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January 8, 2020

VIA EMAIL

Chair Daniel Howard
Vice Chair David Simons
Commissioners Sue Harrison,
John Howe, Carol Weiss,
Ken Olevson and Ken Rheaume
Planning Commission
City of Sunnyvale
456 West Olive Avenue
Sunnyvale, California 94086

Re: Appeal of Verizon Wireless Application, File No. 2019-7756
Small Cell Facility, Public Right-of-Way near 574 Fort Laramie Drive
Planning Commission Agenda, January 13, 2020

Dear Chair Howard, Vice Chair Simons and Commissioners:

We write on behalf of Verizon Wireless to ask that you uphold the approval of the Community Development Director and deny the appeal filed by Chong Wang (“Appellant”) of Verizon Wireless’s proposed small cell facility on an replacement utility pole (the “Approved Facility”). Verizon Wireless’s design poses minimal visual impact on existing utility infrastructure, and it complies with the City Council’s design criteria for right-of-way facilities. Appellant’s objections to the Approved Facility raise no conflict with those design criteria. The Approved Facility will enhance Verizon Wireless network capacity for residents, visitors and emergency service personnel in the vicinity. We strongly encourage you to reject the appeal and approve the Approved Facility.

I. The Project

The Approved Facility has been thoughtfully designed to minimize any impact to the adjacent neighborhood. Verizon Wireless proposes to place a narrow two-foot tall canister antenna on top of a wood utility pole. The utility pole will be replaced to ensure its structural capacity. A height increase of 11 feet 3 inches, including the two-foot canister antenna, is necessary to elevate the antenna six feet above electric supply conductors to comply with California Public Utilities Commission General Order 95. All associated network equipment will be concealed in a small ground-mounted cabinet only

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3.5 feet in height, placed next to the sidewalk 36 feet north of the utility pole. Utilities connecting the cabinet to the pole will be routed underground.

Photosimulations of the Approved Facility are attached as Exhibit A. A report by RF Global Safety Consultants, attached as Exhibit B, confirms that radio frequency exposure from the Approved Facility will fully comply with Federal Communications Commission (“FCC”) guidelines.

Community support for small cells in Sunnyvale is clear in the 418 text messages of support received as documented in a letter from a Verizon Wireless Director attached as Exhibit C.

II. The Approved Facility Fully Complies with All Code Requirements and Council Design Criteria.

As confirmed in the Director’s approval, the Approved Facility satisfies all design review requirements for a right-of-way facility. In fact, due to its location and compliant design, the Approved Facility was eligible for administrative approval by the Director. Code § 19.54.160(b).

The Approved Facility also complies with the *Design Criteria for Processing Wireless Communication Facilities in the Public Right-of-Way*, recently adopted by Council Resolution 951-19 (the “Design Criteria”). To minimize aesthetic impact, Verizon Wireless selected a utility pole flush with a shared property line, beyond any residential primary view as defined. Design Criteria §§ II(5), IV(A)(1), IV(A)(3)(b). The pole is over 100 feet from street corners, where the guidelines encourage at least 50 feet. Design Criteria § IV(A)(3)(a). The Approved Facility is not next to a driveway, and is adjacent to an established street tree that provides screening. Design Criteria §§ IV(A)(3)(c), (d). Only two feet in height, the antenna is the smallest possible to provide service, and at only 1.5 cubic feet, the antenna enclosure is one-third of the allowed volume of 4.5 cubic feet. Design Criteria §§ IV(A)(5)(a), (b). The overall height of 44 feet 11 inches is well under the 65 feet allowed. Design Criteria § IV(A)(6). No new overhead lines are needed because the utility pole already supports the necessary electric and fiber connections. Design Criteria § IV(A)(7).

During preliminary discussions, Verizon Wireless and planning staff determined that accessory equipment would best be concealed in a small ground-mounted cabinet, rather than placed on the pole, because there is ample space for a cabinet next to the sidewalk. The cabinet is only 3.5 feet in height, and the smallest possible volume to contain required radios, power units and other network gear. Design Criteria § IV(C). Placing associated equipment underground is not feasible at this location, due to the size of an equipment vault needed to accommodate network equipment, plus active cooling and dewatering equipment required underground. Excavation of a larger area to place such a vault would intrude on nearby street tree roots, which is discouraged by the Department of Public Works.

In short, Verizon Wireless's Approved Facility complies with all City regulations for wireless facilities in the right-of-way.

III. Verizon Wireless is Authorized to Place the Approved Facility in the Public Right-of-Way under State Law.

Verizon Wireless is entitled as a matter of law under California Public Utilities Code Section 7901 to install telephone equipment such as the Approved Facility "along any public road and highway," subject only to reasonable local aesthetic criteria. Verizon Wireless is a telephone corporation as defined under Public Utilities Code Section 234 to include "every corporation or person owning, controlling, operating, or managing any telephone line for compensation within this state. . . ." A telephone line includes poles, fixtures and other equipment "managed in connection with or to facilitate communication by telephone, whether such communication is had with or without the use of transmission wires." Public Utilities Code § 233.

IV. There is Substantial Evidence for Approval, and Appellant Presents No Substantial Evidence to Warrant Denial.

Under the federal Telecommunications Act, a local government's denial of a wireless facility application must be based on "substantial evidence." *See* 47 U.S.C. § 332(c)(7)(B)(iii). As interpreted under controlling federal court decisions, this means that denial of an application must be based on requirements set forth in the local code and supported by evidence in the record. *See Metro PCS, Inc. v. City and County of San Francisco*, 400 F.3d 715, 725 (9th Cir. 2005) (denial of application must be "authorized by applicable local regulations and supported by a reasonable amount of evidence"). While a local government may regulate the placement of wireless facilities based on aesthetics, mere generalized concerns or opinions about aesthetics or compatibility with a neighborhood do not constitute substantial evidence upon which a local government could deny a permit. *See City of Rancho Palos Verdes v. Abrams*, 101 Cal. App. 4th 367, 381 (2002).

As set forth above, Verizon Wireless has provided substantial evidence to show that the Approved Facility complies with all requirements for approval under the Code and Design Criteria. Among other evidence, photosimulations demonstrate the minimal impact of Verizon Wireless's antenna elevated above a replacement utility pole, with a very small ground cabinet concealing all other network equipment. Architectural drawings confirm compliance with the Design Criteria as set forth above. The report by RF Global Safety Consultants confirms that emissions from the Approved Facility will comply with FCC exposure guidelines.

In contrast, Appellant has provided no evidence – let alone the substantial evidence required by federal law – to support denial of the Approved Facility. As we explain, none of the grounds for appeal reveal any conflict with the Code or Design Criteria.

1. The City May Not Consider Concerns over Radio Frequency Emissions or Alleged Effect on Property Values.

Appellant speculates that the Approved Facility would lead to declining property values nearby, citing websites that raise alarmist concern over radio frequency emissions. However, the City may not consider concerns over the environmental effects of radio frequency emissions because the Approved Facility will comply with FCC exposure guidelines. 47 U.S.C. § 332(c)(7)(B)(iv). As confirmed by the RF Global Safety Consultants report, the maximum exposure at ground level will be only 1.29 percent – or 77 times below – the FCC’s public exposure limit.

Moreover, federal law bars efforts to circumvent preemption of health concerns through proxy concerns such as effects on property values. *See, e.g., AT&T Wireless Servs. of Cal. LLC v. City of Carlsbad*, 308 F. Supp. 2d 1148, 1159 (S.D. Cal. 2003) (in light of federal preemption, “concern over the decrease in property values may not be considered as substantial evidence if the fear of property value depreciation is based on concern over the health effects caused by RF emissions”); *Calif. RSA No. 4, d/b/a Verizon Wireless v. Madera County*, 332 F. Supp. 2d 1291, 1311 (E.D. Cal. 2003).

Some studies suggest that proximity to a wireless facility actually increases property values. For example, a 2015 RootMetrics study surveying 2,000 adults found that they “care more about cell phone reception than the quality of neighborhood schools when buying a home.” Susie Poppick, *The Surprising Thing Home Buyers Care About More than Schools*, Money.com, June 2, 2015.¹ A 2012 study by Joint Venture Silicon Valley Network, conducted with local realtors associations, found that “[i]t is quite clear from the data that the distance from a wireless facility has no apparent impact on the value or sale price of a home.” *Wireless Facilities Impact on Property Values*, Joint Venture Silicon Valley Network, November 2012, p. 5.²

Because the Approved Facility will comply with FCC exposure guidelines, this ground for appeal raises a preempted subject, and it must be dismissed.

2. Collocation Is Not Feasible for Right-of-Way Facilities.

Appellant questions why Verizon Wireless did not seek to collocate with existing wireless facilities. Appellant cites Code Section 19.54.140 which applies to private property, but is inapplicable to right-of-way facilities. As explained above, Public Utilities Code Section 7901 grants telephone corporations a statewide right to place their equipment along any right-of-way. Because of this, the City could not compel Verizon Wireless to relocate its antenna to an existing wireless facility on private property.

Within the right-of-way, wireless carriers generally do not collocate multiple facilities on the same pole. This is because of limited structural capacity and the vertical

¹ Available at: <https://money.com/buy-home-good-cell-mobile-reception/>

² Available at: <https://jointventure.org/images/stories/pdf/wireless-facilities-impact-on-property-values.pdf>

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separation required between antennas to address interference, which results in taller deployments overall. Given the numerous pole options in the right-of-way, carriers simply choose a different pole with ample space and capacity for a new facility. The Design Guidelines impose a 300-foot separation distance between right-of-way facilities to minimize any visual impact. Verizon Wireless did not identify any other wireless facilities in the right-of-way nearby.

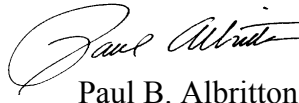
The Design Guidelines apply specifically to right-of-way facilities, and they do not impose any collocation requirements. This ground for appeal raises an irrelevant subject, and it must be dismissed.

In sum, Appellant raises no grounds for appeal that constitute substantial evidence to deny the Approved Facility. In contrast, Verizon Wireless has provided ample evidence that the Approved Facility complies with all City requirements. The appeal must be rejected.

Conclusion

Verizon Wireless has worked diligently to identify the ideal location and design for a small cell facility to serve the surrounding neighborhood. As confirmed by the Director's approval, the Approved Facility satisfies the Design Criteria for right-of-way facilities. Appellant raises no substantial evidence to contradict this approval. Ensuring reliable Verizon Wireless service in this area is critical to residents and visitors as well as emergency service personnel. We strongly encourage you to affirm the Director's approval and deny the appeal.

Very truly yours,

A handwritten signature in black ink, appearing to read "Paul Albritton", written in a cursive style.

Paul B. Albritton

cc: Rebecca Moon, Esq.
Andy Miner
Teresa Zarrin

Schedule of Exhibits

Exhibit A: Photosimulations
Exhibit B: RF Exposure Report by RF Global Safety Consultants
Exhibit C: Letter from Verizon Wireless Director Regarding 418 Text Messages of Support for Small Cells in Sunnyvale

SITE ID: SUNNYVALE_005
574 Fort Laramie Drive
Location Code: 427810
Site Coordinates: 37.343378, -122.036317

Attachment 4
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PROPOSED SITE LOCATION

Sunnyvale_005

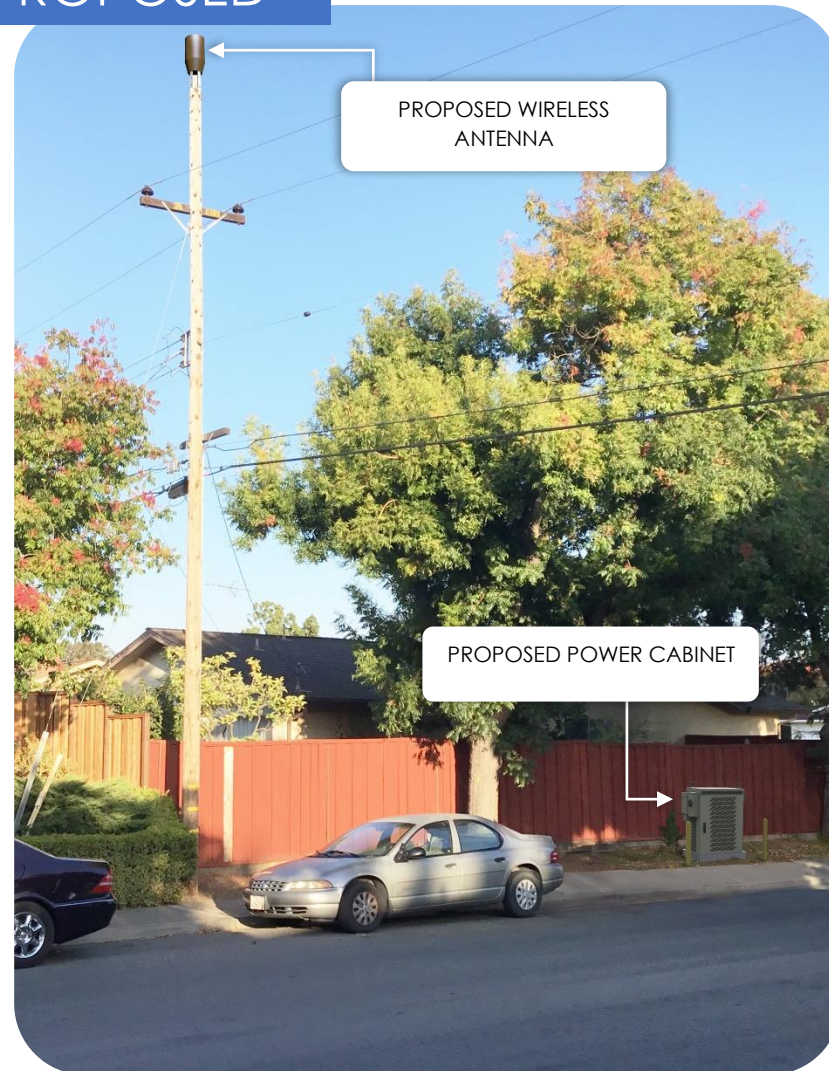


Exhibit A

EXISTING

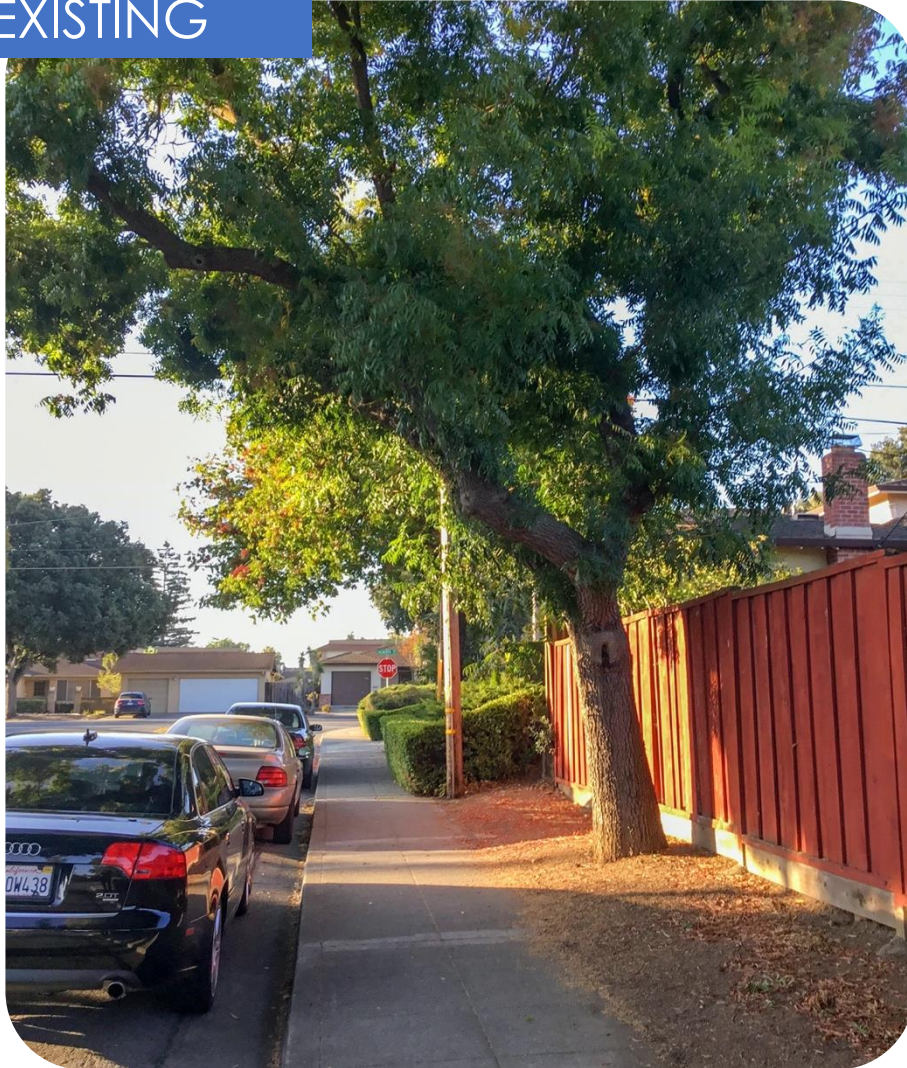


PROPOSED



View 1: Looking Northwest along Richelieu Place | Photosim produced 01/03/2020

EXISTING



PROPOSED



View 2: Looking South along Richelieu Place | Photosim produced 10/14/19



Radio Frequency Electromagnetic Energy (RF-EME) Maximum Permissible Exposure (MPE) Public Exposure Safety Report

**Verizon Wireless 4G Small Cell Site
"CA_SUNNYVALE_005"
574 FORT LARAMIE DRIVE
SUNNYVALE, California 94087
LAT:37.343378, LONG:-122.036317**

July 31, 2019



Prepared by RF GLOBAL SAFETY CONSULTANTS
California Registered Professional Engineer



Executive Summary

This report concludes that the proposed wireless 4G small cell site equipment to be installed at the aforementioned location with the specifications provided by Verizon Wireless complies with the applicable FCC- approved safety standards and guidelines for general public and occupational exposure.

General Information

In 1992, the American National Standards Institute (ANSI) published IEEE Standard C95.1-1991, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 KHz to 300 GHz.". This current publication defines "controlled" (i.e., occupational) and "uncontrolled" (i.e., public) environments, setting for the latter more restrictive exposure limits, but longer periods for time averaging.

The FCC has provided direction to the telecommunications industry on determining compliance with ANSI standards. This is presented in the Office of Engineering and Technology Bulletin No. 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields," dated August 1997. The equations given in this document are designed to yield a "worst-case" prediction of RF power densities in the near-field of an antenna.

The occupational (controlled) exposure limit is for personnel operating and maintaining the facilities small cell wireless equipment. This type of personnel should have training on the radiating equipment and will be able to disable the equipment when performing routine maintenance and replacement of equipment.

The general public (uncontrolled) exposure limit is for people who are unaware of the facilities small cell equipment and they are unfamiliar with any safety measures for being near this type of equipment.

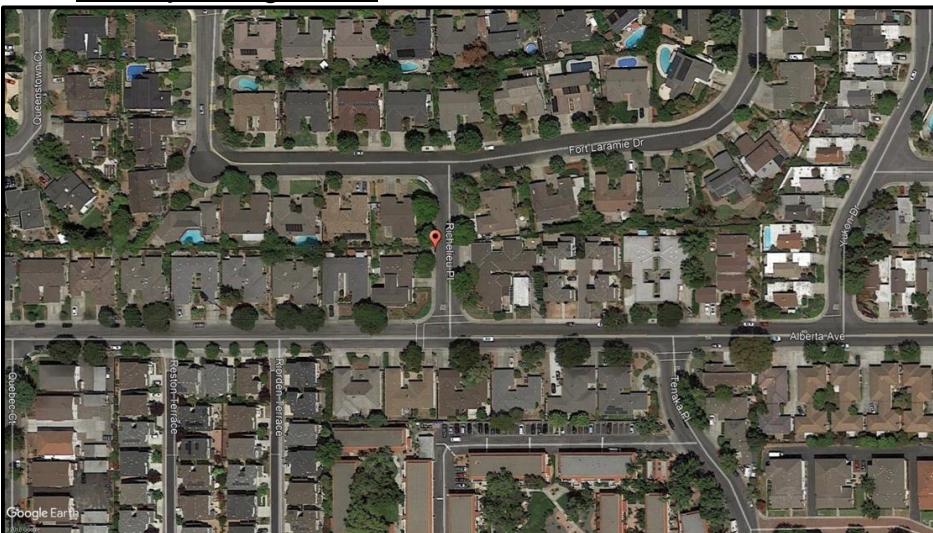
I. Introduction

Verizon Wireless is proposing to build a 4G small cell site at the location described below. This is part of the 4G Network Verizon Wireless is building nationwide. The equipment to be installed at this site will be mounted on the electric utility pole. The cell site will include a radio mounted near the base of the pole and antenna will be mounted on an extended mast on top of the utility pole. This report will determine if the proposed cell site equipment when in operation, complies with the applicable FCC and ANSI safety guidelines.

II. Proposed Site Information

The proposed site will be located in the City of Sunnyvale at aforementioned location. The equipment will be mounted on the utility pole at 44.9 feet above ground. The base station and antenna units will be mounted at the designated height and connected to the Verizon fiber network.

II.a Site Map - Google Earth



EME-RF Exposure Study, Verizon Wireless – [SITE ID: CA_SUNNYVALE_005] [LOCATION:427810]

Equipment Information

The site equipment will be comprised of base station(s) and antenna(s) mounted on a utility pole.

Base Station make and Model: Ericsson, RRU-4449 & 8843.

Operating Frequencies (MHz): 700 (LTE); 850 (LTE); 1900 (PCS); 2100 (AWS).

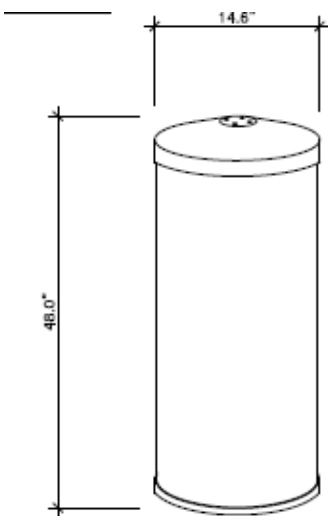
Antenna make and model: Amphenol, CUUT360X12F0Y-0.

Output Power (ERP, dBm): 700 (54.43); 850 (54.53) 1900 (56.34); 2100 (55.64).

Antenna Type: Quasi-Omnidirectional multi-port.

Unit Dimension (in), Height x Diameter: 48x14.6

Table-3 Below is a snapshot of the unit specification



IV. Theoretical Calculation of the proposed cell site exposure limits

Table IV.1

Ground Level,	% of Limit, (Highest)	Compliance Y/N	Mitigation Y/N
Occupational/ Controlled Exposure	0.28	Y	N,1
General Public/ Uncontrolled Exposure	1.29	Y	N,1

EME-RF Exposure Study, Verizon Wireless – [SITE ID: CA_SUNNYVALE_005] [LOCATION:427810]

Table IV.2

Antenna Face Level	Distance, Feet (closest)	% of limit	Compliance, Y/N	Mitigation Y/N
Occupational/ Controlled Exposure	18	85	Y	N,1
General Public/Uncontrolled Exposure	28	85	Y	N,1

1 It is recommended that RF safety signage and warnings to be posted to remind general public and personnel of the existence of cell transmitter that is generating electromagnetic energy equipment at this location.

IV.a Power Density calculation method

The calculation was based on the OET Bulletin 65 guidelines for Maximum Permissible Exposure (MPE) to humans. A worst case scenario is used to calculate the power density using the following mathematical formula:

$$S = 0.0334 \cdot P / R^2$$

S is the power density in mW/cm²

P is the Effective radiated power in Watts

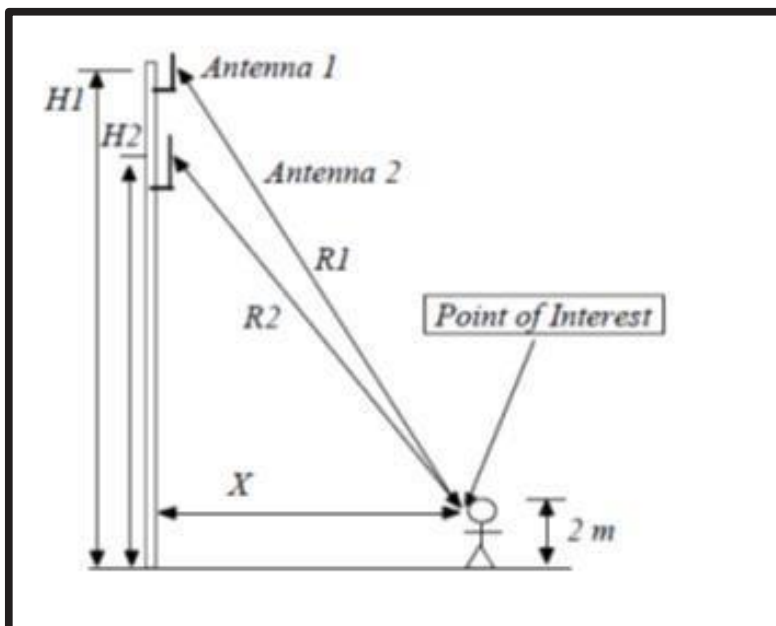
R is the distance from the center of the antenna in meters

IV.b Distance Calculation from the small cell antenna

The above calculation was based on a worst case scenario for a person with an average height of 6.56 feet and standing at various distances in feet from the base of the utility pole. The direct distance R used in the calculation below is determined by using the mathematical formula:

$$R = \text{SQRT}(H^2 + X^2)$$

Illustration-1



EME-RF Exposure Study, Verizon Wireless – [SITE ID: CA_SUNNYVALE_005] [LOCATION:427810]

Where X is the distance from the general public to the base of the pole and H is the distance from the general public (individual) standing on the ground to the bottom of the panel antenna. The average height of an individual used in the calculations is 2 meters or 6.56 feet.

It should be noted that the strongest energy radiated from the antenna is at the face and center of the antenna. The general public may be exposed to more RF energy when standing in the face of the panel antenna. Additional calculations were done to determine the power density when general public is exposed to the energy at the antenna face level, such as on balconies in a residential area or in an office building that is in close proximity to the cell site. Calculations were completed at various distances for locations in direct path of the antenna beam. The table shows the calculated values of the minimum safe distances from the cell site.

V. Conclusion

The proposed Verizon Wireless 4G small cell site to be installed at the designated location with the equipment specifications provided will comply with the applicable FCC safety guidelines for maximum permissible occupational and general public exposure limits. This conclusion based on the analysis conducted in this report that showed the power density calculated to be below the safety limits set by the FCC OET Bulletin 65. The minimum distance from the face of the antenna where occupational and general public are below safety guidelines are 18 feet and 28 feet respectively. The power density calculated above the roof of the closest building (about 40 feet from the pole and 20 feet below antenna face level) is 20.90% of the general public exposure limit. Furthermore, since the study was based on worst case scenario, the actual power density that may result from the equipment when in operation will most likely be far less than showing in the tables IV.1 and IV.2. And even though the proposed site to be installed will comply with applicable safety standards, it is recommended that signage to be posted on the utility pole to let the general public and personnel know of the presence of the cell site.

EME-RF Exposure Study, Verizon Wireless – [SITE ID: CA_SUNNYVALE_005] [LOCATION:427810]

References:

A) Technical Standards applicable to this measurement.

1. "Safety Levels with Respect to Human Exposure Frequency Electromagnetic Fields", American National Standards Institute (ANSI); IEEE Standard C95.1-1991.
2. "Evaluating Compliance with FCC Guidelines for Human Exposure to Frequency Electromagnetic Fields, Federal Communications Commission, Office of Engineering and Technology; OET Bulletin 65, Edition 97-01, August 1997.

B) Occupational and general public exposure limits as guidelines per the FCC OET Bulletin 65.

Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength(E) (V/m)	Magnetic Field Strength(H) (A/m)	Power Density(S) (mW/cm ²)
0.3-3.0	614	1.63	(100)*
3.0-30	1842/f	4.89/f	(900/f ²)*
30-300	61.4	0.163	1.0
300-1500	--	--	f/300
1500-100,000	--	--	5.0

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength(E) (V/m)	Magnetic Field Strength(H) (A/m)	Power Density(S) (mW/cm ²)
0.3-1.34	614	1.63	(100)*
1.34-30	824/f	2.19/f	(180/f ²)*
30-300	27.5	0.073	0.2
300-1500	--	--	t/1500
1500-100,000	--	--	1.0

f=frequency in MHz

*Plane-wave equivalent power density



Verizon Wireless

15505 Sand Canyon Ave, Bldg. D
Irvine, CA 92618

March 30, 2018

City of Sunnyvale
456 West Olive Avenue
Sunnyvale, California 94086

Re: 418 Supporters for Verizon Wireless Small Cells
City of Sunnyvale

To Whom It May Concern:

I am the Verizon Wireless Marketing Director over the team that maintains and manages all data and information messages that are sent to Verizon Wireless customers in California. In connection with the application referred to above, Verizon Wireless arranged for a text message to be sent to customers with billing addresses within ZIP codes 94085, 94086 and 94087 in Sunnyvale. The entire text message sent reads as follows:

Free Verizon Message: Reply YES to this text to show your support for improved Verizon Wireless service in Sunnyvale. Add a message to tell the City that you support small cell facilities on existing utility pole and light standard locations on City streets. Include your email address for updates.

The text message above was sent on March 23, 2018. As of March 30, 2018, we have received 418 affirmative text message responses indicating support for the proposed facilities and ten respondents opposed. Text messages received confirmed the need to provide improved Verizon Wireless service in Sunnyvale. Samples of the text messages of support received from Verizon Wireless customers appear on the attached pages.

I am available to verify the above information as you may require.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeremy McCarty", written over a horizontal line.

Jeremy McCarty
Director
Customer Relationship Management

Attachment

**Sample Text Messages of Support
Verizon Wireless Small Cells
City of Sunnyvale**

We definitely need something to improve the services in Sunnyvale.

I agree.

I support more small cell facilities in Sunnyvale.

Please. Anything to improve the wireless service is a plus

Reception is not that great near my area in sunnyvale.

SUPER BAD RECEPTION AT MY HOME

The coverage is very spotty at some areas I have been

The signal is weak

UES I support this heavily . I have a utility pole in my backyard that can be used.
Current coverage is horrible.

YES I agree with sma cell facilities.

Yes I support small cell facilities on existing utility pole and light standard locations on city of Sunnyvale streets.

Yes / unobtrusive improvements on existing poles can serve the City!

Yes 1613 canary drive. Verizon reception is horrible

Yes and I support the small cell facilities.

Yes I support small cell facilities on existing utility pole and light standard locations on City streets.

Yes I do support small cell facilities I like upgrade service I am receiving

Yes I support small cell facilities on existing telephone poles.

Yes I support small cell facilities on existing utility poles and light standard locations on city street in Sunnyvale.

YES I would appreciate improved service

YES please make our cell service better

Yes Sunnyvale could use that service. Especially on Fair Oaks. Get almost no bars of service.

YES using existing poles will help with the costs of hopefully reducing the cost of cell phone usage costs.

YES Verizon service needs to be as innovative as the industries that live in Sunnyvale and Silicon Valley.

Yes, our coverage needs improvement.

YES, please allow Verizon install more antennas to improve the service in Sunnyvale.

Yes, service has sucked since building new buildings on Mathilda!!!!

YES, I support small cell facilities on city streets.

Yes! Please increase coverage on existing utility pole and light standard locations on city streets.

YES. I SUPPORT SMALL CELL FACILITIES on existing utility pole and light standard locations on city streets.

Yes. I support small cell facilities on existing utility pole and light standard locations on City streets.

Yes. Improved service is sorely needed

Yes. Sunnyvale must keep up their infrastructure.

YES. I cannot believe I live in the heart of silicon valley and have barely a cell signal in my own home. Please allow improvements!

Yes. I get no signal at my house. I support small cell facilities on existing poles on city streets to improve my service.

YES. I support expanded cell service as it can be spotty within sunnyvale.

Yes. I support small cell facilities on utility poles and light standard locations on city streets.

YES. Sunnyvale should be at the front of the line of cities that promote and sustain leading technological capabilities for its citizens.

Yes. Too many dead spots and would help with increased traffic

Yes... I support Verizon for small cell facilities