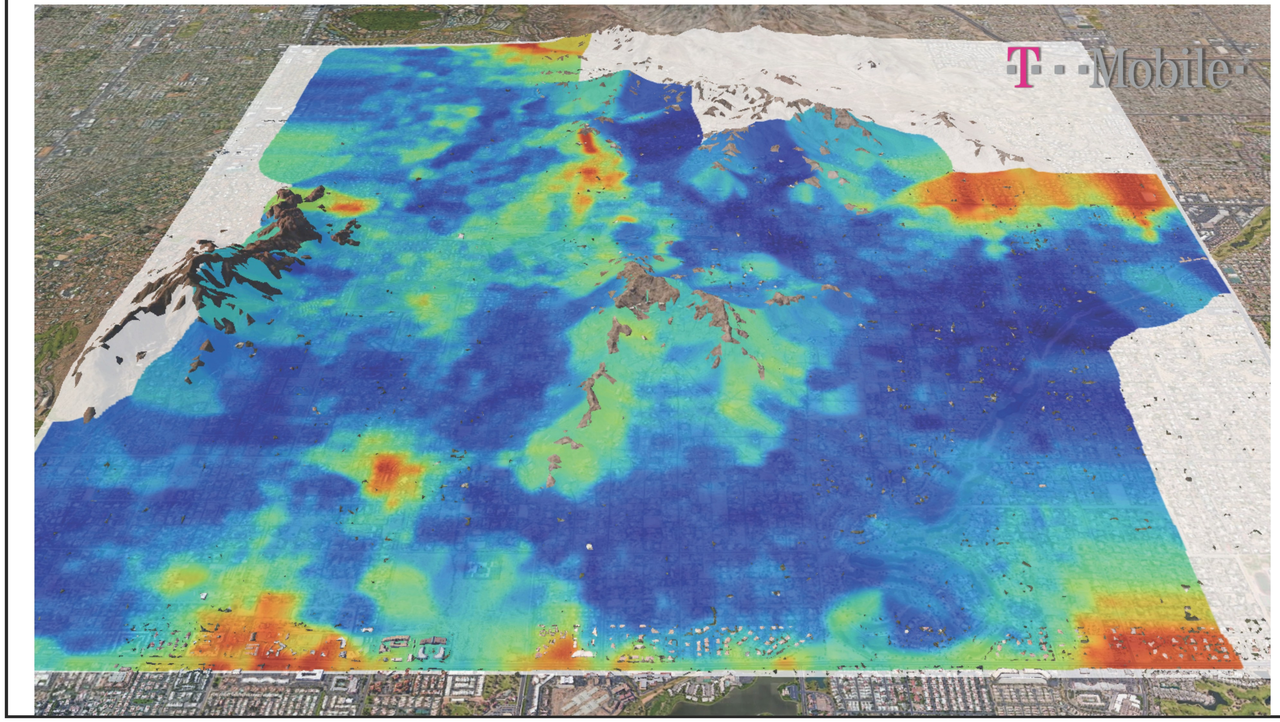
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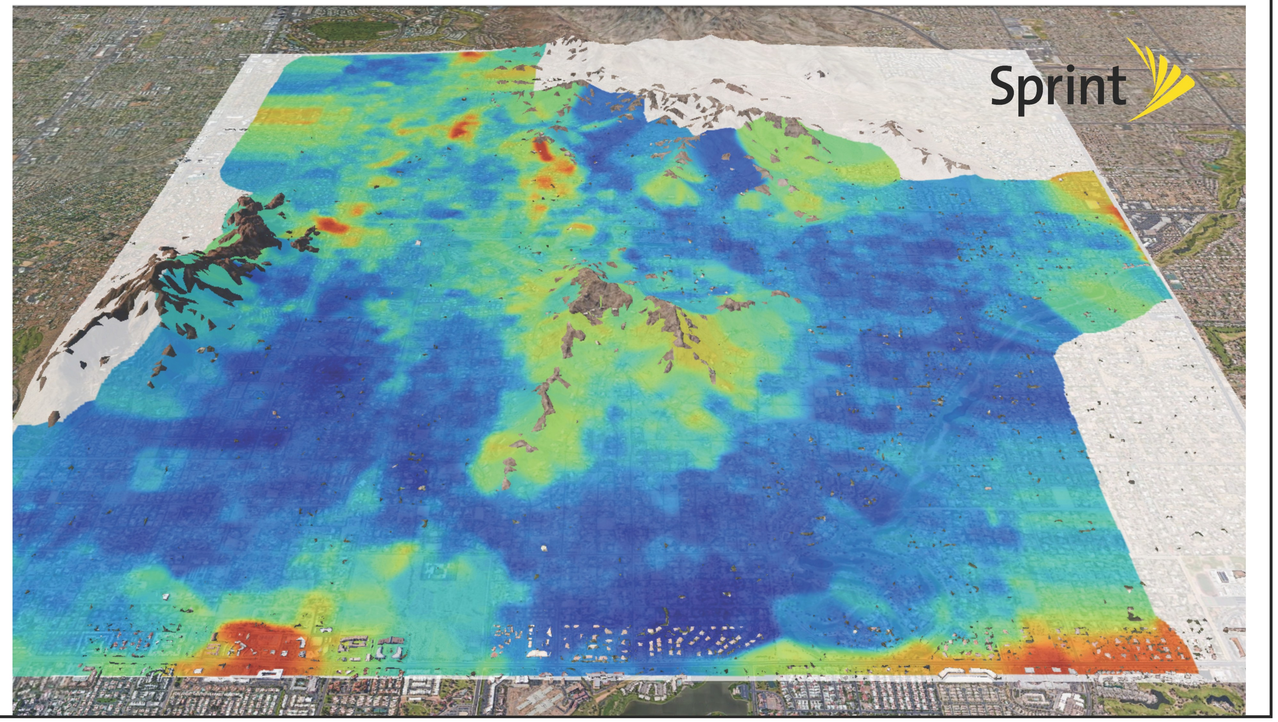
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PWSF OPTION MATRIX

Option	Coverage Area	Pole Height	Aesthetic	RF/Distance	Co-location	Cost
Triangle Pole (Macro) Antennas (aka – Lattice tower)	1-2 miles, good coverage & building penetration. These are typically higher power and above clutter.	60'+	Poor	RF drops quickly. RF mitigated by height, distance and obstructions	All carriers welcome however each carrier gets a different height which affect coverage.	~$300,000/Pole Monopole is least expensive option
Mono Palm, Eucalyptus, Pine, Flagpole/ Macro	1-2 miles	45'+	Attempted camouflage	RF drops quickly. RF mitigated by height, distance and obstructions	Multi-carrier solution, can be limited by camo. Carriers on diff heights	$400,000-$600,000;
Crown O-DAS in Faux Cactus	400', poor building penetration. Requires many nodes to cover PV	20-30'. Can be placed in higher nodes.	Excellent	Power mitigates RF distance. RF drops quickly. RF mitigated by height, distance and obstructions	All carriers welcome. EWS feel its unlikely more carriers will join.	~$30,000-$50,000/node
Roof Mount Macro Site	½ mile	~24' since max roof height in PV unless permitted in SUP	Excellent	RF drops quickly. RF mitigated by height, distance and obstructions	Limited. Depends on strength and size of roof.	Varies, ~$100,000
Traffic Light, light pole or stand-alone pole (aka small cell when micro)	400'-600' Requires approximately 30-50 nodes to cover PV	30-50'	Decent if put antenna and radio in cylinder. Even better if cylinder matches diameter of pole.	RF drops quickly. RF mitigated by height, distance and obstructions	Generally a single carrier solution. One per pole	$30,00-$80,000 per pole
Strand Mount Micro	400'	Height of existing cable strand	Not camouflaged but small and discreet	RF drops quickly. RF mitigated by height, distance and obstructions	?	$10,000 per box

Small Cell Policy Priorities
February 9, 2017

In the creation of any legislation, there is a great deal of debate on various policy issues. The proposed small cell bills have multiple policy issues. This list is intended to identify which policies are most important and least important to the Paradise Valley Town Council. Knowing this priority order will help those involved in lobbying determine which things to hold firm on and which things to compromise.

1. ROW Location – The ability to manage where and how much space small cell infrastructure will take.
2. New Poles – The ability to limit the placement of new street light poles in order to facilitate small cell infrastructure.
3. Pole configuration
   - Height – Ability to manage how high (above an existing pole or in total) a small cell tower may be. This might also include the height of the equipment cabinet.
   - Size – The ability to regulate the diameter of the tower, the number of pieces of equipment on the tower, and the square footage of the equipment cabinet.
   - Aesthetics – The ability to decide what is acceptable camouflage and/or related design standards. This would include screening of ground level infrastructure/equipment cabinets.
4. Administration and Permit Process – The ability to control who reviews and how much time is allowed to review an application. Does it become entirely administrative (staff) or partially legislative with the Planning Commission on a conditional use permit (CUP).
   - Master License Agreements – Ability to contract with carriers or third party tower companies to voluntarily agree to all of these policy issues that may be more stringent than state prescribed standards.
   - Indemnification – The ability to require indemnification from carriers with infrastructure located in Town ROW or on Town poles from damage caused by them, vehicles, or other impacts.
   - Scope – Limit this legislation to small cell and distributed antenna systems (DAS) but not include macro antenna infrastructure.
5. Fees – The ability to manage the fee to be paid to the Town for use of its public ROW. This also includes the concern in forcing existing contractually agreed upon fees to be reduced to statutorily determined levels.

From:	Kevin Burke
To:	Kevin Burke
Cc:	Kevin Burke
Subject:	FW: Cell Phones
Date:	Friday, May 12, 2017 1:05:11 PM

On May 3, 2017, at 5:39 PM, Dayna Kully <dayna@5thgenwireless.com<mailto:dayna@5thgenwireless.com>> wrote:

Hello Kevin,

Right now, as I understand it, the technology planned for the TPV Towers is 4G. The next Generation of technology is 5G and that's expected in 2020. It's already being discussed and committed to by the major carriers in the US. I included a few articles below. The biggest implication is that the towers to support 5G will need to be denser than those for 4G. It's not exactly clear how this will impact each carrier but it's a fair question...

So, 5G is one technology that you'll definitely need to contend with. The other is potentially the convergence of WI-Fi and Cellular (100% IP, which means 4G LTE +). The roadmap for convergence is being driven by the WBA (Wireless Broadband Alliance) with a standard called HotSpot2.0 (r2). The next iteration of the standard will converge cellular and Wi-Fii. The current HotSpot2.0 standard really makes Wi-Fi look like cellular (roaming between Wi-Fi networks in a manner similar to how cellular behaves today .... No need to re-authenticate, automatically connect and freely roam onto member networks, etc.). Smart Cities are endorsing this technology. San Jose, CA; NYC (with LinkNYC), etc. Not sure what impact this will have on Cell Towers per se but if the TPV has any outdoor Wi-Fi planned, you may want to take into consideration the ability to offload cellular to Wi-Fi to reduce dependency on Cellular. BTW, HotSpot2.0 is SECURE Wi-Fi from the device so there are some real advantages vs. what we know today as best efforts Wi-Fi which is inherently unsecure.

https://insidetowers.com/5g/

http://www.cio.com/article/3117705/cellular-networks/5g-could-require-cell-towers-on-every-street-corner.html

http://www.telecomramblings.com/2016/04/the-future-of-cell-towers-could-advancements-in-cellular-technology-make-cell-towers-as-we-know-them-obsolete/

Not sure if this helps or not but I would be asking the carriers and the tower companies some tough questions and asking for some guarantees for technology refresh as part of your agreements.

Cheer,

D

From: Kevin Burke [mailto:kburke@paradisevalleyaz.gov]
Sent: Wednesday, May 03, 2017 2:51 PM
To: Dayna Kully <dayna@5thgenwireless.com<mailto:dayna@5thgenwireless.com>>
Subject: Cell Phones

Dayna,
I hope this email finds you well. We are continuing our discussion regarding cell services with the Council. I had one of the Councilmember ask me a question that I thought was right up your ally. Any ideas on how to answer this?

* Staff should be prepared to let Council know how long the existing technology for cell towers will (or is estimated to) be relevant. What new technology is coming and how that will effect the current cell towers in the Town.

Any ideas? Thanks

Kevin Burke
Town Manager
Town of Paradise Valley
6401 E. Lincoln Drive
Paradise Valley, AZ 85253
(480) 348-3690

TOWN OF PARADISE VALLEY

CELL SERVICE IN PARADISE VALLEY

Agenda

- Framework
- History
- New State Statute
- Solutions
- Next Steps

Purpose for tonight's meeting

- Framework
- Share information learned to date
- Provide update on State legislation
- Identify possible solutions
- Resolve process questions and degree of Planning Commission discretion
- Hear public feedback
- Hear Town Council and Planning Commission feedback

Framework

Problem

- Poor cell phone coverage in Paradise Valley

Reason

- Lack of cellular infrastructure

Solution

- Increase or improve cell phone infrastructure without sacrificing aesthetics

History

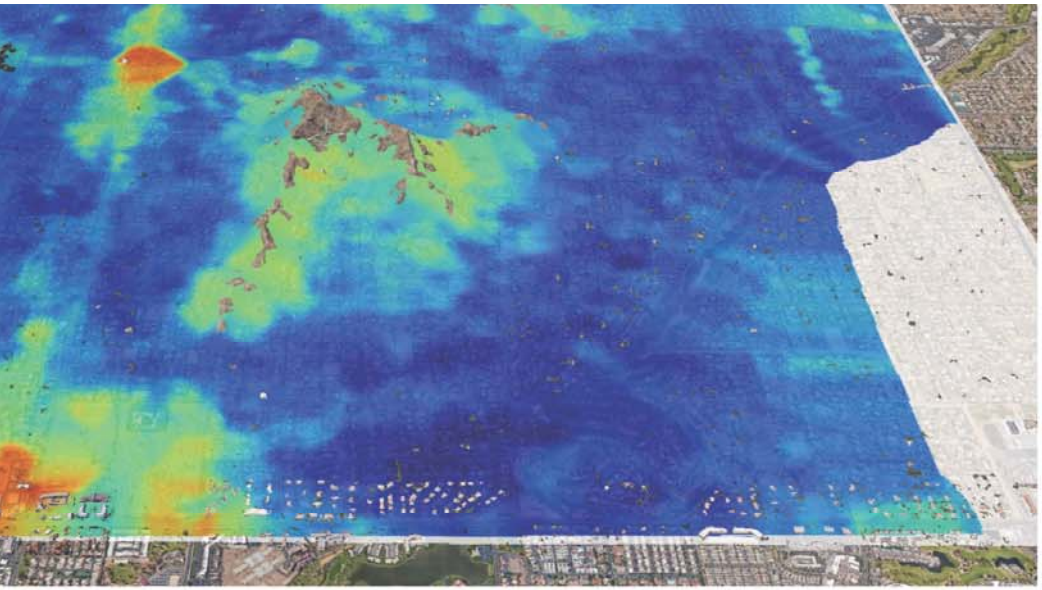
January 2014 Quality of Life Initiative

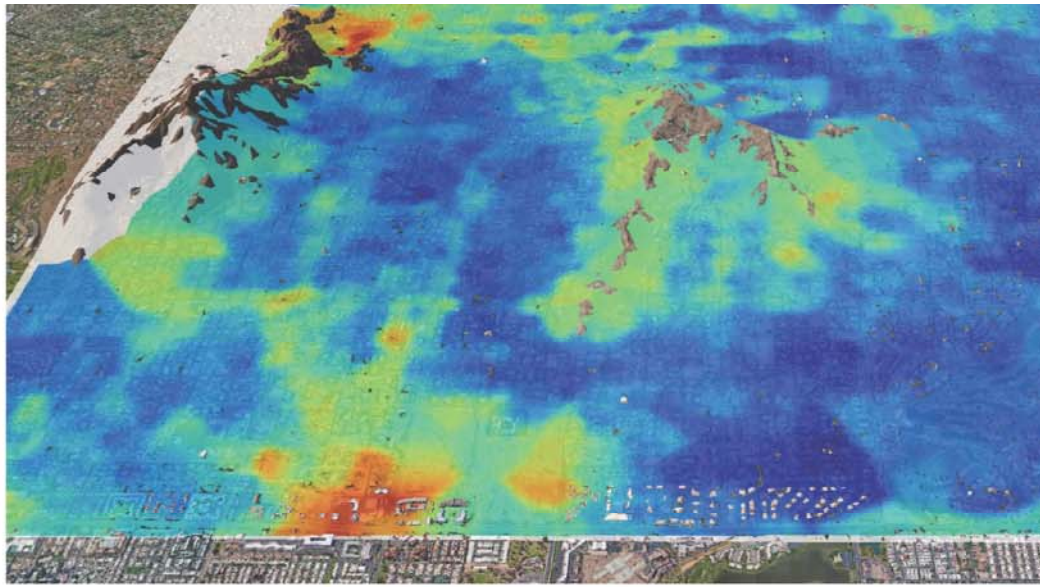
Mayor and Manager met with stakeholders

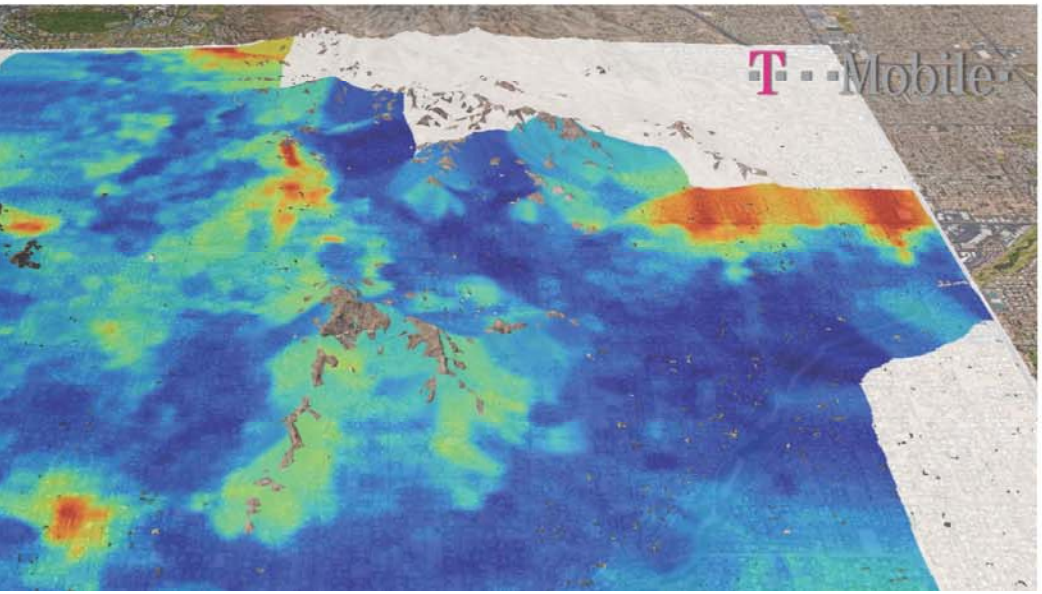
- Verizon, AT&T, Ghost Networks, Engineering Wireless Services, Ulti-Mobile, Coal Creek, 5thGenWireless

Ghost Networks provided greatest level of detail of frequencies and coverages

- Noted quickest and cheapest solution is three 60’ macro towers that could accommodate all four carriers



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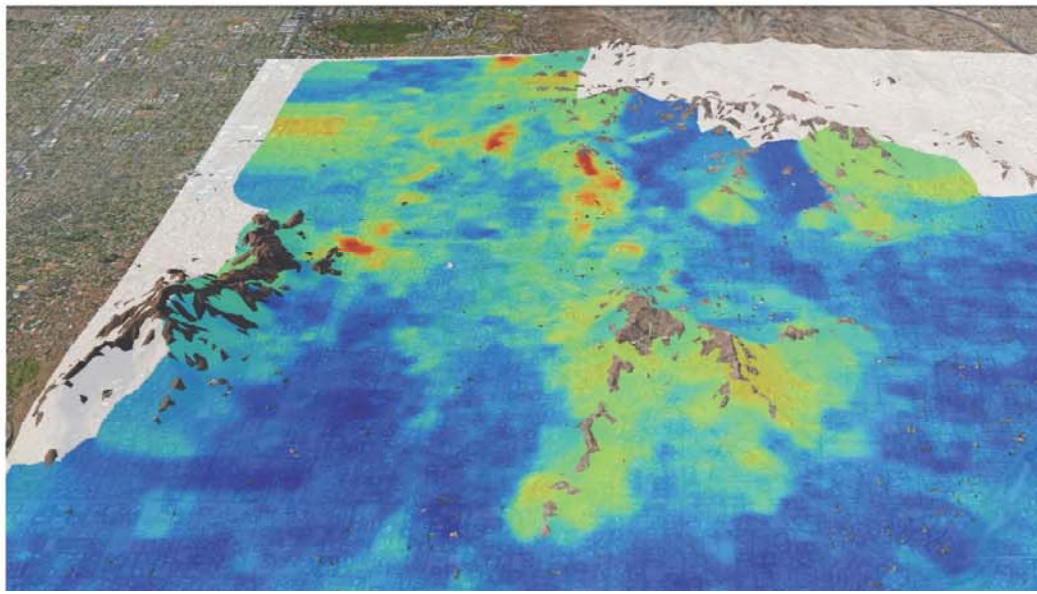

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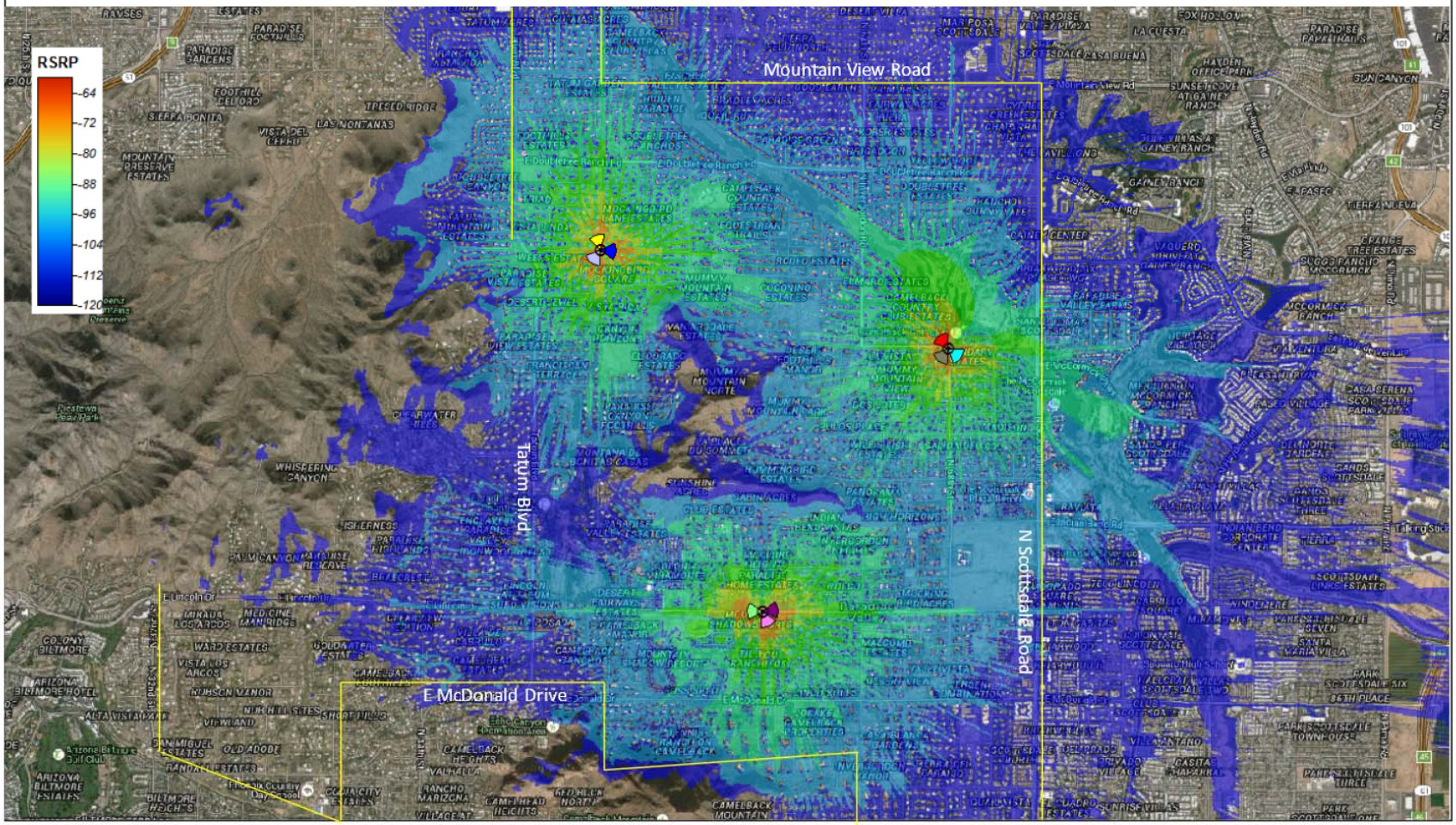
City of Paradise Valley AZ Coverage Analysis Report 6_21_16.pdf Kevin Burke Download

Design – RSRP/1900MHz/MIMO 2x2/60 W/5MHz/50ft



Ghost Networks, LLC
61 Columbia – Suite 200
Aliso Viejo, CA 92656
Phone: 866-GHOST-61
www.ghostnetworks.net

paradise valley AZ

Project Name and Address

Paradise Valley
Citywide Wireless Coverage Improvement Project
Paradise Valley, Arizona

No.	Revision / Issue	Date

Designer: KNM
Date: 5/30/16
Scale: NTS
Sheet: D1

History

Ghost Networks provided greatest level of detail of frequencies and coverages

- Noted quickest and cheapest solution is three 60’ macro towers that could accommodate all four carriers

November 2016 Manager presented to Planning Commission

- Plan to bring back comparison chart in February with help from Ken Clark (EWS)
- Never presented due to focus on State legislation

Option	Coverage Area	Pole Height	Aesthetic	RF/Distance	Co-location	Cost
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History

January 2017 Representative Weninger introduced HB 2365

- Preempted cities and town's ability to regulate small cell antennae in the right of way
- Council developed policy priority sheet to guide negotiations

Small Cell Policy Priorities

Manage Right-of-Way Locations

- The ability to manage where and how much space the infrastructure will take

Manage New Poles

- The ability to limit the placement of new poles in order to facilitate small cell infrastructure

Manage Pole Configuration

- Height, size, and aesthetics

Administration and Permit Process

- Control who reviews and how much time is allowed. Master License Agreements, Indemnification

Fees

New State Law – Rights of Way

- Applies to "activities of a wireless provider in the right-of-way"
  - Current laws regarding private property unchanged
- Municipality **must approve** small wireless facilities on new poles or modification of existing utility poles, ***including light poles and traffic signals,*** unless:
  - Height exceeds greater of 10' higher than an existing pole (max 50') or 40'
  - Fails to comply with municipal requirements related to ***objective design standards and reasonable stealth and concealment requirements***
  - Fails to comply with ***undergrounding requirements*** that prohibit installation or modification of poles without prior approval
    - Municipality MUST have a review process to address such requests
- Macro cell monopoles subject to zoning requirements

New State Law - Small Cells

- Small cell bill doesn't limit ROW use to "utilities"
  - Cell carriers – direct access to ROW
  - Modify zoning ordinance
    - Account for new mandated uses
    - Allow applications by wireless providers
  - **Develop "objective design standards and reasonable stealth and concealment requirements" for new poles, pole attachments, and collocations**
  - Develop quick SUP or other process for new (concealed) poles in ROW
- Equipment Size
  - 6 cu.ft. on pole
  - 28 cu.ft. on ground
  - Unless stealth, concealment and undergrounding standards

New State Law - Macro Cells

- Height
  - State statute defines it as over 40’ or exceed 10’ in height above tallest existing pole
- Pole Diameter
  - State statute has a maximum diameter of 40 inches.
- Spacing
  - State statute prohibits Town from setting minimum spacing requirements
  - Current ordinance requires spacing of 200’ between PWSF and any residential structure. May be waived
  - Finding PWSF macro sites on SUP sites difficult given 200’ rule
  - Modify to reflect more typical municipal standards. E.g. “fall zone”

New State Law - Fees

- Annual license for ROW limited to $50/pole/year
- Application fee limited to $750
- Consolidated application limited to $100 for first 25; $50 for each thereafter
- Rezoning application fee limited to $1,000 (macro cell in ROW)

New State Law – Mandatory Timelines

<u>Small Cell</u>

- Time to review application for completeness: 20 days
  - Deemed complete if no municipal response by date
- Time to approve or deny application: 75 days
  - Deemed approved if no municipal response by date
- Applicant has 180 days to construct after approval and permit

<u>Macro Cell</u>

- Time to review application for completeness: 30 days
  - Deemed complete if no municipal response by date
- Time to approve or deny application: 150 days
  - Deemed approved if no municipal response by date

Key Question

- The Town must rewrite the Zoning Code Chapter on Personal Wireless Service Facilities (PWSF) to comply with the new state law

- In crafting ***objective design standards and reasonable stealth and concealment requirements,*** *does the Planning Commission and Council have any specific standards they want incorporated?*

Staff Suggested **Objective Design Standards**

- New Small Cell
  - Faux Cactus no taller than 24 feet.
    - Equipment must be underground; or
    - Process for approve concealment less than entirely underground
      - E.g. Apply to PC with concealment plan
  - Other designs must apply
- Existing Small Cell
  - Traffic signal or light pole mount
    - No taller than 40’
    - All equip on pole in an 18” cylinder
    - Match pole color
    - Ground equipment buried or process

Staff Suggested **Objective Design Standards**

- New Macros Cells
  - Stealth and concealment required
  - Height limited to max building height permitted by code or SUP
  - Height limit may be adjusted by Council through application
  - Equipment buried underground or apply for alternative concealment

Current code dispute

- 2007 interpretation: height may be balanced by aesthetics at discretion of Planning Commission
- Some have expressed disagreement with interpretation
- Town Attorney: "*Although the provisions of Section 1204(5) of the Zoning Ordinance might be read so as to support granting to the Planning Commission the authority to approve the installation of a stand-alone monopole that is taller than structures on a particular SUP property (typically a disguised or camouflaged monopole), the Town Attorney does not see such an interpretation as the best or recommended interpretation. However, such an interpretation was apparently made at one point in the past such that a stand-alone monopalm application was submitted to the Planning Commission for review*."

Solutions

- Review options
- Key questions
- Discussion

Key Questions

- If Town policy makers could choose, would they rather see a small cell system or a macro system?
- Would policy makers prefer a bright line on cell tower heights or Planning Commission discretion on heights versus aesthetics?
  - How should Section 1204(5) be interpreted?
- Would policy makers prefer Planning Commission have discretion to work with applicant on a site specific solution?
  - Design and concealment standards must be in place first

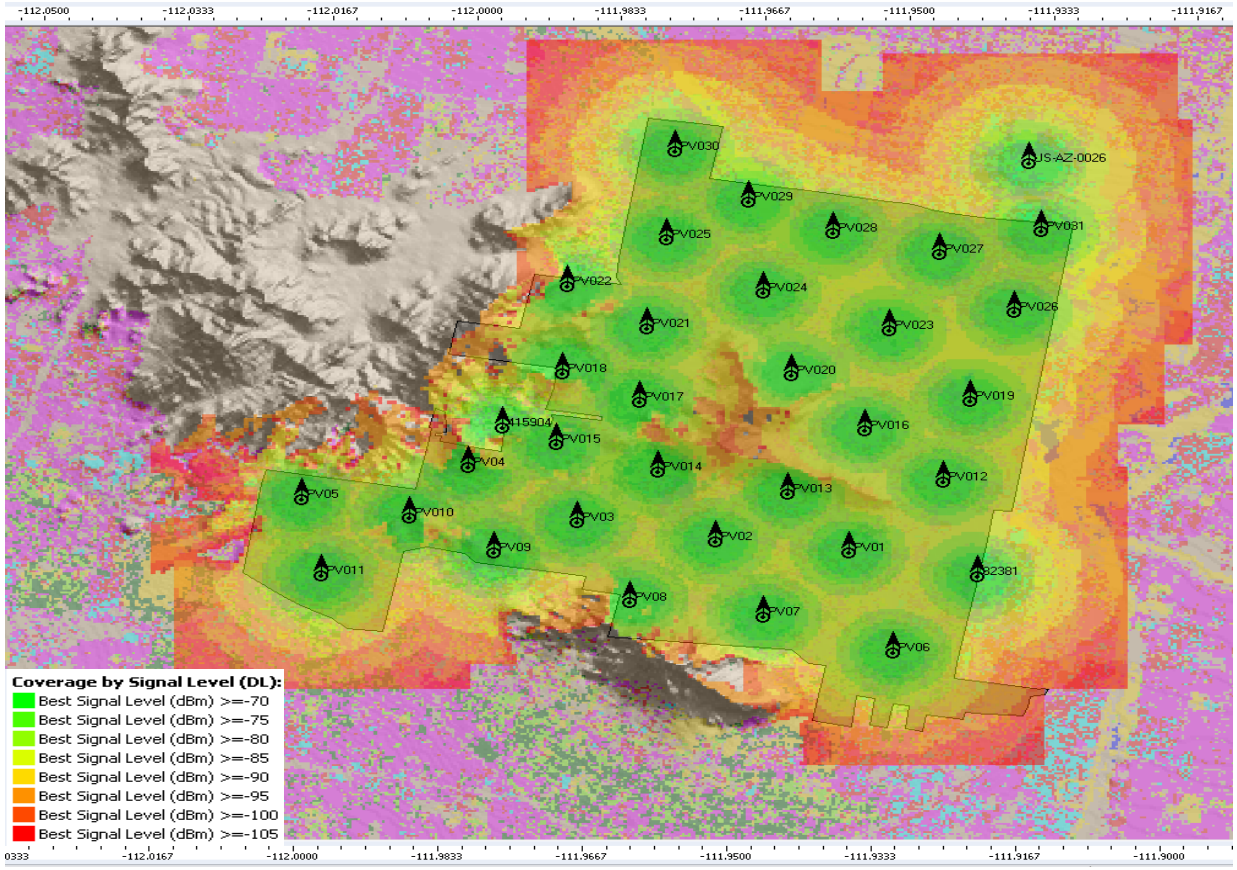
Small Cell Considerations

- Market desires poles 30’-40’; cactus more unrealistic at that height
- PV coverage would require between 30 and 50 poles
- Would require fiber between poles
- Carriers prefer to place on existing traffic lights and street lights
  - Not prevalent in PV neighborhood
- More structure likely in ROW

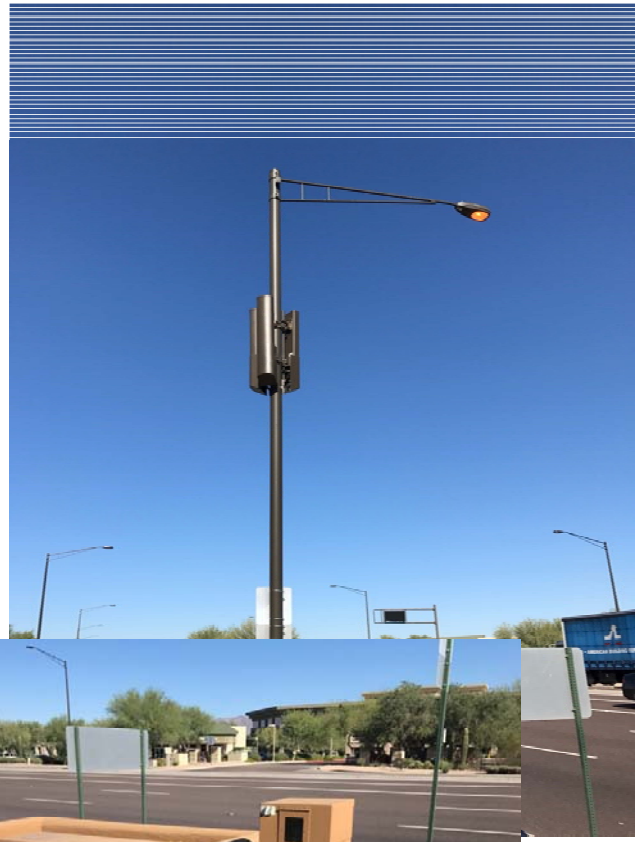
RF Layout of Paradise Valley

- Approximately 31-35
  - poles requires at 35’ height.

- Zayo has existing Fiber running parallel and through part of Paradise Valley.



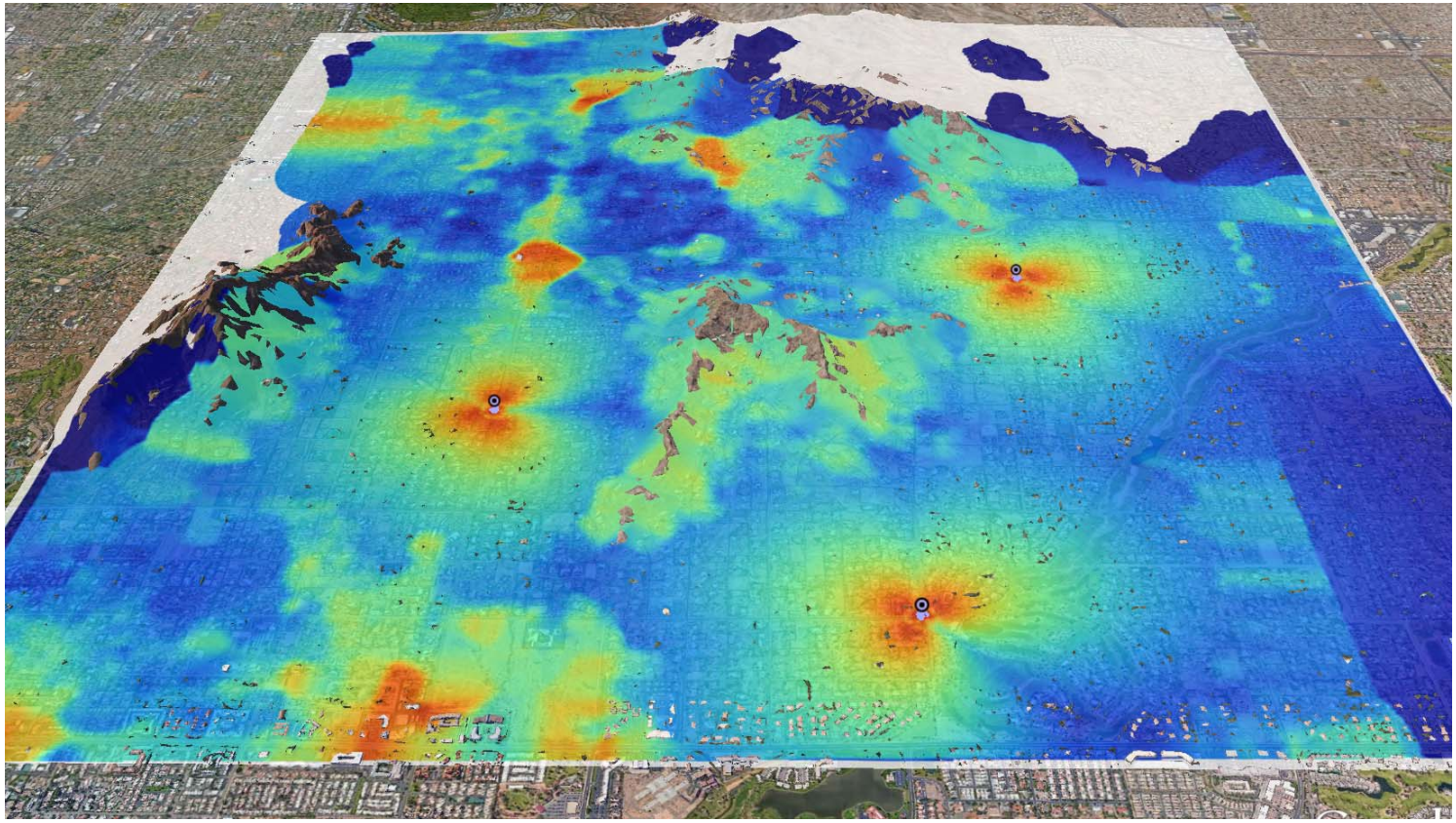
Small Cell Images



Macro Considerations

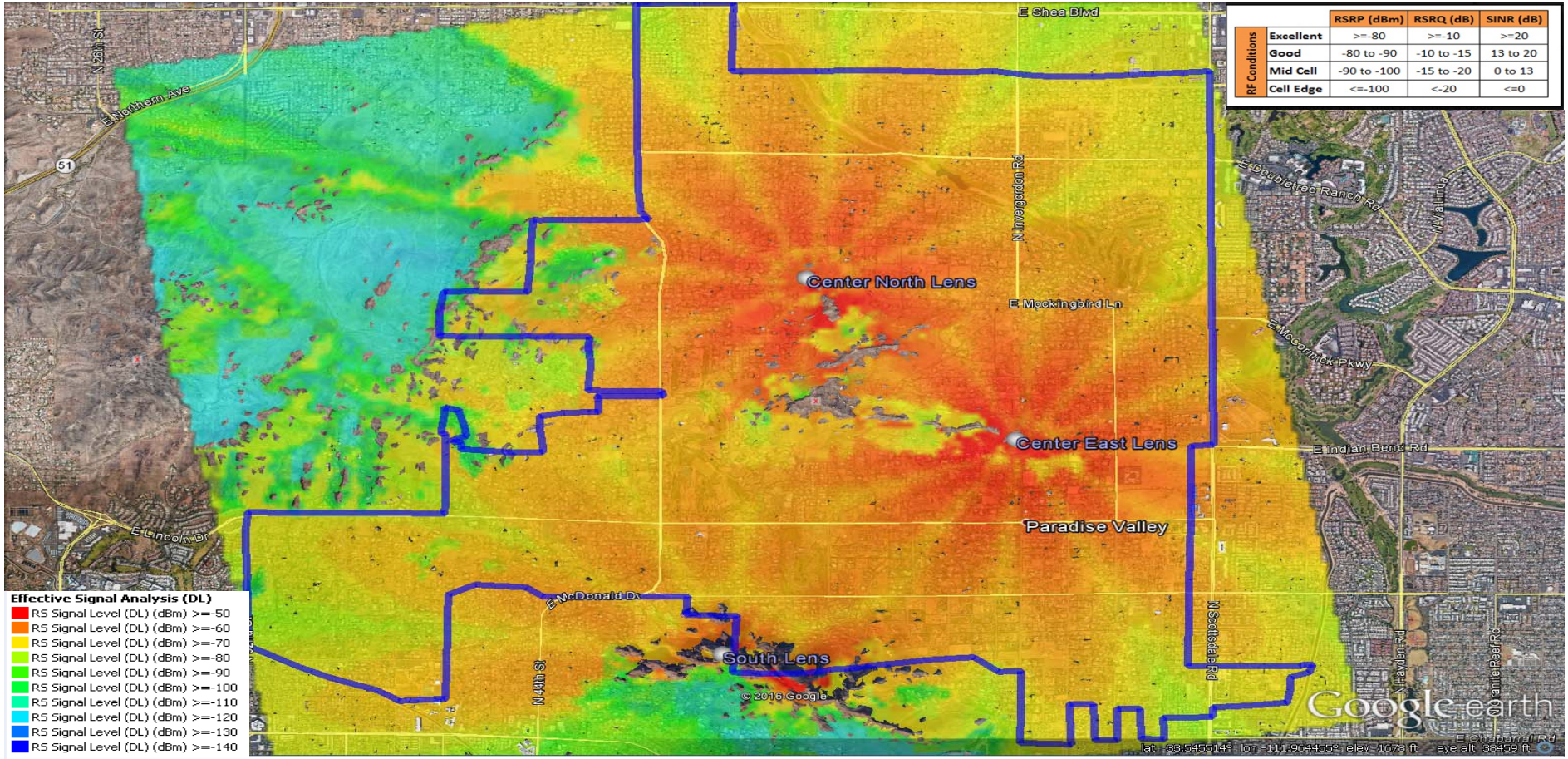
- Fewer sites
- Aesthetic issues
- Two options brought forward to address aesthetic
  - Mono eucalyptus
  - Mountain side rocks

Macro Cell Tower Solution



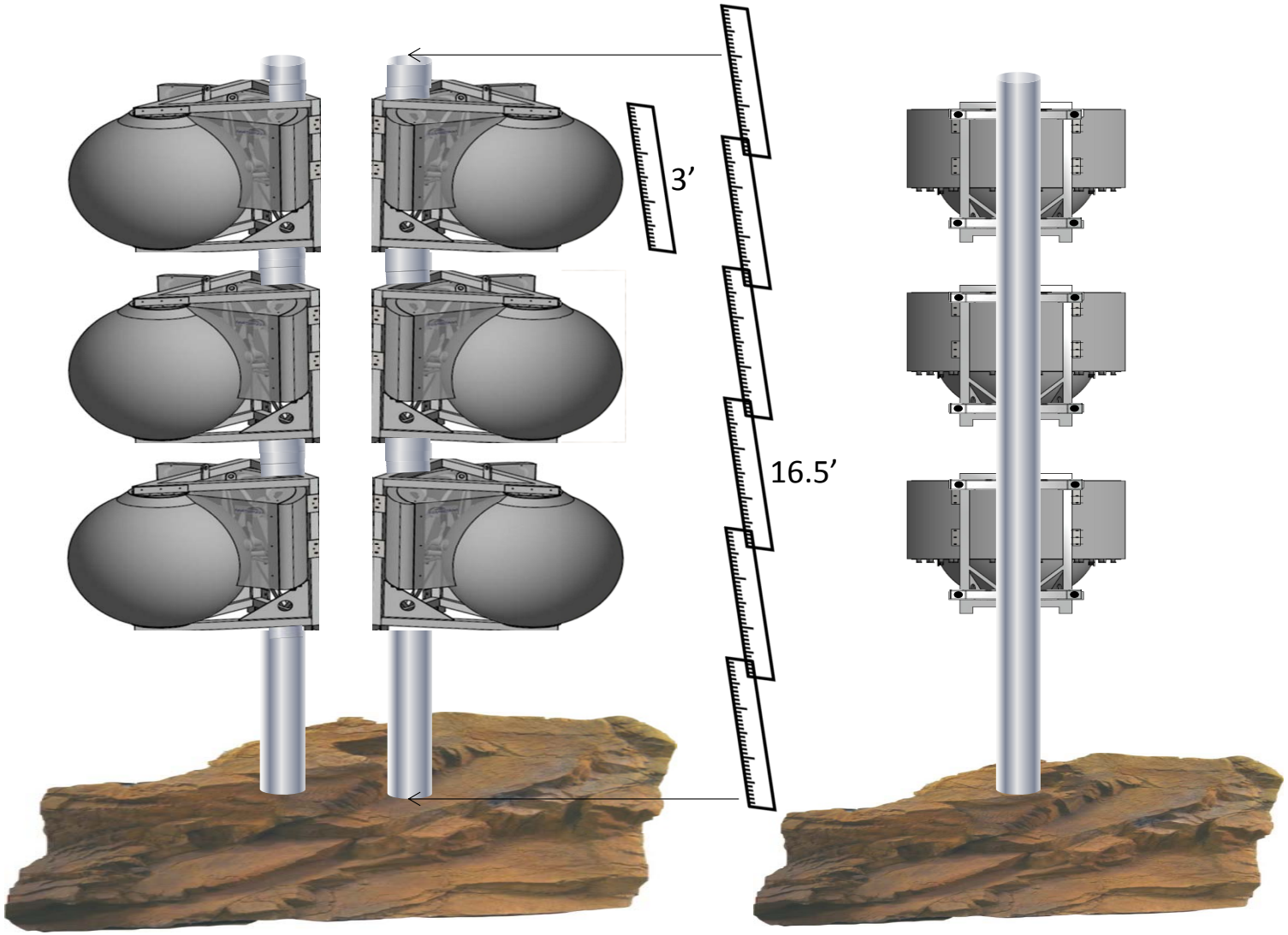
Mono-Eucalyptus, Palm, Pine

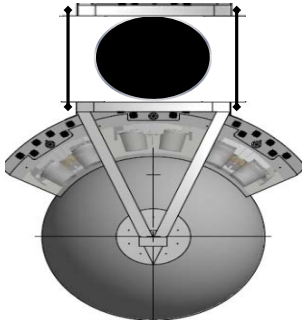
Paradise Valley Multi Beam Solution



RF Conditions	RSRP (dBm)	RSRQ (dB)	SINR (dB)
Excellent	>=-80	>=-10	>=20
Good	-80 to -90	-10 to -15	13 to 20
Mid Cell	-90 to -100	-15 to -20	0 to 13
Cell Edge	<=-100	<-20	<=0

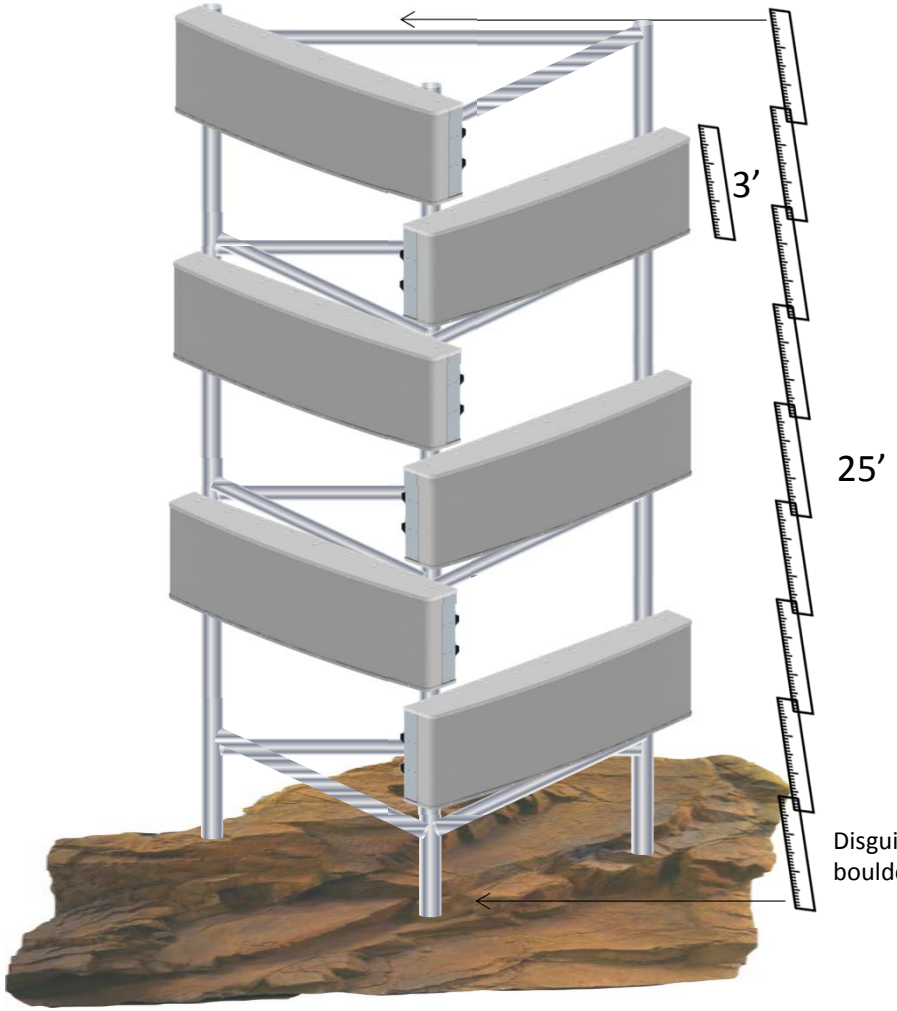
3’ Lens Multi-beam/Multi Tenant Antennas for Paradise Valley





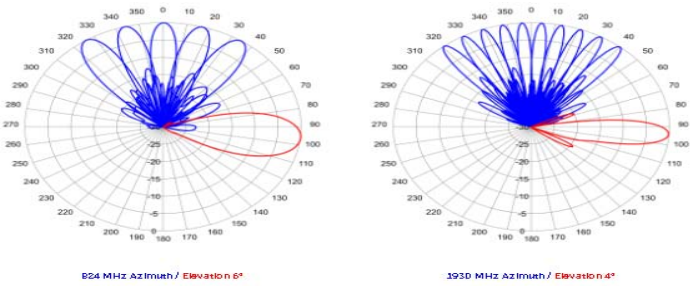
Disguised by RF Transparent artificial boulder

3’x7’ Panel Multi-beam/Multi Tenant Antennas for Paradise Valley



Disguised by RF Transparent artificial boulder

- Five low band beams optimized for maximum throughput over frequency bands (698-896 MHz); Ten high band beams optimized for maximum throughput over frequency bands (1710-2360 MHz)
- Three foot (1.0 m), single panel, fifteen beam design without mount changes
- Dual +/- 45° cross-polarization for each beam pair
- Separate beams support 5 low band and 10 high-band sub-sectors
- Simultaneous High Band PCS 1900 MHz, AWS 1710/2360, WCS 2300 MHz, and Low Band LTE 700 MHz, SMR 850 MHz and Cellular 850 Coverage.
- Enables efficient evolution of wireless networks.
- Increases site capacity through high order sectorization.
- Avoid carrier-adds and building of new capacity sites.
- Boosts data throughput by lowering interference.
- Patented beam shaping technology maximizes coverage
- Optimized beam crossover and spacing for maximum throughput
- 7-16 DIN Female or 4.3-10 connector options



Multi-Beam Solution

Market Driven or Town Facilitated?

Both

- Carriers have right to apply for permit
- Must have a code that manages permit requests consistent with law
- Market drive = code rewriting

Market Driven or Town Facilitated?

- If Town facilitates solution, does it relieve market pressure to build more towers?
  - Use of ROW to locate sites
  - Use of Town owned property to locate sites
  - Working with specific SUP's in strategic locations to locate sites

What are other communities doing?

- Very few have the aesthetic issues of Paradise Valley
- State law was more an issue over control of the ROW.
- Most OK with placing on existing poles and have an extensive inventory of them
- Equipment in ROW is larger concern
- Recruitment of carriers varies

Recommendations

Planning Commission: focus on rewriting Zoning Code with an SOD from Council

- SOD – Right of Way vs. private land requirements (e.g. SUP)
- SOD – must comply with state and federal laws
- SOD – macro cell bright line on heights or discretion to PC/Council if aesthetics addressed?
- SOD – Any opinion on 200' radius. Seems irrelevant and perhaps no longer enforceable
- SOD –aesthetic set in code (Aesthetics consistent or better than AZ Municipalities Telecomm Group Design Standards)

Council: focus on Town Facilitated Solutions

- Pursue ATS Multi-Beam type solution
- Pursue macro cell site solution at strategic locations
- Other solutions or combo

Public Input

Questions