



CITY OF SANTA BARBARA

COUNCIL AGENDA REPORT

AGENDA DATE: May 10, 2016

TO: Mayor and Councilmembers

FROM: Planning Division, Community Development Department

SUBJECT: Appeal Of Small Cell Wireless Communications Facility Proposed In The Public Right-Of-Way Of The 300 Block Of Grove Lane

RECOMMENDATION: That Council:

- A. Uphold the appeal of Jan and Maria Kaestner of the Architectural Board of Review's decision to grant Final Approval, and approve a revised design for the small cell wireless communications facility proposed by Verizon Wireless within the 300 block of Grove Lane; and
- B. Direct Staff to return to Council with decision and findings reflecting the outcome of the appeal.

EXECUTIVE SUMMARY:

Federal Communications Commission regulations require local governments to act upon applications for wireless facility installations within certain time limits. Recent state legislation (AB 57) deems wireless facility applications approved if the local government fails to act within the time limits proscribed by the FCC regulations. Therefore, in order to ensure a timely action on this application, the appeal hearing has been scheduled in an expedited manner.

The appellants raise several concerns regarding the proposal to place a small cell wireless communication facility on an existing utility pole in the public right-of-way, including lack of adequate public noticing, failure to analyze alternative locations, lack of consideration to aesthetics, safety concerns, and inadequacy of the concealment design.

Staff concurs with the appellants' assertion that the small cell wireless facility proposal, as approved by the Architectural Board of Review, does not effectively minimize the visual impacts of the facility. As such, staff recommends Council uphold the appeal and approve a revised design, locating the meter pedestal and equipment within the parkway rather than directly on the utility pole.

DISCUSSION:

On April 7, 2016, an appeal was filed by Jan and Maria Kaestner, neighbors to the project site, of the Architectural Board of Review's (ABR) Project Design and Final Approval of the project on March 28, 2016 (Attachment 1 – Appellants' Letter). The project involves a proposal for a new small cell Verizon wireless facility and associated equipment on an existing 25-foot tall wooden utility pole. All project components would be located within the public right-of-way, in the 300 block of Grove Lane, in the western portion of the San Roque neighborhood. The project also proposes trenching across the public street to obtain electrical power and installation of various pieces of new wireless radio and metering equipment on the existing utility pole (Attachment 2 – Project Discussion and Attachment 3 – Photo Simulations).

Pursuant to Santa Barbara Municipal Code (SBMC) §28.94.030.DD.1.c., a wireless cellular antenna installation may be exempt from the requirement of a Conditional Use Permit if the Community Development Director can make specific findings regarding antenna height, resource impacts, and visual impacts. The purpose of the ABR's review and action on this application was to provide input to the Community Development Director regarding any potential visual impacts. In doing so, the ABR "may take action regarding the location of the antenna(s) on the site, color and size of the proposed antennas so as to minimize any adverse visual impacts."

Federal Statutes, Federal Communications Commission (FCC) Regulations, and State Statutes related to Wireless Facilities

Federal Statutes:

The Telecommunications Act of 1996

In 1996, Congress passed the Telecommunications Act of 1996 (the Telecom Act). The Telecom Act largely preserved local land use regulation over wireless facilities with some important limitations:

- No explicit or effective prohibitions on wireless service
- No unreasonable discrimination amongst carriers
- No local regulation of radio frequency emissions, if the facilities meet FCC regulations

To the extent the separation and access requirements found in Municipal Code Section 28.94.030.DD are more restrictive than the FCC regulations concerning radio frequency emissions, the City's standards are preempted by federal law. In addition to the limitations on local land use regulation, the Telecom Act required local governments to act upon wireless facility applications within a reasonable time. Following the adoption of the Telecom Act, the FCC issued regulations defining what is considered to be a reasonable amount of time for various types of wireless facility applications. These

timeframes have been compared to the shot clocks employed in basketball games and are commonly referred to as “shot clocks”.

The Middle Class Tax Relief Act and Job Creation Act of 2012

In 2012, Congress passed the Middle Class Tax Relief Act and Job Creation Act. Section 6409(a) of the Middle Class Tax Relief Act and Job Creation Act (Section 6409(a)) provides, in part, that “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.” In adopting Section 6409(a), Congress stated an intent to encourage and facilitate the installation of new wireless facilities.

FCC Regulations:

In 2009, the FCC adopted regulations establishing the first shot clocks. These regulations required local governments to act upon wireless facilities applications within 90 days for collocations (installations of additional antennas at locations that already have antennas) and 150 days for new antennas. Importantly, these regulations were not self-enforcing. The regulations required wireless carriers to file a lawsuits in order to enforce the shot clock provisions.

On January 8, 2015, the FCC adopted new regulations implementing Section 6409(a). These regulations went into effect on April 8, 2015. The regulations clarify the application of certain federal environmental and historic preservation statutes to exclude smaller wireless facilities (small cells and distributed antenna systems DAS)) from more extensive review, define the terms used by Congress in Section 6409(a), and establish new shot clock procedures recognizing a new class of wireless facility applications – the “6409(a) modification.” These regulations effectively establish a new class of wireless facility applications that local governments are required to approve on an expedited processing schedule. The new shot clocks are as follows:

- 6409(a) collocations 60 days
- Collocations that do not qualify as 6409(a) 90 days
- New sites 150 days

When adopting the new regulations introducing the new shot clock for 6409(a) collocations, the FCC adopted a deemed granted remedy 6409(a) collocations, but refused to extend the remedy to cases where local governments fail to render a decision on other applications within the specified shot clocks.

State Statutes:

Public Utilities Code Sections 7901 and 7901.1

Section 7901 of the California Public Utilities Code grants certain telephone corporations a state-wide franchise to use the right of way for telephone infrastructure (including wireless antennas), so long as the installations do not interfere with the use of the road or the sidewalks. Section 7901.1 reserves to local governments the right to control the time, place, and manner of the installation of telecommunications facilities in the right of way so as to avoid conflicts.

When these statutes are applied in conjunction with the “effective prohibition” limitations from the Telecommunications Act to wireless facilities applications, local governments are allowed to regulate the appearance of installations and may regulate the location of the installations in order to avoid conflicts within the right of way, but local governments cannot prohibit the use of the right of way or explicitly or effectively prevent the provision of wireless service.

AB 57 (Government Code Section 65964.1)

AB57 became effective on January 1, 2016 and provides that a collocation or siting application for a wireless telecommunications facility is deemed approved if:

- 1) The city or county fails to approve or disapprove the application within the reasonable time periods specified in applicable decisions of the FCC;
- 2) All required public notices have been provided regarding the application; and
- 3) The applicant has provided a notice to the city or county that the reasonable time period has lapsed.

The City is obligated to hear this appeal in an expeditious manner in order to comply with the FCC regulations. Before the adoption of AB 57, if a local government did not render a decision on a wireless application within the time specified under the applicable FCC shot clock, the wireless carrier had to seek an order from a court to require the local jurisdiction to make a decision on the application. AB 57 reverses the positions of the wireless carrier and the local government. Under AB 57, if a local government does not approve or disapprove the wireless facility application within the period of time specified in the FCC regulations, the application is deemed approved and the local government must seek a court order to block the installation.

Architectural Board of Review (ABR)

The project was reviewed at two ABR meetings, on August 25, 2015 and March 28, 2016. At the first ABR meeting, the Board had questions regarding the siting of the proposed equipment and possible noise associated with proposed radio equipment, and requested that the meter pedestal and equipment cabinet be relocated south of the utility pole to avoid possible damage to parkway trees and that alternate locations for

the conduit be studied to stay clear of tree roots. One Board member suggested that the applicant consider other equipment locations that were not as visible. No public comment was received at this hearing, though property owners within 300 feet of the site were provided mailed notice of the hearing. The Board continued the project indefinitely, with direction to locate the equipment cabinets south of the utility pole and add appropriate landscaping screening around the equipment cabinets (Attachment 4 – ABR Meeting Minutes).

The project returned on March 28, 2016 for additional review by the ABR. Rather than pursue a design with relocated equipment cabinets south of the utility pole and associated landscape screening, the applicant elected to remove the proposed equipment cabinets and instead propose all radio and metering equipment on the utility pole. When questioned by the ABR, the applicant responded that the responsibility for maintenance of landscaping screening of the equipment cabinets was ambiguous and uncertain, and so they opted to eliminate the cabinets and place all equipment on the utility pole.

At that hearing, a neighbor and one of the appellants, Mr. Kaestner, questioned the need for the facility in this location and asserted that the addition of this above-ground equipment would make future utility undergrounding efforts more difficult. Mr. Kaestner also voiced concerns regarding health and safety impacts of radio frequency in close proximity to residential development.

The Board stated that it had not provided the applicant with direction to pursue a design that placed all equipment on the utility pole. When asked if the equipment could be placed within an underground vault, the applicant stated that there are various problems associated with underground vaults, including over-excavation, sidewalk closure for maintenance, and additional ventilation requirements, and that very little equipment for these small cell installations can actually be placed in an underground vault.

An ABR member made a summary closing statement that the proposal was “unfortunate but acceptable.” The Board eventually voted 4/0/0 to grant Project Design and Final Approval of the project as submitted, and made the “no visual impact findings” required by SBMC §28.94.030.DD.1.c. The Board found that the above-ground cabinet design was worse than the pole-mounted equipment design since that solution could be partially screened by existing street trees and was less obtrusive than the addition of new equipment cabinets in the parkway.

Appeal Issues

Inadequate Public Notice

The appellants assert that the City did not provide adequate notice to “affected property owners,” thus limiting their due process rights. SBMC §22.86.040.A. lists seven types of projects that require mailed public notice prior to ABR’s review of the application. Although a project of this scope does not require such a notice, the City did provide mailed notice to property owners within 300 feet of the project site as a courtesy. In addition, a large yellow “Notice of Development” sign was required to be placed on the subject utility pole. Therefore, staff believes sufficient notice was provided to surrounding residents.

Review of Alternative Sites

The appellants state that the applicant failed to offer alternative sites to the proposed location and the ABR failed to inquire as to the availability of alternative sites.

In the application materials, the ABR received a project narrative that included some discussion of site alternatives (Attachment 2). As such, the ABR review focused on the proposed project location, and the Board did not direct the applicant to study other locations. In general, the ABR may request that an applicant consider other locations for wireless facilities if the proposed site is highly visible, is in close proximity to residential homes, or there are preferred locations with better screening solutions. In some cases, proposed wireless facilities in the public right-of-way have been relocated, painted, or redesigned with additional concealment due to visual or compatibility concerns.

While the ABR may request consideration of alternative sites, it may not deny a wireless application on the grounds that service is already provided in the area. In fact, the FCC has ruled that localities “shall not regulate in a manner that prohibits or has the effect of prohibiting the provision of personal wireless services.” The FCC has ruled that this provision prohibits a State or a local government from denying a personal wireless service facility siting application solely because service is available from another provider.

Aesthetic Considerations

The appellants state that the ABR failed to have the applicant demonstrate that the proposed design was the “least obtrusive option.” Staff believes that finding ideal screening solutions for new wireless facilities on highly visible poles is challenging. The ABR has been less likely to require equipment to be placed underground or screened within equipment pedestal cabinets because some Board members believe undergrounding is a design hardship and equipment pedestals contribute to more visual clutter in neighborhoods. In particular, ground-mounted cabinets are more susceptible to graffiti.

Initially, the ABR directed the applicant to relocate and screen the then-proposed equipment cabinets within the right-of-way. In response to the applicant's assertion that maintenance of required landscape screening was challenging, the ABR entertained the proposal of placing all equipment on the utility pole. Prior to rendering a decision, the ABR compared the initial proposal with the revised proposal to mount radio and metering equipment on the utility pole and deemed the subsequent proposal the superior option of the two presented, in part, because existing street trees would help screen the pole-mounted equipment. However, the ABR was not presented drawings or a photo-simulation of an option reflecting their initial direction to relocate the above-ground cabinets south of the utility pole.

Since 2006, the ABR and the Historic Landmarks Commission (HLC) have approved many similar pole-mounted small cell wireless installations as part of the Distributed Antenna Systems (DAS) first developed by NextG Communications. In many cases, the installations are in heavily travelled pedestrian areas where equipment cabinets would be more visible and potentially impede circulation. Above-ground equipment cabinets in this particular location, within a parkway, would not present those same challenges. Therefore, staff believes that the adverse visual impacts related to the equipment to support the antenna have not been minimized to the maximum extent possible, and recommends a design alternative consistent with the ABR's initial direction.

Safety Considerations

The appellants state that the ABR failed to consider structural/safety concerns regarding earthquakes, fire or vehicular accidents, and toxic chemical hazards associated with back-up lead/acid batteries on site. These considerations are outside of the ABR's purview to review wireless facility applications solely for aesthetic purposes. The City did require a radio frequency (RF) study for the site, which demonstrated that the proposed installation will be within the safe human exposure guidelines and prevailing standards for limiting public exposure to radio frequency (Attachment 5 – RF Study).

Concealment Efforts

The appellants assert that the ABR failed to require concealment of the installation to the fullest feasible extent. Concealment techniques are relatively limited in these instances because small cell wireless facilities on utility poles are more difficult to camouflage, screen, or conceal than wireless antenna facilities on buildings. Other small wireless facilities at various public locations have been required in the past to place radio equipment within cabinets or in underground vaults. The ABR did not further pursue their initial direction to relocate the equipment cabinets south of the utility pole, or explore placing some equipment underground after the applicant asserted only minimal equipment could be contained in such a vault.

Standard of Review

Pursuant to Municipal Code Section 28.94.030.DD (Attachment 6), the role of the Architectural Board of Review, and the City Council on appeal, is to review the location, color, and size of the proposed wireless facility in order to minimize any adverse visual impacts. The City Council should use the Design Review Guidelines for Wireless Communication Facilities/Antennas to evaluate whether the application has minimized the adverse visual impacts (Attachment 7). If the City Council concludes that either the approved application, or an alternate design, has successfully minimized the adverse visual impacts, the Council may approve the application by making a finding of “no visual impacts.”

Conclusion

The ABR clearly struggled with finding an appropriate concealment solution for this small cell wireless application. The ABR determined the project was consistent with other approved small cell wireless locations and the screening provided by existing street trees was acceptable. Based on our vast experience working with multiple wireless providers to find aesthetically acceptable solutions for a variety of locations, staff believes the proposal can be further improved and the approved project is not the least obtrusive option available for screening equipment.

Therefore, staff recommends that Council uphold the appeal and approve a revised design consistent with ABR’s initial direction to provide metering and radio equipment in above-ground cabinets, in a location within the parkway that provides optimal screening from public view.

California Environmental Quality Act (CEQA) Determination

The proposed project is subject to California Environmental Quality Act (CEQA) review, and the Environmental Analyst has determined that the project would be categorically exempt pursuant to CEQA Guidelines §15301(b) Minor Alteration of Existing Facilities.

NOTE: The project file and plans were delivered separately to City Council for review and are available for public review at the City Clerk’s office.

- ATTACHMENTS:**
1. Appellants’ letter, received April 7, 2016
 2. Applicant’s Project Summary Discussion
 3. Approved Project Photo Simulations
 4. ABR Minutes, dated August 17, 2015 and March 28, 2016
 5. Project Radio Frequency Study
 6. SBMC §28.94.030.DD (Conditional Use Permits – Television, Radio and Cellular Antennas)
 7. Design Review Guidelines for Wireless Communication Facilities/Antennas

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PREPARED BY: Jaime Limón, Senior Planner II

SUBMITTED BY: George Buell, Community Development Director

APPROVED BY: City Administrator's Office

RECEIVED

NOTICE OF APPEAL AND APPEAL OF APPROVAL OF MST2015-00381

2016 APR -7 PM 12:29

TO: SANTA BARBARA CITY COUNCIL
CLERK of the CITY OF SANTA BARBARA
735 ANACAPA STREET
SANTA BARBARA, CA 93101

CITY OF SANTA BARBARA
CITY CLERK'S OFFICE

RE: ARCHITECTURAL REVIEW BOARD ["ABR"]

*Date of Determination: 3/28/16

*Approval of Project/Final Determination of Approval of Installation of
New VZW Wireless Telecom Equipment at 300 Block of Grove Lane

GROUNDINGS FOR APPEAL:

1. Inadequate Public Notice to Affected Property Owners:

*Lack of Timely Posted Site Notice;

*Lack of Timely Mailed Notice to Affected Property Owners.

Lack of Written Notice to Affected Property Owners is Violative of the Due Process Rights and Equal Protection Rights Afforded by the United States Constitution and the California Constitution as well as Broad Statutory Rights including, but not limited to, those Rights and Protections Afforded by California Government Code §§ 54950, 65091.

2. Applicant Failed to Offer Alternative Sites to the Proposed Location and the ABR failed to Inquire as to Availability of Alternative Sites and Require a Showing by the Applicant that the Alternative Sites were Unacceptable, Infeasible or Otherwise Inconsistent with Development Standards, as is the Proposed Location.

3. Aesthetic Considerations: The ABR Failed to Require the Least Obtrusive Impact by the Proposed Development and in fact Allowed Applicant to Place ALL Components of the Planned Development in a Pole Mounted-Fully Obtrusive Installation without any Showing by the Applicant that the Proposed Installation was the Least Obtrusive Option.

4. Structural/Safety Considerations: The ABR failed to consider Earthquakes, Fire or Vehicular Accidents and Explosive and Toxic Chemical Hazards associated with back-up Lead/Acid Batteries at the Site.

5. ABR failed to Require Concealment of the Installation to the Fullest Feasible Extent. All Conduits and Attachments are not concealed to the Fullest Feasible Extent. The Applicant relies upon an Existing Tree, which was Planted and Maintained by the Adjacent Property Owner, for Concealment and Applicant made no Other Concealment Efforts beyond the Rotation of the Installed Devices and Cabinets Upon the pole.

The Proposed and ABR Approved Installation will be an Absolute Eyesore and Blight on the Entire Neighborhood.

AFFECTED PARTIES: Appellants and All Property Owners on the Attached Signature Sheets (4 Pages) WILL BE AFFECTED by the Proposed Installation and each Signator Objects to the Approved Installation of the Wireless Telecom Equipment as Wrongfully Approved by the ABR on 3/28/16.

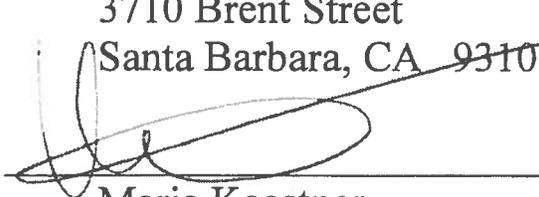
Appellants:

Jan Eric Kaestner: (805) 730-1306 jan@ghitterman.com

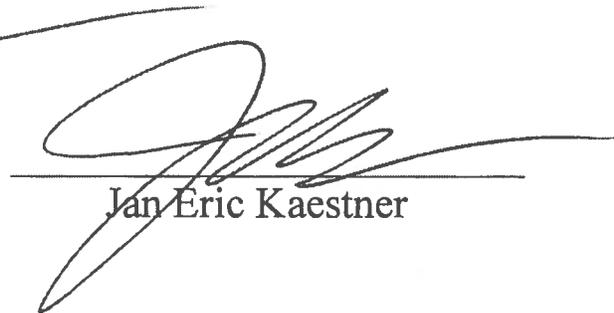
Maria Kaestner: (805) 569-2814 dutchessmariasb@hotmail.com

3710 Brent Street

Santa Barbara, CA 93105



Maria Kaestner



Jan Eric Kaestner

WE, THE UNDERSIGNED RESIDENTS OF SAN ROQUE LIVING IN THE VICINITY OF 300 GROVE LANE DO HEREBY EXPRESS OUR OBJECTION TO THE INSTALLATION OF A CELL TOWER IN OUR NEIGHBORHOOD

| NAME | ADDRESS | SIGNATURE | NOTES |
|------------------------------|-------------------|-----------|----------------------------|
| 1. STEVE HILL | 3715 BRENT ST | | |
| 2. Michelle Cederberg | 3704 Brent st. | | Did not get notice 3/25/16 |
| 3. Lisa Bradley | 3722 Brent | | |
| 4. Aidan Bradley | " | | |
| 5. Maria Kaestner | 3710 BRENT ST | | |
| 6. Miranda Fierro | 3660 San Remo Dr | | |
| 7. Steve Fern | 3660 San Remo Dr | | |
| 8. LINDA WARREN | 3727 BRENT ST | | no notice |
| 9. MICHAEL WARREN | 3727 BRENT ST | | no notice |
| 10. Cada Berkowitz | 3703 Coral st | | NO NOTICE |
| 11. Iris Berkowitz Schreiber | 3717 Coral Street | | NO NOTICE |
| 12. Steven R. Wolff | 3717 Coral Street | | NO NOTICE |
| 13. Pedram Rasht | 3704 Coral Street | | No Notice |
| 14. Samira Karyami-Rashti | 3704 Coral Street | | No notice |
| 15. Tom Strellich | 390 Grove Lane | | NO NOTICE |
| 16. Allison Strellich | 390 Grove Ln | | NO NOTICE |
| 17. Gary Gillingham | 398 Grove Ln. | | no notice |
| 18. DICK SHINDHI | 3718 Brent St | | NO NOTICE |
| 19. Mark Cederberg | 3704 Brent. | | no notice |
| 20. SIDHON FOX | 3709 BRENT | | NO NOTICE |

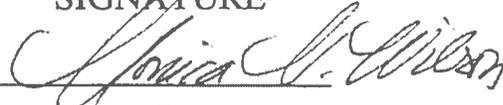
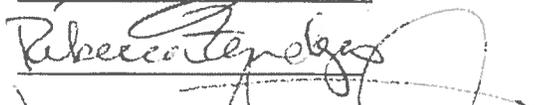
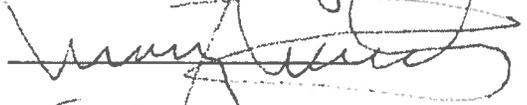
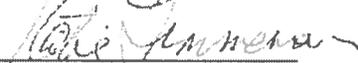
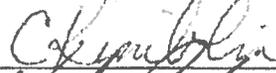
WE, THE UNDERSIGNED RESIDENTS OF SAN ROQUE LIVING IN THE VICINITY OF 300 GROVE LANE DO HEREBY EXPRESS OUR OBJECTION TO THE INSTALLATION OF A CELL TOWER IN OUR NEIGHBORHOOD

| NAME | ADDRESS | SIGNATURE | NOTICE |
|-------------------------------|------------------------|----------------------------|-----------|
| 21. <u>KAREN FOX</u> | <u>3709 BRENT ST.</u> | <u>Karen Fox</u> | No NOTICE |
| 22. <u>Tomu Lugo</u> | <u>3703 Brent St.</u> | <u>[Signature]</u> | No NOTICE |
| 23. <u>MARPERZ HOP</u> | <u>3703 BRENT ST.</u> | <u>[Signature]</u> | No NOTICE |
| 24. <u>JAN KAESTNER</u> | <u>3710 BRENT ST</u> | <u>[Signature]</u> | |
| 25. <u>EVIL LOPEZ</u> | <u>3417 SUNSET A.</u> | <u>[Signature]</u> | |
| 26. <u>Judy Bentm</u> | <u>338 N. Ontario</u> | <u>Judy Bent</u> | |
| 27. <u>Maria Parpura</u> | <u>3623 Sunset Dr.</u> | <u>Maria Parpura</u> | |
| 28. <u>CHRIS BENTON</u> | <u>538 N. ONTARIO</u> | <u>[Signature]</u> | |
| 29. <u>Robert Weber</u> | <u>3620 Sunset Dr</u> | <u>Robert Weber</u> | |
| 30. <u>Patricia Weber</u> | <u>3620 Sunset Dr</u> | <u>[Signature]</u> | |
| 31. <u>MARY ANNE DALY</u> | <u>3703 Brent St.</u> | <u>[Signature]</u> | |
| 32. <u>Angelina Rozhko</u> | <u>3721 Brent St</u> | <u>[Signature]</u> | |
| 33. <u>NANCY C. JORDAN</u> | <u>3682 EILEEN WAY</u> | <u>Nancy C Jordan</u> | |
| 34. <u>William Burtness</u> | <u>3676 Eileen Way</u> | <u>William J. Burtness</u> | |
| 35. <u>JIF STOPPLE</u> | <u>3677 EILEEN WAY</u> | <u>[Signature]</u> | |
| 36. <u>LORRAINE RYAN</u> | <u>3736 AVOID LANE</u> | <u>Lorraine Ryan</u> | |
| 37. <u>Suzanne Cullingham</u> | <u>398 Grove Ln</u> | <u>[Signature]</u> | |
| 38. <u>VERA ROZHKO</u> | <u>3721 BRENT STR.</u> | <u>Vera Rozhko</u> | |
| 39. <u>Veronica Rozhko</u> | <u>3721 Brent str</u> | <u>[Signature]</u> | |
| 40. <u>LYDIA KAESTNER</u> | <u>3710 BRENT ST</u> | <u>[Signature]</u> | |

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| NAME | ADDRESS | SIGNATURE |
|----------------------------------|-----------------------------|----------------------------------|
| 41. <u>MARY FERREIS</u> | <u>3731 Brent St 93105</u> | <u>Mary Ferris</u> |
| 42. <u>Preston Roan</u> | <u>3731 Brent St. 93105</u> | <u>P Roan</u> |
| 43. <u>Lonna Flores</u> | <u>3732 Brent St. 93105</u> | <u>Lonna Flores</u> |
| 44. <u>Jan Sakotas</u> | <u>3732 Brent 93105</u> | <u>Jan Sakotas</u> |
| 45. <u>Linda Jalaba</u> | <u>3656 Eileen Way</u> | <u>Linda Jalaba</u> Linda Jalaba |
| 46. <u>Richard Mung</u> | <u>3651 Eileen Way</u> | <u>Richard Mung</u> |
| 47. <u>Vani John</u> | <u>3632 Sunset Dr</u> | <u>Vani John</u> |
| 48. <u>Elizabeth Willert</u> | <u>344 Woodley Ct</u> | <u>EZ Willert</u> |
| 49. <u>Kristen Price</u> | <u>343 Woodley Ct</u> | <u>Kristen Price</u> |
| 50. <u>Patrick Briggs</u> | <u>343 Woodley Ct</u> | <u>Patrick Briggs</u> |
| 51. <u>John Wilhelm</u> | <u>344 Woodley Ct.</u> | <u>John W. Wilhelm</u> |
| 52. <u>M. L. Dora E. Bromdal</u> | <u>3605 Sunset Dr</u> | <u>M. L. Dora E. Bromdal</u> |
| 53. <u>Heather Hedina</u> | <u>3704 Capri Dr.</u> | <u>Heather Hedina</u> |
| 54. <u>Carol Demott</u> | <u>3716 Capri Dr.</u> | <u>Carol Demott</u> |
| 55. <u>Nicole Bitar</u> | <u>262 Grove Lane</u> | <u>Nicole Bitar</u> |
| 56. <u>Jane Fehrenbacher</u> | <u>3662 Eileen Way</u> | <u>Jane Fehrenbacher</u> |
| 57. <u>Richard C. Talbot</u> | <u>3444 Eileen Way</u> | <u>Richard C. Talbot</u> |
| 58. <u>A. Brent Delozer</u> | <u>482 Foxon Dr</u> | <u>A. Brent Delozer</u> |
| 59. <u>Elayne Aramp</u> | <u>733 Grove Ln.</u> | <u>Elayne Aramp</u> |
| 60. <u>Craig Bushman</u> | <u>" "</u> | <u>Craig Bushman</u> |

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| NAME | ADDRESS | SIGNATURE |
|-----------------------------|-----------------------------|---|
| 61. <u>MONICA WILSON</u> | <u>3728 Brent St, 93105</u> |  |
| 62. <u>Brett Wilson</u> | <u>3728 Brent St 93105</u> |  |
| 63. <u>REBECCA ZONDEJAS</u> | <u>3715 AVON LANE</u> |  |
| 64. <u>Mary Meredith</u> | <u>3723 Avon Lane</u> |  |
| 65. <u>Seanakromann</u> | <u>3730 Avon Lane</u> |  |
| 66. <u>KATIE TIMMERMAN</u> | <u>3742 AVON</u> |  |
| 67. <u>DAVE GURRER</u> | <u>3741 AVON</u> |  |
| 68. <u>Charee Kimblin</u> | <u>3735 Avon Lane</u> |  |
| 69. <u>Walt Kuhn</u> | <u>3716 Brent</u> |  |
| 70. _____ | _____ | _____ |
| 71. _____ | _____ | _____ |
| 72. _____ | _____ | _____ |
| 73. _____ | _____ | _____ |
| 74. _____ | _____ | _____ |
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| 77. _____ | _____ | _____ |
| 78. _____ | _____ | _____ |
| 79. _____ | _____ | _____ |
| 80. _____ | _____ | _____ |



Wireless Telecommunication Facility

Project Discussion

Applicant: Verizon Wireless (VZW)
2785 Mitchell Drive
Walnut Creek, CA 94598

Owner: N/A (public ROW) JPA

Rep.: Sequoia Deployment Services, Inc.
22471 Aspan Street, Suite 290
Lake Forest, CA 92630

Aaron M. Anderson
562-485-8012

Site No.: VZW Grove Lane SC1

Location: near to 3704 Brent Street, Santa Barbara, CA 93105

GPS Coordinates: Latitude => 34° 26' 41.58"N
Longitude => 119° 44' 32.39"W
Datum => NAD83

Project Description

Verizon Wireless (VZW) is requesting the review and approval of an Architectural Board of Review Permit for the installation of a new wireless telecommunications facility located near 3704 Brent Street. The proposal consists of the installation and operation of one (1) new 2'-0" diameter Cantenna mounted to an existing 25'-0" tall wooden JPA utility pole. The proposal also consists of the installation of two (2) new pole-mounted RRU's, one (1) new pole-mounted AWS/PCS diplexer, one (1) new pole-mounted disconnect switch, one (1) new slimline meter pedestal and pad, one (1) new Verizon equipment cabinet, and one (1) new 17" x 30" handhole. All proposed electrical and fiber optic cables, and other necessary utility connections will be located underground where feasible. The cable runs that extend from the equipment shelter to the antennas will be placed within proposed conduit risers and be shielded from public access/view. The site will be accessed from the public right-of-way off of Grove Lane.

The proposed installation will be consistent with the use of the subject property, and in no way detrimental to the uses immediately surrounding the subject property.

The Property and Zoning Information

The subject site is located in the City of Santa Barbara Planning jurisdiction, and lies within the public right-of-way (ROW). The area adjacent to the ROW location is zoned E-3 (One-Family Residential Zone) and is identified in the City of Santa Barbara General Plan as Low Density Residential (Max 5 du/acre). The height limit of the underlying E-3 zone is thirty (30) feet, with the Municipal Code allowing for a height of (45) feet for antennas installed within a two-family residence zone. While the height of the existing pole does not exceed the thirty (30) foot height limit, placement of the antennas will be limited to 27'-8" and therefore not exceed the allowable limit of the zone or as stated in Section 28.87.260 of the Municipal Code. Further, Section 28.04.140 of the Municipal Code states that the maximum vertical height of a building or structure at all points measured from natural or finished grade, whichever is lower. Architectural elements that do not add floor area to a building, such as chimneys, vents, "antennae", and towers, are not considered a part of the height of a building, and any flagpole, antenna, ornamental spire, chimney, or other building element less than four (4) feet along each horizontal dimension shall be considered exempt from the height limitations as stated in Section 28.11.020 of the Municipal Code. Additional height can be approved by a Conditional Use Permit (CUP) pursuant to Municipal Code Chapter 28.94 if within an applicable zone. The proposal as it is currently designed is subject to a Conditional Use Permit (CUP) as well as review by the Architectural Board of Review. The design does meet the intent of Municipal Code Section 28.94.030(DD)(2)(a) as Verizon has demonstrated compliance with Shared Use of Support Structure by attaching the proposed antennas and equipment to the existing wooded JPA utility pole.

In this instance an existing wooden JPA utility pole is being utilized for placement of the proposed antenna and associated radio equipment. Placement of the equipment cabinet and meter pedestal is located to the north of the existing JPA pole all within the ROW. The proposed equipment will be placed on a new concrete pad, directly adjacent to the existing fence. The proposed equipment has been design in such a manner as to maintain all required sidewalk clearances for pedestrian travel along the Blanchard Street ROW. The proposed location is the most desirable as it provides the allowable height for placement of Verizon's proposed antennas while still allowing for adequate signal propagation. The design of the facility was chosen to be a pole mounted antenna as it complies with intent of the city's zoning ordinance for new wireless telecommunications facilities and is considered to be a 'stealthed' structure since the antenna and pole mounted radio equipment will be painted to match the

existing utility structure. Using the existing JPA utility pole also allows for the placement of the proposed facility while eliminating the need for a new free-standing structure to be built in the area. The facility will appear imperceptible as a 'cell-site' to the general public once construction has been completed as it will blend in with the existing utility use.

Objective

The facility modification is needed to enable Verizon Wireless (VZW) to remain competitive within the wireless industry and to provide data bandwidth meeting customer expectations. VZW is adding LTE/AWS equipment to many of the existing sites within the Santa Barbara County (Central California) market footprint. This will provide customers increased data throughput, upgrading customer speed from the current 3G/4G technology. Initially the modifications will deliver up to 50mb/s, nominally 15-20mb/s and within 2 years using software updates only, approaching 100mb/s to customer devices.

Verizon is working to meet the demand generated by the changing way that the public uses wireless telecommunications services. This demand is generated by the increasing number of people that use wireless telecommunications services not only for phone calls but for other types of communication such as texting and video conferencing as well as to receive all sorts of information and entertainment. In many cases wireless phones and devices have replaced "traditional" landline phones and have become the primary device and service used for communication including contacting emergency services in the form of 911 calls. Verizon is committed to providing quality and reliable service to meet this user demand. The RF Capacity Coverage Justification included with this application show the areas of deficient coverage that will be enhanced as a result of the operation of this facility.

About Verizon

As a licensee authorized by the Federal Communications Commission to provide wireless services in this region, Verizon must establish and maintain a network of wireless telecommunications facilities in the metropolitan area and beyond. Each wireless telecommunications facility, or base station, consists of transmitting and receiving antennas mounted on a communication tower or other suitable structure and electronic equipment cabinets. Each facility consists of radios for receiving and transmitting wireless communications and complex electronic equipment to operate the radios, interface with other cellular sites, provide connections to the landline telephone network, and link the facility with the main switching center.

Verizon will operate this facility in full compliance with the regulations and licensing requirements of the FCC, FAA, and CPUC as governed by the Telecommunications Act of 1996 and other applicable laws.

In order to meet the basic level of operational radio signal coverage, radio frequency (RF) engineers have designed a network of wireless telecommunications facilities for the area and routinely maintains and modifies the facilities to ensure they use the most up to date equipment and technology to provide the most reliable and high quality service possible. Due to increases in demand for wireless telecommunications services modifying the existing facilities does not always fix network coverage and capacity issues resulting in the need for the development of new wireless telecommunications facilities. However, the modification of existing facilities to meet demand is pursued first to minimize the overall number of facilities.

The wireless telecommunications facility is a passive use and will continue to have no negative impact on other properties in the surrounding area. The facility is unstaffed, and therefore will generate no additional foot traffic from customers or patrons associated with other types of commercial uses. After an initial modification construction period of 30 to 45 days, the only traffic generated will be for routine maintenance visits, typically once a month. There are no activities that will produce airborne emissions, odor, vibration, heat, glare, or noxious and toxic materials. All equipment and materials needed to operate the site are located in the equipment cabinets. The cellular site does not require water or sanitary facilities and therefore will generate no wastewater.

Maintenance Plan

Verizon uses a combination of remote monitoring and on site activity to maintain their wireless facilities. The remote monitoring is operational twenty-four hours a day, seven days a week, three hundred sixty-five days a year, continuously and monitors for the proper function of the facility as well as various silent alarms. In addition to the off-site monitoring a technician visits the site approximately once per month for maintenance. When a problem is found or maintenance is required the technician schedules the work appropriately in compliance with conditions of approval and lease agreements regarding maintenance timing and scope.

Alternative Site Analysis

Based on our research as stated above, as well the requirements and intent of the City of Santa Barbara's Zoning Ordinance(s) and the needs of Verizon Wireless' RF

engineers the proposed location should be considered the most viable, and desirable for placement of a new telecommunications facility.

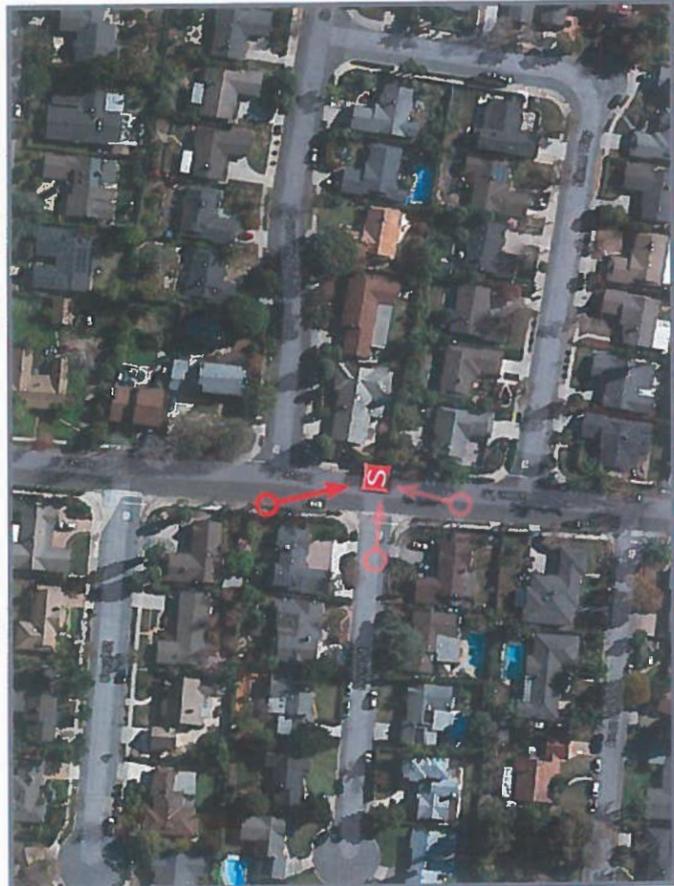
It is usually Verizon's preference to pursue a collocation whenever it is possible. The costs to get the site to market are, in general less than a 'new-build', and the zoning process is typically less restrictive, therefore it is always in our best interest to investigate and fully vet the possibility for collocation where there opportunities exist. Unfortunately in this instance there are no collocation opportunities within the search area as no built sites were observed.



GROVE LANE SC 1

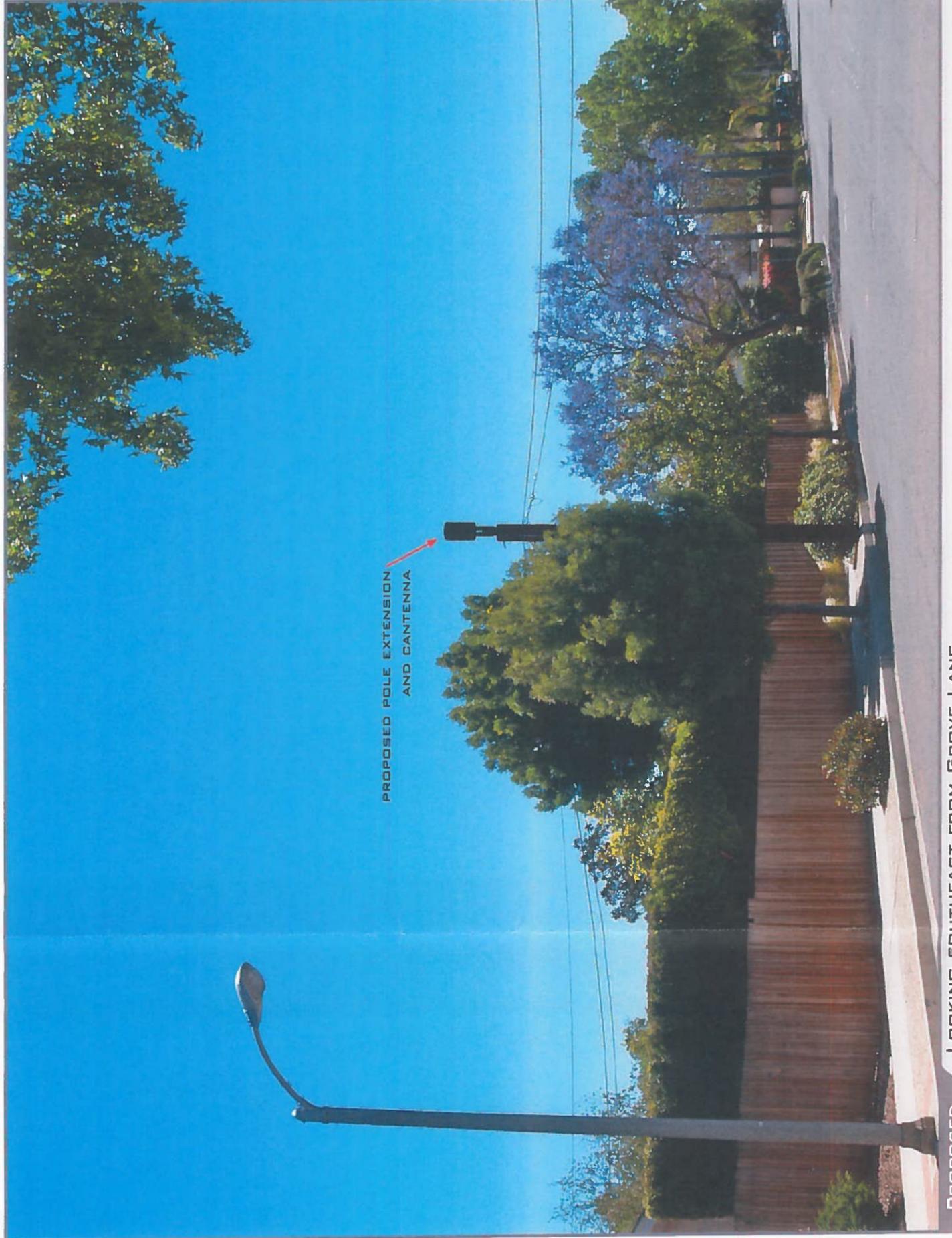
PUBLIC ROW ADJACENT TO: 3665 SUNSET DRIVE SANTA BARBARA CA 93105

VIEW 2



LOCATION

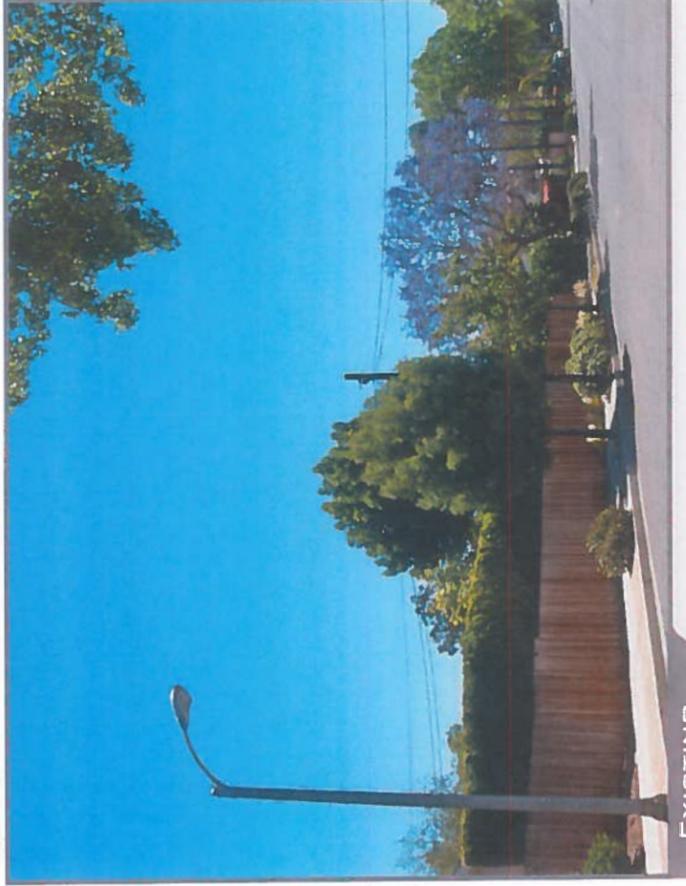
©2015 Google Maps



PROPOSED POLE EXTENSION AND ANTENNA

PROPOSED

LOOKING SOUTHEAST FROM GROVE LANE



EXISTING

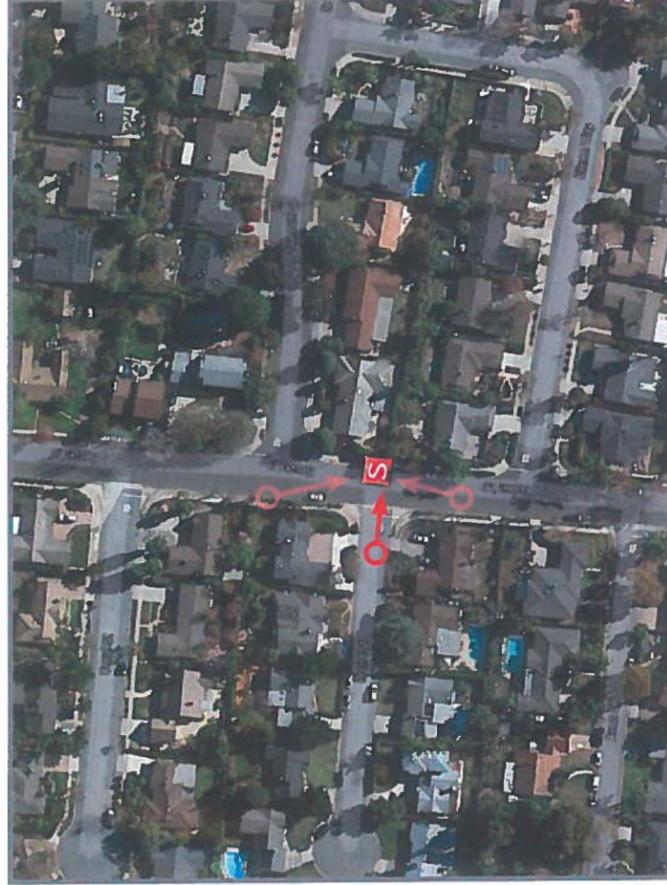


GROVE LANE SC 1

PUBLIC ROW ADJACENT TO: 3665 SUNSET DRIVE SANTA BARBARA CA 93105

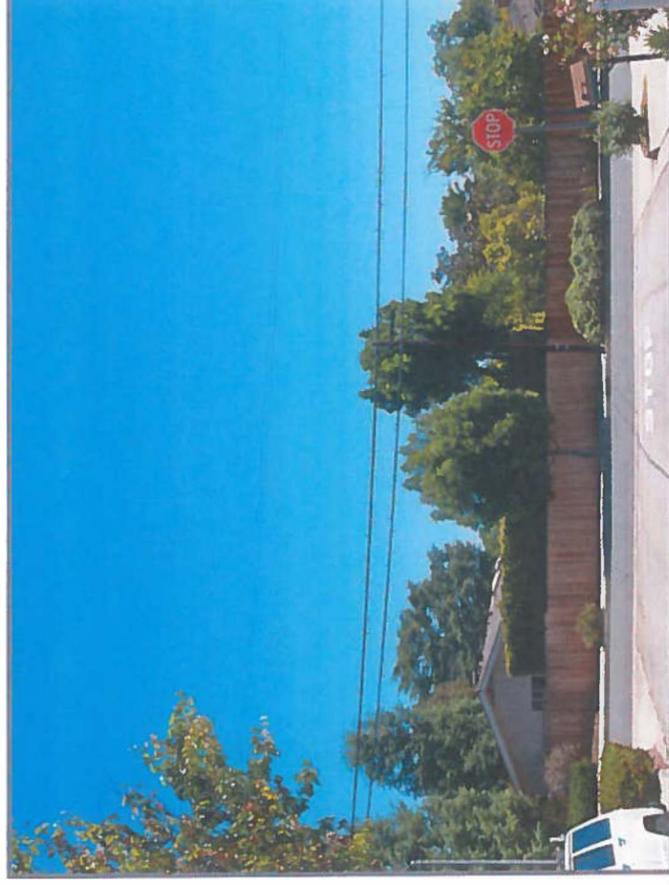


VIEW 3



LOCATION

©2015 Google Maps



EXISTING



PROPOSED

LOOKING EAST FROM BRENT STREET



GROVE LANE SC 1

PUBLIC ROW ADJACENT TO: 3665 SUNSET DRIVE SANTA BARBARA CA 93105

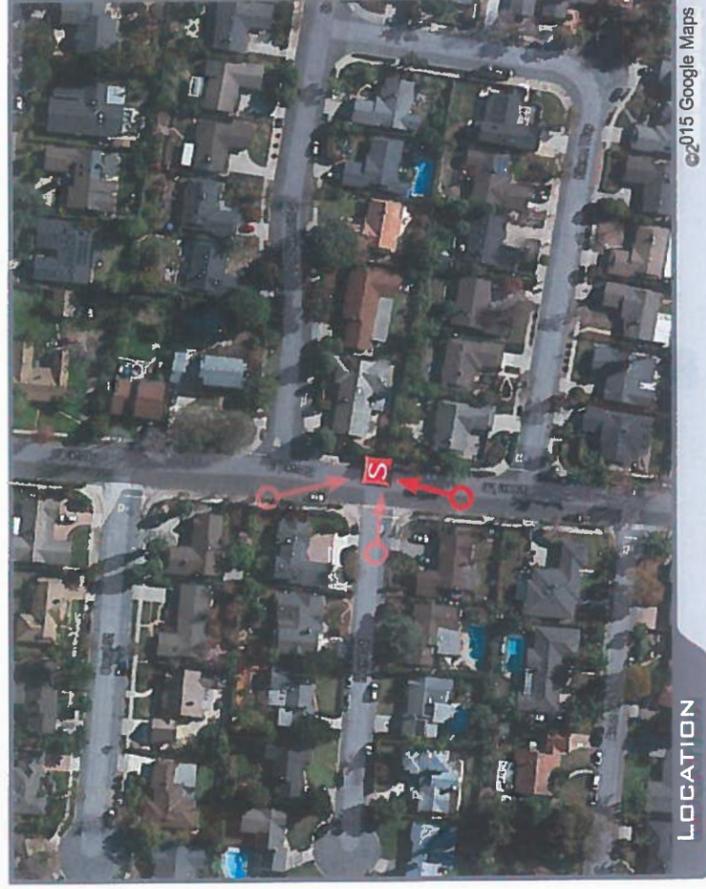
CITY OF SANTA BARBARA
PLANNING DIVISION

AEsimS.COM
877.9AE.SIMS



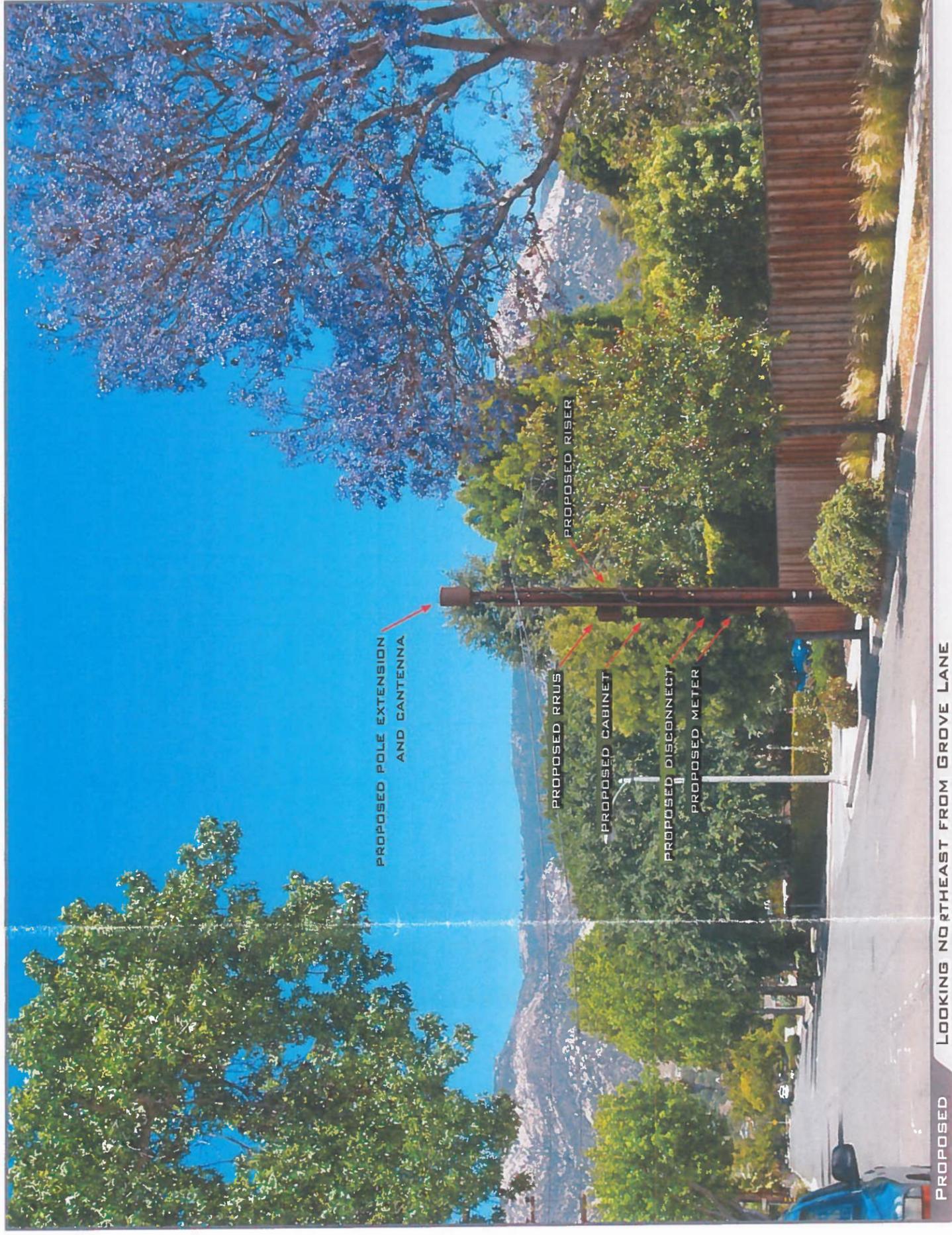
RECEIVED
MAR 02 2016

VIEW 1



LOCATION

©2015 Google Maps



EXISTING

PROPOSED LOOKING NORTHEAST FROM GROVE LANE

ABR MINUTES August 17, 2015

CONCEPT REVIEW - NEW ITEM: PUBLIC HEARING

7. 300 BLK GROVE LANE

(6:30)

Assessor's Parcel Number: ROW-002-616

Application Number: MST2015-00381

Agent: Sequoia Deployment Services, Inc.

(Proposal for a new small cell wireless communications facility for Verizon including one 2'-0" diameter Cantenna and associated equipment to be mounted on top of an existing 25'-0" tall wooden utility pole. Also proposed is a new meter pedestal and pad with equipment cabinet and ground level handhole.)

(Action may be taken if sufficient information is provided. Requires No Visual Impact Findings and a Public Works Encroachment Permit.)

Actual time: 6:58 p.m.

Present: Paul V. Gerst, Agent for Verizon Wireless.

Public comment opened at 7:03 p.m. As no one wished to speak, public comment was closed.

Motion: Continued indefinitely to Full Board with comments:

- 1) Return with revised drawings showing the cabinet located to the south side of the pole.
- 2) Provide appropriate landscaping around the cabinet on both sides.
- 3) The Board finds the proposed cantenna and associated equipment acceptable as submitted.

Action: Wittausch/Poole, 4/1/0. Motion carried. (Hopkins opposed, Gradin/Cung absent).

ABR MINUTES March 28, 2016

CONCEPT REVIEW - CONTINUED ITEM

4. 300 BLK GROVE LANE

(4:35) Assessor's Parcel Number: ROW-002-616
Application Number: MST2015-00381
Agent: Sequoia Deployment Services, Inc.

(Proposal for a new small cell wireless communications facility for Verizon including one 2'-0" diameter Cantenna and associated equipment to be mounted on top of an existing 25'-0" tall wooden utility pole. ~~Also proposed is a new meter pedestal and pad with equipment cabinet and ground level handhole.~~)

(Second Concept Review. Action may be taken if sufficient information is provided. Requires No Visual Impact Findings and a Public Works Encroachment Permit. Project was last reviewed on August 17, 2015.)

Actual time: 4:32 p.m.

Present: Pete Shubin, Agent for Verizon Wireless.

Public comment opened at 4:35 p.m.

- 1) Jan Kaestner (neighbor), opposition; expressed aesthetic concerns regarding the need for more wireless equipment on poles near his property.

Public comment closed at 4:37 p.m.

Motion 1: Project Design and Final Approval as submitted.

Action: Cung/Tripp, 4/0/0. Motion carried. (Gradin/Miller/Wittausch absent).

The ten-day appeal period was announced.

Motion 2: To reopen Item #4, 300 Block Grove Lane to correct the motion to include the findings made for no adverse visual impacts resulting from wireless antennas and equipment installation in consideration of compatibility with nearby buildings, appropriate screening, site location, and antennae color and size.

Action: Hopkins/Tripp, 4/0/0. Motion carried. (Gradin/Miller/Wittausch absent).

**Verizon Wireless • Proposed Base Station (Site No. 285359 “Grove Lane SC1”)
3665 Sunset Drive • Santa Barbara, California**

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate the base station (Site No. 285359 “Grove Lane SC1”) proposed to be located near 3665 Sunset Drive in Santa Barbara, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

Executive Summary

Verizon proposes to install a bi-sector cylindrical antenna on the utility pole sited west of 3665 Sunset Drive in Santa Barbara. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission (“FCC”) evaluate its actions for possible significant impact on the environment. A summary of the FCC’s exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

| Wireless Service | Frequency Band | Occupational Limit | Public Limit |
|------------------------------------|----------------|-------------------------|-------------------------|
| Microwave (Point-to-Point) | 5–80 GHz | 5.00 mW/cm ² | 1.00 mW/cm ² |
| WiFi (and unlicensed uses) | 2–6 | 5.00 | 1.00 |
| BRS (Broadband Radio) | 2,600 MHz | 5.00 | 1.00 |
| WCS (Wireless Communication) | 2,300 | 5.00 | 1.00 |
| AWS (Advanced Wireless) | 2,100 | 5.00 | 1.00 |
| PCS (Personal Communication) | 1,950 | 5.00 | 1.00 |
| Cellular | 870 | 2.90 | 0.58 |
| SMR (Specialized Mobile Radio) | 855 | 2.85 | 0.57 |
| 700 MHz | 700 | 2.40 | 0.48 |
| [most restrictive frequency range] | 30–300 | 1.00 | 0.20 |

General Facility Requirements

Base stations typically consist of two distinct parts: the electronic transceivers (also called “radios” or “channels”) that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables. A small antenna for reception of GPS signals is also required, mounted with a clear view of the sky.

**Verizon Wireless • Proposed Base Station (Site No. 285359 “Grove Lane SC1”)
3665 Sunset Drive • Santa Barbara, California**

Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. This means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

Computer Modeling Method

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, “Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation,” dated August 1997. Figure 2 describes the calculation methodologies, reflecting the facts that a directional antenna’s radiation pattern is not fully formed at locations very close by (the “near-field” effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the “inverse square law”). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

Site and Facility Description

Based upon information provided by Verizon, including construction drawings by M.Squared Engineers, dated February 5, 2015, it is proposed to install one Amphenol Model CWB070X06F bi-sector cylindrical antenna on top of the existing 25-foot utility pole sited along Grove Lane west of the residence located at 3665 Sunset Drive in Santa Barbara. The antenna would be mounted at an effective height of about 26½ feet above ground. For the limited purposes of this study, it is assumed that the antenna would employ no downtilt and that the maximum effective radiated power in any direction would be 2,140 watts, representing simultaneous operation at 1,610 watts for AWS and 530 watts for 700 MHz service; no operation on PCS or cellular frequencies is assumed to be proposed from this site. There are reported no other wireless telecommunications base stations at the site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.031 mW/cm², which is 5.9% of the applicable public exposure limit. The maximum calculated level at the top-floor elevation of any nearby residence* is 7.3% of the public exposure limit. It should be noted that these results include several “worst-case” assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

* Located at least 30 feet away, based on photographs from Google Maps.

**Verizon Wireless • Proposed Base Station (Site No. 285359 “Grove Lane SC1”)
3665 Sunset Drive • Santa Barbara, California**

Recommended Mitigation Measures

Due to its mounting location and height, the Verizon antenna would not be accessible to unauthorized persons, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training, to include review of personal monitor use and lockout/tagout procedures, be provided to all authorized personnel who have access to the antenna, including employees and contractors of Verizon and of the utility company. No access within 14 feet directly in front of the antenna itself, such as might occur during certain maintenance activities, should be allowed while the base station is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. It is recommended that explanatory signs[†] be posted on the pole at or below the antenna, readily visible from any angle of approach to persons who might need to work within that distance.

Conclusion

Based on the information and analysis above, it is the undersigned’s professional opinion that operation of the base station proposed by Verizon Wireless near 3665 Sunset Drive in Santa Barbara, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations. Training authorized personnel and posting explanatory signs is recommended to establish compliance with occupational exposure limits.

[†] Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required. Signage may also need to comply with the requirements of California Public Utilities Commission General Order No. 95.

**Verizon Wireless • Proposed Base Station (Site No. 285359 "Grove Lane SC1")
3665 Sunset Drive • Santa Barbara, California**

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration No. E-20309, which expires on March 31, 2017. This work has been carried out under her direction, and all statements are true and correct of her own knowledge except, where noted, when data has been supplied by others, which data she believes to be correct.



Andrea L. Bright

Andrea L. Bright, P.E.
707/996-5200

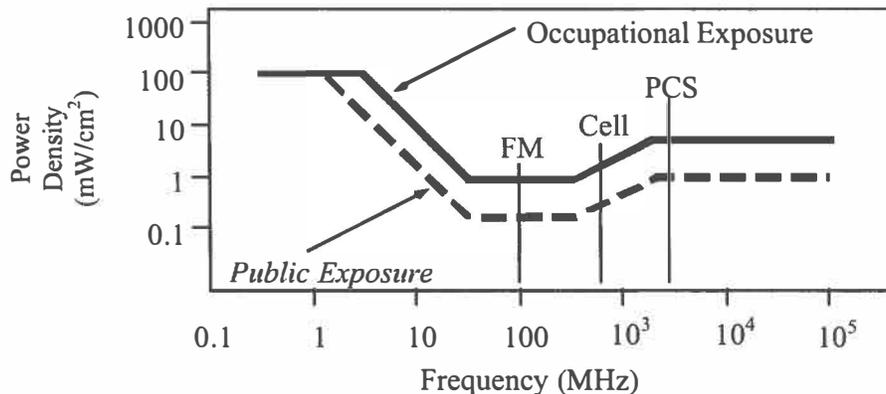
April 28, 2015

FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission (“FCC”) to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, “Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields,” published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements (“NCRP”). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, “Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,” includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

| Frequency Applicable Range (MHz) | Electromagnetic Fields (<i>f</i> is frequency of emission in MHz) | | | | | |
|---|--|----------------|-------------------------------------|---------------|--|--------------------------|
| | Electric Field Strength (V/m) | | Magnetic Field Strength (A/m) | | Equivalent Far-Field Power Density (mW/cm ²) | |
| 0.3 – 1.34 | 614 | <i>614</i> | 1.63 | <i>1.63</i> | 100 | <i>100</i> |
| 1.34 – 3.0 | 614 | <i>823.8/f</i> | 1.63 | <i>2.19/f</i> | 100 | <i>180/f²</i> |
| 3.0 – 30 | 1842/f | <i>823.8/f</i> | 4.89/f | <i>2.19/f</i> | 900/f ² | <i>180/f²</i> |
| 30 – 300 | 61.4 | <i>27.5</i> | 0.163 | <i>0.0729</i> | 1.0 | <i>0.2</i> |
| 300 – 1,500 | 3.54√ <i>f</i> | <i>1.59√f</i> | √ <i>f</i> /106 | <i>√f/238</i> | <i>f/300</i> | <i>f/1500</i> |
| 1,500 – 100,000 | 137 | <i>61.4</i> | 0.364 | <i>0.163</i> | 5.0 | <i>1.0</i> |



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.



RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission (“FCC”) to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

Near Field.

Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$, in mW/cm²,

and for an aperture antenna, maximum power density $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$, in mW/cm²,

where θ_{BW} = half-power beamwidth of the antenna, in degrees, and

P_{net} = net power input to the antenna, in watts,

D = distance from antenna, in meters,

h = aperture height of the antenna, in meters, and

η = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

Far Field.

OET-65 gives this formula for calculating power density in the far field of an individual RF source:

power density $S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$, in mW/cm²,

where ERP = total ERP (all polarizations), in kilowatts,

RFF = relative field factor at the direction to the actual point of calculation, and

D = distance from the center of radiation to the point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain in the vicinity, to obtain more accurate projections.



CONDITIONAL USE PERMITS

SBMC §28.94.030 Uses Permitted in Specific Zones. (Excerpt)

The following uses may be permitted in the zones herein indicated upon the granting of a Conditional Use Permit, except that where another section of this Title specifically allows such use in a zone in conflict with this section, the provision of such other section shall apply and a Conditional Use Permit shall not be required...

DD. Television, Radio and Cellular Telephone Antennas in all zones, subject to the following provisions:

1. Exemptions. The following are exempt from the requirement of a Conditional Use Permit, and shall be considered a permitted use in all zones:

a. Repairs and maintenance of existing facilities, whether emergency or routine, or replacement of transmitters, antennas, or other components of existing permitted facilities, provided there is little or no change in the visual appearance or any increase in radio frequency emission levels.

b. Satellite Dish Antennas designed or used for the reception of television or other electronic communications signal broadcast or relayed from an earth satellite.

c. One or more cellular telephone antennas or paging antennas, provided that the Community Development Director finds as follows:

(1) Height: The height of the antenna and supporting structure does not exceed Municipal Code height limits set forth in Sec. 28.87.260, except where said antenna is being installed on an existing structure, in which event the height limit is measured from the highest point of the building and cannot exceed 15 feet above the building height.

(2) Separation: There is at least 100 feet between the base of the antenna support structure and the nearest dwelling unit.

(3) Access Control: The applicant establishes that the general public will be excluded from an area at least 50 feet in all directions from the antenna if antenna is not at least 10 feet off the ground. If the antenna is at least 10 feet above grade, this distance may be reduced to 30 feet.

(4) No Resource Impacts: The project will have no significant impact on any biological or archeological resources and will not generate additional traffic. The applicant may be required to provide information to the Community Development Director regarding these matters.

(5) No Visual Impacts: The project has been reviewed by the Architectural Board of Review, or the Historic Landmarks Commission if the property is located in the El Pueblo Viejo Landmark District or another landmark district or if the property contains a designated City Landmark. The Board and Commission may take action regarding the location of the antenna(s) on the site, color and size of the proposed antennas so as to minimize any adverse visual impacts.

d. A microcell, provided it has been reviewed by the Architectural Board of Review, or the Historic Landmarks Commission if the property is located in the El Pueblo Viejo Landmark District or another landmark district or if the property or a structure thereon is a designated City Landmark. The Board and Commission may take action regarding the location of the antenna(s) on the site, color and size of the proposed antennas so as to minimize any adverse visual impacts.

CITY OF SANTA BARBARA
DESIGN REVIEW GUIDELINES FOR
WIRELESS COMMUNICATION FACILITIES/ANTENNAS

INTENT AND PURPOSE OF GUIDELINES:

The intent of these guidelines is to maintain the aesthetic and historic nature of commercial district or neighborhoods with appropriate siting of cellular antennas and towers. The purpose is also to require all wireless communication facilities to minimize visual impacts by providing for installations that are designed carefully, screened with landscaping or camouflaged to maintain the aesthetic quality of the surrounding area. The following design standards shall apply:

1. Antennas should be screened or hidden from the public view by the following methods: designed as architectural elements, screened with enclosures or landscaping. Screening materials shall consist of materials and colors consistent with the surrounding backdrop and/or textured to match the existing structure.
2. Antennas mounted on architecturally significant structures or architecturally significant details of the building should be covered with appropriate casings, which are manufactured to match existing architectural features found on the building.
3. Where feasible, antennas can be placed directly above, below or incorporated with vertical design elements of a building to help in camouflaging.
4. Equipment shelters or cabinets shall be screened from the public view by using landscaping, or materials and colors consistent with the surrounding backdrop.
5. Equipment shelters or cabinets shall be consistent with the general character of the commercial district or neighborhood.
6. Screening enclosures shall be allowed when the design is architecturally compatible with the building.
7. All exposed cables, conduits, surface mounted wires shall be concealed or painted out to match the building.
8. If a facility is to be installed in or on a historic building or structure, additional measures shall be required so as to not alter the historic significance of the building or structure.
9. The placement of antennas on buildings and other structures is encouraged and preferred over the installation of towers or monopoles. Where feasible, co-location of facilities, and minimum number of antennas shall be evaluated to determine the proposed facility has been designed carefully.
10. Lighting of these facilities is not allowed.