COUNTY OF SAN MATEO PLANNING AND BUILDING DEPARTMENT

DATE: July 15, 2021

TO: Zoning Hearing Officer

FROM: Planning Staff

SUBJECT: Consideration of a Use Permit renewal, pursuant to Section 6512.6 of the

San Mateo County Zoning Regulations, to allow the continued operation of a wireless telecommunication facility operated by Verizon, located at 7400 Stage Road in the unincorporated San Gregorio area of San Mateo County.

County File Number: PLN 2007-00469 (Verizon/Armstrong)

PROPOSAL

The project applicant, John Merritt of Empire Media Corp. (EMC), proposes on behalf of American Tower Corporation (ATC) to renew a Use Permit to allow the continued operation of a wireless telecommunication facility operated by Verizon Wireless, located at 7400 Stage Road in the unincorporated rural Midcoast area of San Mateo County.

The existing wireless telecommunication facility consists of three 15-foot tall monopoles, each with 6-foot tall Verizon panel antennas. In addition, the facility also includes an 800 sq. ft. equipment area enclosed with chain link fencing. No modifications to the existing facility, nor an expansion to the existing lease area are proposed. The project site is also developed with two other existing cellular facilities: (1) an AT&T facility (PLN 2003-00487) with three monopoles (each with two antennas) and 500 sq. ft. equipment area, and (2) a Sprint/T-Mobile facility (PLN 1999-00776) with three monopoles (each with two antennas) and 300 sq. ft. equipment area. No modifications to the existing facility, nor an expansion to the existing lease area are proposed.

RECOMMENDATION

That the Zoning Hearing Officer approve the Use Permit renewal, County File No. PLN 2007-00469, by making the required findings and adopting the conditions of approval listed in Attachment A.

BACKGROUND

Report Prepared By: Bryan Albini, Project Planner; balbini@smcgov.org

Applicant: John Merritt of Empire Media Corporation, for ATC Sequoia, LLC (American Tower Corporation)

Owner: Thomas Hudson Armstrong Trust

Location: 7400 Stage Road, San Gregorio

APN: 081-240-020

Parcel Size: 49.25 acres

Existing Zoning: PAD/CD (Planned Agriculture District/Coastal Development)

General Plan Designation: Agriculture

Sphere of Influence: N/A

Existing Land Use: Single-family residence, dry grazing, and other carrier cellular facilities

Flood Zone: FEMA Flood Zone C (Area of Minimal Flooding); Community Panel No. 060311325C, effective date October 16, 2012.

Environmental Evaluation: The project is categorically exempt pursuant to Section 15301, Class 1, of the California Environmental Quality Act (CEQA) Guidelines for the continued operation of existing public or private facilities involving no physical changes or expansion of use.

Setting: The parcel is located approximately 0.25 miles south of the intersection of La Honda Road (Highway 84) and Stage Road. Cabrillo Highway (Highway 1) is approximately 0.83 miles from the project site. The project parcel borders other agriculturally zoned parcels. The parcel is improved with a single-family dwelling, agricultural-related structures, and three existing cellular facilities. Agriculture on the parcel consists of dry grazing. Highway 84 is a County Scenic Corridor and Highway 1 is a State Scenic Corridor. The equipment structure and monopoles are not located on prime soils.

Chronology:

<u>Date</u>	Action
February 26, 2014 -	Use Permit Amendment approved by the Planning Commission to allow one additional 15-foot monopole (with two panels) to the existing site.
October 7, 2020 -	Received application for Use Permit renewal for Planning case number PLN 2007-00469 (Verizon) with no amendments proposed.
May 28, 2020	Project deemed complete.
July 15, 2021	Zoning Hearing Officer public hearing.

DISCUSSION

A. KEY ISSUES

1. <u>Conformance with the General Plan</u>

The project continues to conform with the applicable General Plan policies for Soil Resources and Visual Quality as no physical changes to the existing permitted facility are proposed. Conditions of approval requiring paint colors for existing monopoles and equipment cabinets will remain to maintain visual quality.

2. Conformance with Zoning Regulations

The project site is located within the Planned Agriculture District/Coastal Development (PAD/CD) Zoning District. Wireless telecommunications facilities are allowed in any zoning district pursuant to a Use Permit, for which this facility seeks to continue operating under; no physical changes are proposed to the lease area or equipment.

3. Conformance with Wireless Telecommunication Facilities Ordinance

Staff has determined that the project complies with the applicable standards of the Wireless Telecommunication Facilities (WTF) Ordinance, as discussed below.

a. Development and Design Standards

Section 6512.2.E – G seek to minimize and mitigate visual impacts from public views by designing facilities to blend in with the surrounding environment, painting equipment to blend with the surrounding environment and/or buildings, and also requiring facilities to be constructed of non-reflective materials.

The existing facility blends in with the surrounding environment with natural paint colors and is constructed of non-reflective materials. No physical changes to the facilities are proposed, with the last minor modifications being approved on May 7, 2014 (BLD 2014-00817).

Section 6512.2.H and I require facilities to comply with all requirements of the underlying zoning district; except for the allowance that towers can exceed the height limit for the zoning district provided in no case shall a tower exceed 150 feet.

No physical changes are proposed to the existing permitted facility, including no changes proposed to the maximum permitted monopole height limit of 15-feet, which is below the 36-foot maximum height allowed by the PAD district.

b. Performance Standards

The project meets the required performance standards of Section 6512.3 for lighting, licensing, provision of a permanent power source, timely removal of the facilities, and visual resource protection. No physical changes to the facility are proposed, the facility operates under licenses issued from both the Federal Communications Commission (FCC) and the California Public Utilities Commission (CPUC), power for the facility will continue to be provided by PG&E, visual impacts will continue to be minimal, and conditions of approval will require maintenance and/or removal of the facility when it is no longer in operation.

c. Application Requirements

Section 6512.5.B(10) requires projects that are capable of accommodating additional facilities to provide a ten-year buildout plan.

The project parcel is currently leased by all the three major carriers (AT&T, Sprint, Verizon), each under separate Use Permits. Any future interest to either co-locate or modify existing sites would be processed under each carrier's respective individual permit. Any future co-location would need to pursue its own individual Use Permit and environmental documents, unless these requests are submitted concurrently and evaluated jointly. The next opportunity to consolidate the three facilities is in March 2022 when the AT&T facility Use Permit expires. No physical changes to the current facility are proposed under the subject project.

d. Use Permit Term, Renewal and Expiration

Section 6512.6 allows an applicant to file for a renewal of the Use Permit and pay the applicable renewal application fees 6 months prior to expiration with the County Planning and Building Department, if continuation of the use is desired.

The applicant is renewing the Use Permit - Planning case number PLN 2007-00469 (Verizon), with no physical changes proposed. The applicant has provided the standard information and application fees required for a Use Permit renewal.

4. Conformance with Use Permit Findings

In order to approve the subject Use Permit renewal, the Zoning Hearing Officer must make the following findings:

a. That the establishment, maintenance and/or conducting of the use will not, under the circumstances of the particular case, result in a significant

adverse impact to coastal resources, or be detrimental to the public welfare or injurious to property or improvements in the neighborhood.

The telecommunication facility is located in a rural unincorporated area of San Mateo County, which minimizes impacts to surrounding residences and businesses. With regard to visual impacts, the monopole and antennas look similar to other telephone pole/utility structures in the area and are not visible from public roads due to vegetation and topographic obstructions. Continued operation of the facility will not result in adverse impacts to coastal resources as no physical changes to the facility are proposed.

A radio frequency (RF) report prepared by Kathryn G. Tesh, of Lawrence Behr Associates, Inc., (Attachment F) confirms that American Tower Corporation will be compliant with the Federal Communications Commission (FCC) Rules and Regulations, as described in Office of Engineering and Technology Bulletin 65 based on theoretical analysis of Maximum Permissible Exposure levels. The project site is located on privately owned land and is not easily accessible to the general public. To continue to maintain compliance with Federal and State standards, a condition will continue to require the project applicant to submit to the Current Planning Section copies of valid FCC and CPUC licenses.

b. That the telecommunication facility is necessary for the public health, safety, convenience, or welfare of the community.

Staff has determined that continued operation and maintenance of the existing cellular facility at this location will allow for continued cellular communication coverage for private citizens and public agencies. This facility has been in existence for over ten years. Community members, businesses, and residents have come to rely on coverage provided by these sites to facilitate daily conversation and to provide assistance in emergency situations. As stated above, no physical changes or major modifications to the facility are proposed with this use permit renewal.

5. Conformance with Conditions of Last Use Permit Approvals

Staff has reviewed the previous Use Permit conditions of approval for (PLN 2007-00469), last approved March 3, 2014, and have determined that the commercial carrier is in compliance with all previous conditions, see Attachments E. No physical changes are proposed as part of the renewal. Previous conditions that remain relevant, along with new conditions, are included in Attachment A of this staff report.

B. **ENVIRONMENTAL REVIEW**

The project is categorically exempt pursuant to Section 15301, Class 1, of the CEQA Guidelines for the continued operation of existing public or private facilities involving no alterations or expansion of use as no physical changes are proposed.

C. <u>REVIEWING AGENCIES</u>

Building Inspection Section Cal-Fire

ATTACHMENTS

- A. Recommended Findings and Conditions of Approval
- B. Location Map
- C. Project Plans
- D. Photos of Existing Wireless Telecommunication Facility
- E. Verizon (PLN 2007-00469) Use Permit (Amendment) Decision Letter, dated March 3, 2014
- F. Verizon (PLN 2007-00469) Use Permit Decision Letter, dated November 13, 2008
- G. Radio Frequency Emissions Compliance Report for American Tower Corporation (ATC), dated August 25, 2020

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County of San Mateo Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2001-00469 Hearing Date: July 15, 2021

Prepared By: Bryan Albini, For Adoption By: Zoning Hearing Officer

Project Planner

RECOMMENDED FINDINGS

For the Environmental Review, Find:

1. That the project is categorically exempt pursuant to Section 15301, Class 1, of the CEQA Guidelines for the continued operation of existing public or private facilities involving no physical changes and no expansion of use.

Regarding the Use Permit, Find:

- 2. That the establishment, maintenance and/or conducting of the use will not, under the circumstances of the particular case, result in a significant adverse impact to coastal resources, or be detrimental to the public welfare or injurious to the property or improvements in said neighborhood because the facility meets current Federal Communications Commission (FCC) standards and has been conditioned to maintain valid FCC and California Public Utilities Commission (CPUC) licenses. The telecommunication facility is located in a rural area of San Mateo County, which minimizes impacts to surrounding residences and businesses. With regard to visual impacts, the tower and antennas look similar to other telephone pole/utility structures in the area. No physical changes to the facility are proposed. Furthermore, the RF report confirms the telecommunication facility does not exceed the Federal Communications Commission (FCC) General Population limits, and thus does not cause significant impact to the environment.
- 3. That the wireless telecommunication facility is necessary for the public health, safety, convenience or welfare since it provides cellular coverage in the area for both public and private users who have come to rely on coverage provided by the facility for daily conversation and to provide assistance in emergency situations.

RECOMMENDED CONDITIONS OF APPROVAL

<u>Current Planning Section</u>

1. This approval applies only to the proposal, documents, and plans described in this report and materials approved by the Zoning Hearing Officer on July 15, 2021. The Community Development Director may approve minor revisions or modifications to

- the project if they are consistent with the intent of and in substantial conformance with this approval.
- 2. This permit shall be valid until July 15, 2031, ten (10) years from the date of approval. Renewal of this permit shall be applied for six (6) months prior to expiration to the Planning and Building Department and shall be accompanied by the renewal application and fees applicable at that time.
- 3. This Use permit shall be for the proposed project only. Any change or change in intensity of use shall require an amendment to the applicable Use Permit.

 Amendments to the Use Permit requires an application for amendment, payment of applicable fees, and consideration at a public hearing.
- 4. If a less visually obtrusive/reduced antenna technology becomes available for use during the life of this project, the applicant shall present a redesign incorporating this technology into the project for review by the Community Development Director and any parties that have expressed an interest.
- 5. The applicant shall maintain all necessary licenses and registrations from the Federal Communications Commission (FCC) and any other applicable regulatory bodies for the operation of the subject facility at this site. The applicant shall supply the Planning Department with evidence of such licenses and registrations. If any required license is ever revoked, the applicant shall inform the Planning Department of the revocation within ten (10) days of receiving notice of such revocation.
- 6. This facility and all equipment associated with it shall be removed in its entirety by the applicant within ninety (90) days if the FCC license and registration are revoked or if the facility is abandoned or no longer needed. The owner and/or operator of the facility shall notify the Planning Department upon abandonment of the facility.
- 7. There shall be no external lighting associated with this use other than the existing work light on the equipment facility door. Wireless telecommunication facilities shall not be lighted or marked unless required by the FCC or Federal Aviation Administration (FAA). The existing work light for the equipment facility door.
- 8. The applicant shall be responsible for painting and/or maintaining the antennas, monopole, and equipment cabinets in the originally approved color and painted a dark green, as needed, to blend in with the surrounding vegetation; finishes shall be non-reflective. Any proposal to change the color shall be reviewed and approved by the Planning Department prior to painting.
- 9. The fencing surrounding the equipment structure shall be maintained with coated black vinyl and have dark green plastic slats replaced as needed. No barbed wire shall be allowed as part of the fencing surrounding the facility.
- 10. Access to each of the monopole locations shall utilize either the footpath which loops north from the equipment structure area up the hill to the monopole site or the

- disturbed cable run area. No additional vegetation shall be removed to provide access to the monopole site.
- 11. This permit does not authorize the removal of any trees. Removal of any tree with a diameter greater than 12 inches as measured 4.5 feet above the ground shall require a separate tree removal permit.
- 12. Within 10 days of final approval of this renewal, the applicant shall install/maintain all necessary RF alert signage to ensure continued compliance with the FCC Rules and Regulations.

Building Inspection Section

13. The applicant shall obtain a building permit prior to any modifications or new construction.

Cal-Fire

14. The applicant shall maintain the required road and site improvements as detailed by Cal-Fire, to its satisfaction, through the duration of this permit.

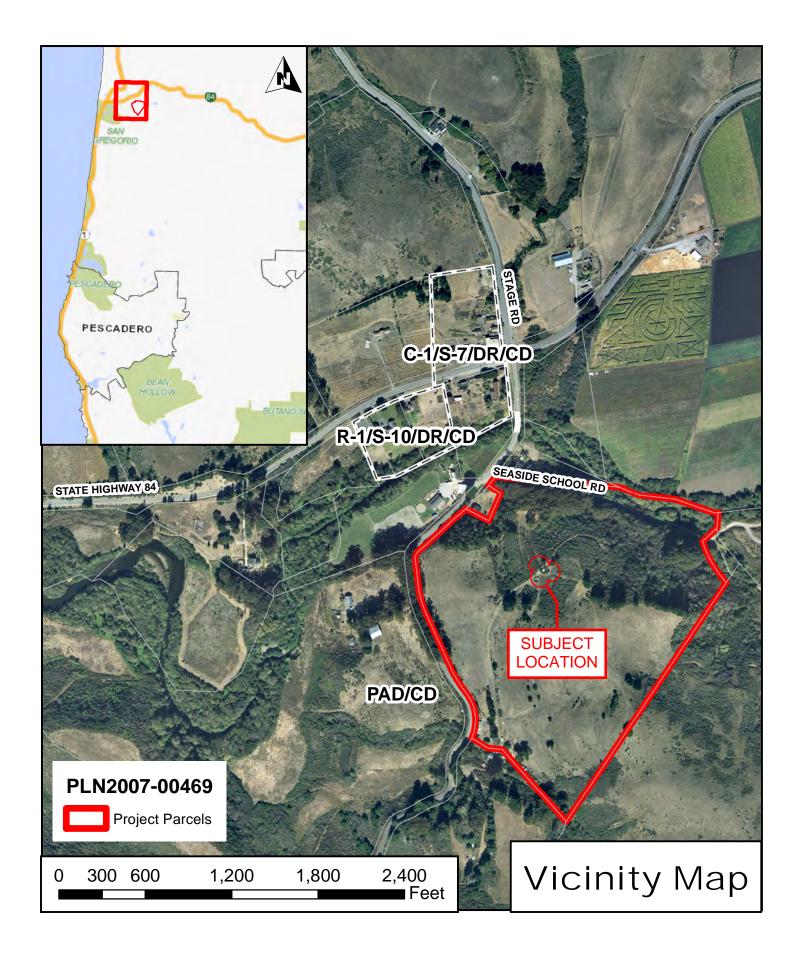
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COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT

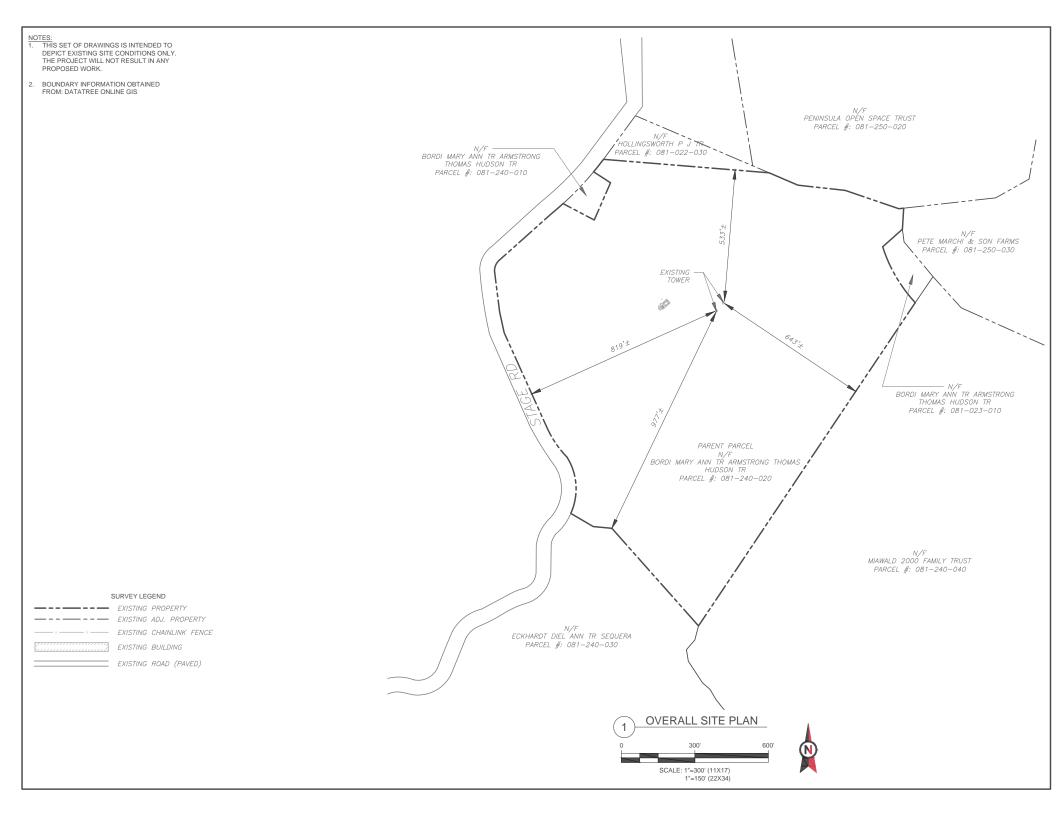
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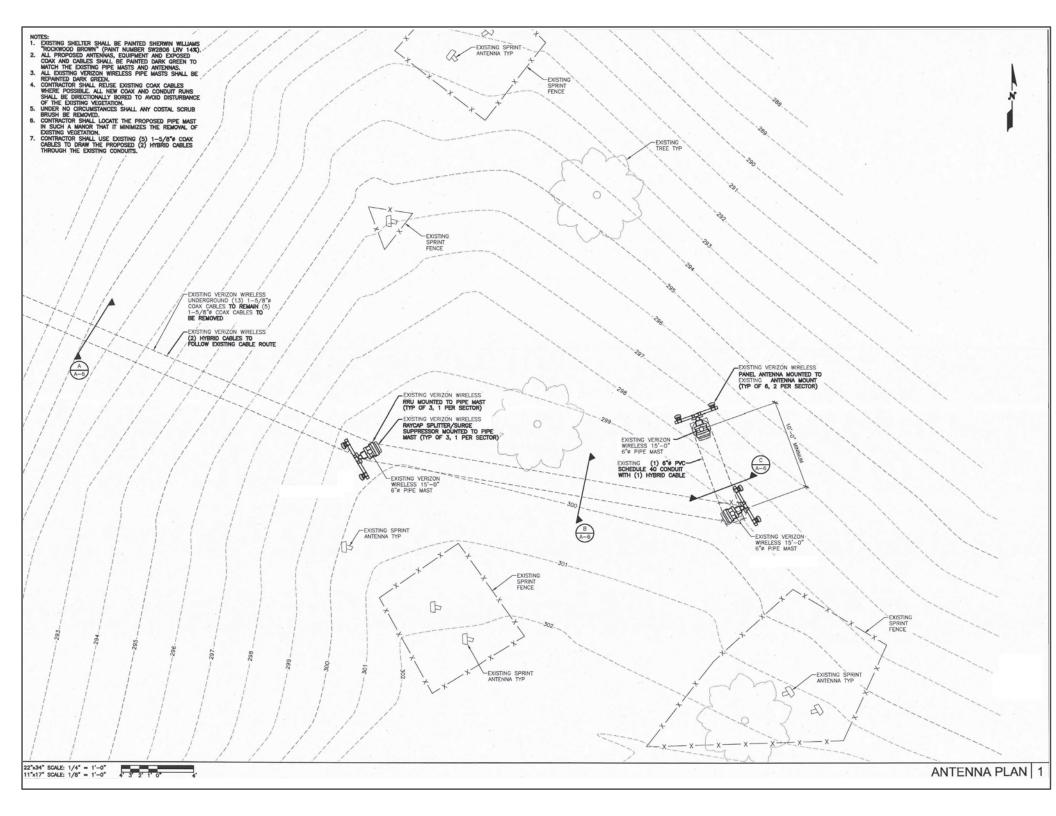


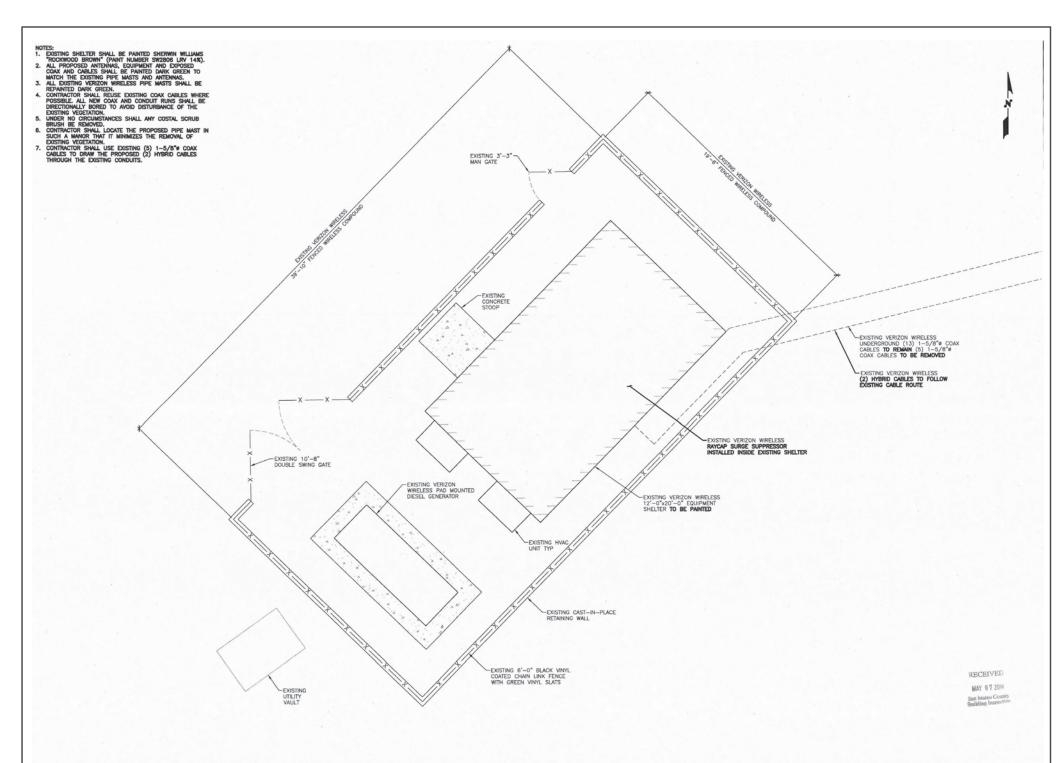


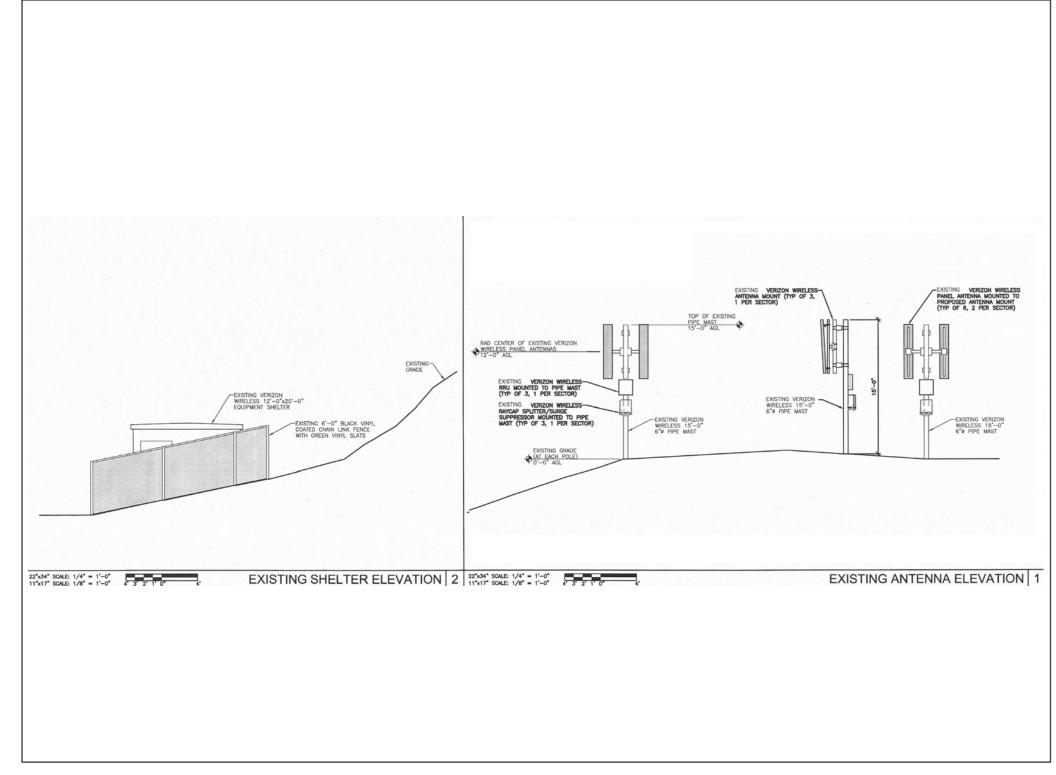
COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT C

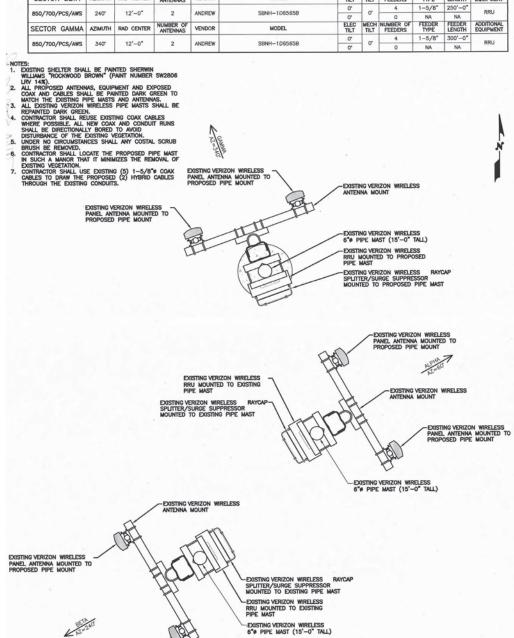








SECTOR ALPHA	AZIMUTH	RAD CENTER	NUMBER OF ANTENNAS	VENDOR	MODEL	FLEC	MECH	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	ADDITIONA EQUIPMEN
850/700/PCS/AWS 60		0" 12'-0"	2	ANDREW	SBNH-1D6565B	0.	σ	4 -	1-5/8"	300'-0"	RRU
	60					0,		1	HYBRID	310'-0"	
SECTOR BETA	AZIMUTH	RAD CENTER	NUMBER OF ANTENNAS	VENDOR	MODEL	ELEC TILT	MECH	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	ADDITION/ EQUIPMEN
		12'-0"	2	ANDREW	SBNH-1D6565B	0,	0.	4	1-5/8"	250'-0"	RRU
850/700/PCS/AWS	240*					0,		0	NA	NA	
SECTOR GAMMA	AZIMUTH	RAD CENTER	NUMBER OF ANTENNAS	VENDOR	MODEL	ELEC	MECH TILT	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	ADDMON EQUIPMEN
850/700/PCS/AWS	340*	12'-0"	2	ANDREW	SBNH-106565B	0,	0.	4	1-5/8"	300'-0"	RRU
						0,		0	NA	NA.	



EXISTING VERIZON WIRELESS - PANEL ANTENNA MOUNTED TO PROPOSED PIPE MOUNT



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT D







COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT E

County of San Mateo



Planning & Building Department

455 County Center, 2nd Floor Redwood City, California 94063 650/363-4161 Fax: 650/363-4849

Mail Drop PLN122 plngbldg@smcgov.org www.co.sanmateo.ca.us/planning

March 3, 2014

Chris Fowler for Verizon Wireless 14960 Karl Avenue Monte Sereno, CA 95030

Dear Mr. Fowler:

Subject:

LETTER OF DECISION

File Number:

PLN 2007-00469

Location:

7400 Stage Road in Unincorporated San Gregorio

APN:

081-240-020

On February 26, 2014, the San Mateo County Planning Commission considered a Coastal Development Permit, Use Permit Amendment and Architectural Review Permit, pursuant to Sections 6328 and 6500 of the County Zoning Regulations and Section 7700 of the State Streets and Highways Code, and certification of a Mitigated Negative Declaration, pursuant to the California Environmental Quality Act, to allow modifications to an existing cellular facility. The modifications consist of one additional 15-ft. tall monopole with associated panel antennas to be added to the site that consists of two 15-ft. tall monopoles and an 800 sq. ft. equipment structure located at 7400 Stage Road in the unincorporated San Gregorio area of San Mateo County.

Based on information provided by staff and evidence presented at the hearing, the Planning Commission approved the project by adopting the required findings and conditions of approval as identified in Attachment A.

Any interested party aggrieved by the determination of the Planning Commission has the right of appeal to the Board of Supervisors within ten (10) business days from such date of determination. The appeal period for this matter will end at **5:00 p.m.** on March 12, 2014.

An approval of this project is appealable to the California Coastal Commission. Any aggrieved person may appeal this decision to the California Coastal Commission within 10 working days following the Coastal Commission's receipt of the notice of Final Local Decision. Please contact the Coastal Commission's North Central Coast District Office at (415) 904-5260 for further information concerning the Commission's appeal process. The County and Coastal Commission appeal periods are sequential, not concurrent, and together total approximately one month. A project is considered approved when these appeal periods have expired and no appeals have been filed.

Please direct any questions regarding this matter to Angela Chavez, Project Planner, at (650) 599-7217 or Email: achavez@smcgov.org.

Sincerely,

For Heather Hardy

Planning Commission Secretary

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cc: Department of Public Works

Building Inspection Section Environmental Health Division

CALFIRE

County Assessor Sara Armstrong

Attachment A

County of San Mateo Planning and Building Department

FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2007-00469 Hearing Date: February 26, 2014

Prepared By: Angela Chavez Adopted By: Planning Commission

Project Planner

RECOMMENDED FINDINGS

Regarding the Mitigated Negative Declaration, Found:

- 1. That the Planning Commission does hereby find that this Mitigated Negative Declaration reflects the independent judgment of San Mateo County.
- 2. That the Mitigated Negative Declaration is complete, correct and adequate and prepared in accordance with the California Environmental Quality Act and applicable State and County guidelines.
- 3. That, on the basis of the Initial Study, comments received hereto, and testimony presented and considered at the public hearing, there is no substantial evidence that the project will have a significant effect on the environment.
- 4. That the mitigation measures identified in the Mitigated Negative Declaration and agreed to by the applicant and placed as conditions on the project have been incorporated into the Mitigation Monitoring and Reporting Plan in conformance with the California Public Resources Code Section 21081.6.

Regarding the Coastal Development Permit, Found:

- 5. That the project, as described in the application and accompanying materials required by Zoning Regulations Section 6328.7, and as conditioned in accordance with Section 6328.14 of the Zoning Regulations, conforms with the plans, policies, requirements and standards of the San Mateo County Local Coastal Program (LCP). The plans and materials have been reviewed against the application requirement in Section 6328.7 of the Zoning Regulations and the project has been conditioned to minimize visual impacts in accordance to the Visual Resources Component of the LCP.
- 6. That the project conforms to the specific findings required by policies of the San Mateo County LCP. Staff has added conditions which further limit visual impacts by

requiring the new monopole and antennas to be painted a dark green color to match the existing monopoles and antennas, blend in with the existing vegetation, and requiring the existing coaxial cable route to be utilized thereby reducing the amount of vegetation removal further minimizing visual impacts.

Regarding the Use Permit, Found:

- 7. That the establishment, maintenance and/or conducting of the proposed use, under the circumstances of the particular case and as conditioned, will not result in a significant adverse impact to coastal resources, and will not be detrimental to the public welfare or injurious to property or improvements in said neighborhood. The cumulative RF level for this project site will be in compliance with Federal Communication Commission's requirements for the applicable public exposure limit at ground level. There is no evidence to suggest that this use will impact nearby property or public improvements.
- 8. That the approval of this cellular telecommunications facility is necessary for the public health, safety, convenience, or welfare. This facility contributes to an enhanced wireless network for increased clarity, range, and system capacity, and therefore is a benefit to both public and private users.

Regarding the Architectural Review, Found:

9. That the proposed cellular communication facility, as conditioned, is in compliance with the architectural design standards for the Cabrillo Highway State Scenic Corridor. These standards call for quiet, unobtrusive designs that are both integral to the site and complementary to the surrounding natural terrain. The proposal complies with these design goals by creating a monopole that utilizes mature trees as a backdrop and locates the equipment structure downslope.

CONDITIONS OF APPROVAL

Current Planning Section

- 1. This approval applies only to the proposal, documents, and plans described in this report and submitted to and approved by the Planning Commission on February 26, 2014. Minor adjustments to the project in the course of applying for building permits may be approved by the Community Development Director if they are consistent with the intent of, and in substantial conformance with, this approval.
- The use permit shall be for the proposed project only. Any change in design or
 intensity of use shall require an amendment to the use permit. Amendment to this
 use permit requires an application for amendment, payment of applicable fees, and
 possible consideration at a public hearing.
- 3. The Coastal Development Permit shall be valid for one year, by which time the associated building permit shall have been issued.

- 4. The installation shall be removed in its entirety at that time when this technology becomes obsolete or this facility is no longer needed.
- 5. This use permit remains valid until November 12, 2018. Renewal of this permit shall be applied for six months prior to expiration to the Current Planning Section and shall be accompanied by the renewal application and fee applicable at that time.
- 6. The Department of Fish and Game has determined that this project is not exempt from the Department of Fish and Game California Environmental Quality Act filing fees per Fish and Game Section 711.4. The applicant shall pay to the San Mateo County Recorder's Office an amount of \$2,231.25 at the time of filing of the Notice of Determination by the County Planning and Building Department staff within 10 business days of the approval.
- 7. The applicant shall file a copy of the current FCC and CPUC license with the Current Planning Section. The applicant shall be required to keep a current copy of these forms on file with the Planning Department throughout the life of this use permit. The applicant shall notify the Current Planning Section if, at any time, the FCC or CPUC license is revoked or suspended.
- 8. Prior to the final inspection for the building permit, the applicant shall paint and maintain all the monopoles and antennas a dark green color to match existing equipment and blend in with the surrounding vegetation.
- 9. At the time of use permit renewal, if staff has determined, based on a field inspection, that the color of the monopoles or fence slats is no longer in compliance with the approved colors, the applicant shall repaint the structures or install new fence slats prior to use permit renewal.
- 10. The applicant shall underground all utilities associated with the project.
- 11. Prior to the issuance of a building permit, the applicant shall provide an erosion and sediment control plan for any utility trenching. Should other methods of utility installation be used (e.g., boring) to minimize disturbance of soil, the applicant shall provide an erosion and sediment control plan addressing entry and exit points.
- 12. Prior to the issuance of a building permit, the applicant shall submit a revegetation plan for review and approval by the Current Planning Section. Said plan shall address replanting of all disturbed areas with native plant species to address erosion.
- 13. The underground coaxial cable from the equipment structure to the monopoles shall utilize the existing disturbed area on the face of the project hillside. In no case shall any additional coastal scrub brush be removed.
- 14. Only the minimum vegetation necessary shall be removed to accommodate the construction of the monopole.

- 15. Access to the proposed monopole locations shall utilize either the footpath which loops north from the equipment structure area up the hill to the monopole site or the disturbed cable run area. No additional vegetation shall be removed to provide access to the monopole site.
- 16. Prior to the issuance of a building permit, the applicant shall submit to the Current Planning Section for review and approval a drainage plan which shows how the transport and discharge of soil and pollutants from and within the project site shall be minimized. The plan shall be designed to minimize potential sources of sediment, control the amount of runoff and its ability to carry sediment by diverting incoming flows and impeding internally generated flows, and retain sediment that is picked up on the project site through the use of sediment-capturing devices. The plan shall also limit application, generation, and migration of toxic substances, ensure the proper storage and disposal of toxic materials, and apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters. Said plan shall adhere to the San Mateo Countywide Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines," including:
 - a. Sequence construction to install sediment-capturing devices first, followed by runoff control measures and runoff conveyances. No construction activities shall begin until after all proposed measures are in place.
 - b. Minimize the area of bare soil exposed at one time (phased grading).
 - c. Clear only areas essential for construction.
 - d. Within five days of clearing or inactivity in construction, stabilize bare soils through either non-vegetative BMPs, such as mulching, or vegetative erosion control methods, such as seeding. Vegetative erosion control shall be established within two weeks of seeding/planting.
 - e. Construction entrances shall be stabilized immediately after grading and frequently maintained to prevent erosion and control dust.
 - f. Control wind-born dust through the installation of wind barriers such as hay bales and/or sprinkling.
 - g. Soil and/or other construction-related material stockpiled on-site shall be placed a minimum of 200 feet from all wetlands and drain courses. Stockpiled soils shall be covered with tarps at all times of the year.
 - h. Intercept runoff above disturbed slopes and convey it to a permanent channel or storm drains by using earth dikes, perimeter dikes or swales, or diversions. Use check dams where appropriate.

- i. Provide protection for runoff conveyance outlets by reducing flow velocity and dissipating flow energy.
- j. Install storm drain inlet protection that traps sediment before it enters any adjacent storm sewer systems. This barrier shall consist of filter fabric, straw bales, gravel, or sand bags.
- k. Install sediment traps/basins at outlets of diversions, channels, slope drains, or other runoff conveyances that discharge sediment-laden water. Sediment traps/basins shall be cleaned out when 50% full (by volume).
- I. Use silt fence and/or vegetated filter strips to trap sediment contained in sheet flow. The maximum drainage area to the fence should be 0.5 acre or less per 100 feet of fence. Silt fences shall be inspected regularly and sediment removed when it reaches 1/3 the fence height. Vegetated filter strips should have relatively flat slopes and be vegetated with erosion-resistant species.
- m. Throughout the construction period, the applicant shall conduct regular inspections of the condition and operational status of all structural best management practices required by the approved erosion control plan.
- Prior to the final inspection for the building permit, the applicant shall present photos to the Current Planning Section to verify that the revegetation plan has been implemented.
- 18. Prior to the issuance of the building permit, the applicant shall submit to the Current Planning Section a copy of the Bay Area Air Quality Management District (BAAQMD) Permit in compliance with the Statewide Air Toxics Control Measure for Stationary Diesel Engine.
- 19. All construction activities associated with the proposed project shall be limited to 7:00 a.m. to 6:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturday. Construction activities will be prohibited on Sunday and any nationally observed holiday. Noise levels produced by construction activities shall not exceed 80-dBA level at any one moment.
- 20. No tree cutting is allowed by this permit. Removal of any tree with a diameter greater than 12 inches as measured 4.5 feet above the ground shall require a separate tree removal permit.
- 21. The provisions of the San Mateo County Grading Ordinance shall govern all grading on and adjacent to this site. Prior to any on-site grading, the applicant may be required to obtain a grading permit, or grading permit exemption from the County Planning Section. A grading permit is required if 250 cubic yards or more of earth is to be removed or if a cut or fill exceeds two (2) feet in vertical depth, measured from ground level. This permit, if required, shall be considered at a public hearing with the Planning Commission prior to commencement of any grading activities.

22. The applicant shall paint all the existing equipment located within the leased equipment area an earth toned brown color to blend with the natural environment. Prior to the issuance of a building permit and prior to painting of the equipment, the applicant shall submit a color sample to the Planning Department for review and approval. The fencing surrounding the equipment structure shall be coated in black vinyl and have dark green plastic slats installed. No barbed wire shall be allowed as part of the fencing surrounding the facility.

Building Inspection Section

23. The applicant shall comply with all Building Inspection requirements at the building permit stage of the application.

Department of Public Works

24. The applicant shall comply with all requirements of the Department of Public Works at the building permit stage of the application.

Cal-Fire

- 25. The applicant shall comply with all Cal-Fire requirements at the building permit stage of the application.
- 26. The applicant shall maintain the required road and site improvements as detailed by Cal-Fire, to its satisfaction, through the duration of this permit.



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT F





Planning & Building Department

455 County Center, 2nd Floor Redwood City, California 94063 650/363-4161 Fax: 650/363-4849

Mail Drop PLN122 plngbldg@co.sanmateo.ca.us www.co.sanmateo.ca.us/planning

Please reply to:

Melissa Ross

(650) 599-1559

December 12, 2008

Christopher Fowler 247 O'Conner Street Menlo Park, CA 94025

Dear Mr. Fowler;

Subject:

Letter of Decision - File Number PLN2007-00469

Location:

7400 Stage Road

APN:

081-240-020

On December 10, 2008, the San Mateo County Planning Commission considered a Coastal Development Permit, a Planned Agricultural Permit, Use Permit, and Architectural Review Permit, pursuant to Sections 6328, 6350, and 6500 of the County Zoning Regulations and Section 7700 of the State Streets and Highways Code, and certification of a Mitigated Negative Declaration to allow construction of a new cellular facility consisting of two 15-foot tall mono poles and an 800 sq. ft. equipment structure located at 7400 Stage Road in the unincorporated San Gregorio area of San Mateo County. This project is appealable to the California Coastal Commission.

Based on information provided by staff and evidence presented at the hearing the Planning Commission approved the Coastal Development Permit, Planned Agricultural Permit, Use Permit, and Architectural Review Permit subject to the revised conditions of approval, including the addition of Condition No. 7 as attached.

Any interested party aggrieved by the determination of the Planning Commission has the right of appeal to the Board of Supervisors within ten (10) business days from such date of determination. The appeal period for this matter will end at 5:00 p.m. on December 24, 2008.

A Board of Supervisors' approval is appealable to the California Coastal Commission. Any aggrieved person who has exhausted local appeals may appeal this decision to the California Coastal Commission within 10 working days following the Coastal Commission's receipt of the Board decision. Please contact the Coastal Commission's North Central Coast District Office at

(415) 904-5260 for further information concerning the Commission's appeal process. The County and Coastal Commission appeal periods are sequential, not concurrent, and together total approximately one month. A project is considered approved when these appeal periods have expired and no appeals have been filed. If you have questions regarding this matter, please contact the Project Planner listed on page one.

Sincerely,

For Rosario Fernandez

Planning Commission Secretary

Debra Robinson

Pcd1210S_rf_Verizon

cc:

Department of Public Works

Building Inspection Section

Cal-Fire

County Assessor

Pescadero Municipal Advisory Council

Sara Armstrong

Geotechnical Section

Mary Bordi

Lennie Roberts

Tom Armstrong

Attachment A

County of San Mateo Planning and Building Department

REVISED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2007-00469

Hearing Date: December 10, 2008

Prepared By: Melissa Ross, Project Planner

For Adoption By: Planning Commission

FINDINGS

Regarding the Negative Declaration, Found:

- 1. That the Planning Commission does hereby find that this Negative Declaration reflects the independent judgment of San Mateo County.
- 2. That the Negative Declaration is complete, correct and adequate and prepared in accordance with the California Environmental Quality Act and applicable State and County guidelines.
- 3. That, on the basis of the Initial Study, comments received hereto, and testimony presented and considered at the public hearing, there is no substantial evidence that the project will have a significant effect on the environment.
- 4. That the mitigation measures identified in the Negative Declaration and agreed to by the applicant and placed as conditions on the project have been incorporated into the Mitigation Monitoring and Reporting Plan in conformance with the California Public Resources Code Section 21081.6.

Regarding the Coastal Development Permit, Found:

5. That the project, as described in the application and accompanying materials required by Zoning Regulations Section 6328.7, and as conditioned in accordance with Section 6328.14 of the Zoning Regulations, conforms with the plans, policies, requirements and standards of the San Mateo County Local Coastal Program (LCP). The plans and materials have been reviewed against the application requirement in Section 6328.7 of the

Zoning Regulations and the project has been conditioned to minimize visual impacts in accordance to the Visual Resources Component of the LCP.

6. That the project conforms to the specific findings required by policies of the San Mateo County LCP. Staff has added conditions which further limit visual impacts by requiring the monopoles and antennas to be painted a dark green color to blend in with the existing vegetation and requiring the existing coaxial cable route to be utilized thereby reducing the amount of vegetation removal further minimizing visual impacts.

Regarding the Use Permit, Found:

- 7. That the establishment, maintenance and/or conducting of the proposed use, under the circumstances of the particular case and as conditioned, will not be detrimental to the public welfare or injurious to property or improvements in said neighborhood. The cumulative RF level for this project site will be in compliance with Federal Communications Commission's requirements for the applicable public exposure limit at ground level. There is no evidence to suggest that this use will impact nearby property or public improvements.
- 8. That the approval of this cellular telecommunications facility is necessary for the public health, safety, convenience, or welfare. This facility contributes to an enhanced wireless network for increased clarity, range, and system capacity, and therefore is a benefit to both public and private users.

Regarding the Architectural Review, Found:

9. That the proposed cellular communication facility, as conditioned, is in compliance with the architectural design standards for the Cabrillo Highway State Scenic Corridor. These standards call for quiet, unobtrusive designs that are both integral to the site and complementary to the surrounding natural terrain. The proposal complies with these design goals by creating a monopole that utilizes mature trees as a backdrop and locates the equipment structure downslope.

CONDITIONS OF APPROVAL

Current Planning Section

1. This approval applies only to the proposal, documents, and plans described in this report and submitted to and approved by the Planning Commission on December 10, 2008.

Minor adjustments to the project in the course of applying for building permits may be approved by the Community Development Director if they are consistent with the intent of, and in substantial conformance with, this approval.

- 2. The use permit shall be for the proposed project only. Any change in design or intensity of use shall require an amendment to the use permit. Amendment to this use permit requires an application for amendment, payment of applicable fees, and possible consideration at a public hearing.
- 3. The Coastal Development Permit shall be valid for one year, by which time the associated building permit shall have been issued.
- 4. The installation shall be removed in its entirety at that time when this technology becomes obsolete or this facility is no longer needed.
- This use permit shall be valid for ten years, until December 10, 2018, with an option for the applicant to apply for a renewal. Renewal of this permit shall be applied for six months prior to expiration to the Current Planning Section and shall be accompanied by the renewal application and fee applicable at that time.
- 6. The applicant shall file a copy of the current FCC and CPUC license with the Current Planning Section. The applicant shall be required to keep a current copy of these forms on file with the Planning Department throughout the life of this use permit. The applicant shall notify the Current Planning Section if, at any time, the FCC or CPUC license is revoked or suspended.
- 7. The applicant shall install the two monopoles in the originally proposed location and the maximum height of each monopole shall not exceed 12-feet.
- 8. Prior to the final inspection for the building permit, the applicant shall paint and maintain the monopoles and antennas a dark green color to blend in with the surrounding vegetation. The fencing surrounding the equipment structure shall be coated in black vinyl and have dark green plastic slats installed. No barbed wire shall be allowed as part of the fencing surrounding the facility.
- 9. At the time of use permit renewal, if staff has determined, based on a field inspection, that the color of the monopoles or fence slats is no longer in compliance with the approved colors, the applicant shall repaint the structures or install new fence slats prior to use permit renewal.

- 10. The applicant shall underground all utilities associated with the project.
- Prior to the issuance of a building permit, the applicant shall provide an erosion and sediment control plan for any utility trenching. Should other methods of utility installation be used (e.g., boring) to minimize disturbance of soil, the applicant shall provide an erosion and sediment control plan addressing entry and exit points.
- Prior to the issuance of a building permit, the applicant shall submit a landscape and revegetation plan for review and approval by the Current Planning Section. Said plan shall address replanting of all disturbed areas with native plant species to address erosion. The plan shall also include a minimum of seven 24-inch box Monterey cypress trees to be planted in an area west of the fire truck hammerhead turnaround to provide screening from Highway 1. The trees shall be planted in a random manner while providing screening of the equipment structure. The applicant shall also provide irrigation necessary to water the new trees and shall maintain the trees in perpetuity. There shall be administrative reviews each year for three years after final approval to confirm that all plant materials are surviving. Any tree that does not survive shall be replaced. The applicant will be required to pay applicable annual administrative review fees. The temporary water tank shall be painted a dark green to blend with the surrounding vegetation.
- 13. The temporary water tank shall be removed, in its entirety and prior to approval of an administrative review, once Planning staff has determined the landscaping has been established.
- 14. The underground coaxial cable from the equipment structure to the monopoles shall utilize the existing disturbed area on the face of the project hillside. In no case shall any additional coastal scrub brush be removed.
- 15. Only the minimum vegetation necessary shall be removed to accommodate the construction of the monopoles.
- 16. Access to the proposed monopole locations shall utilize either the footpath which loops north from the equipment structure area up the hill to the monopole site or the disturbed cable run area. No additional vegetation shall be removed to provide access to the monopole site.
- 17. Prior to the issuance of a building permit, the applicant shall submit to the Current Planning Section for review and approval a drainage plan which shows how the transport

and discharge of soil and pollutants from and within the project site shall be minimized. The plan shall be designed to minimize potential sources of sediment, control the amount of runoff and its ability to carry sediment by diverting incoming flows and impeding internally generated flows, and retain sediment that is picked up on the project site through the use of sediment-capturing devices. The plan shall also limit application, generation, and migration of toxic substances, ensure the proper storage and disposal of toxic materials, apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters. Said plan shall adhere to the San Mateo Countywide Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines," including:

- a. Sequence construction to install sediment-capturing devices first, followed by runoff control measures and runoff conveyances. No construction activities shall begin until after all proposed measures are in place.
- b. Minimize the area of bare soil exposed at one time (phased grading).
- c. Clear only areas essential for construction.
- d. Within five days of clearing or inactivity in construction, stabilize bare soils through either non-vegetative BMPs, such as mulching or vegetative erosion control methods such as seeding. Vegetative erosion control shall be established within two weeks of seeding/planting.
- e. Construction entrances shall be stabilized immediately after grading and frequently maintained to prevent erosion and control dust.
- f. Control wind-born dust through the installation of wind barriers such as hay bales and/or sprinkling.
- g. Soil and/or other construction-related material stockpiled on-site shall be placed a minimum of 200 feet from all wetlands and drain courses. Stockpiled soils shall be covered with tarps at all times of the year.
- h. Intercept runoff above disturbed slopes and convey it to a permanent channel or storm drains by using earth dikes, perimeter dikes or swales, or diversions. Use check dams where appropriate.
- i. Provide protection for runoff conveyance outlets by reducing flow velocity and

dissipating flow energy.

- j. Install storm drain inlet protection that traps sediment before it enters any adjacent storm sewer systems. This barrier shall consist of filter fabric, straw bales, gravel, or sand bags.
- k. Install sediment traps/basins at outlets of diversions, channels, slope drains, or other runoff conveyances that discharge sediment-laden water. Sediment traps/basins shall be cleaned out when 50% full (by volume).
- Use silt fence and/or vegetated filter strips to trap sediment contained in sheet
 flow. The maximum drainage area to the fence should be 0.5 acre or less per 100
 feet of fence. Silt fences shall be inspected regularly and sediment removed when
 it reaches 1/3 the fence height. Vegetated filter strips should have relatively flat
 slopes and be vegetated with erosion-resistant species.
- m. Throughout the construction period, the applicant shall conduct regular inspections of the condition and operational status of all structural BMPs required by the approved erosion control plan.
- 18. Prior to the final inspection for the building permit, the applicant shall present photos to the Current Planning Section to verify the landscaping, revegetation plan, and irrigation system has been implemented.
- 19. Prior to the issuance of the building permit, the applicant shall submit to the Current Planning Section a copy of the Bay Area Air Quality Management District (BAAQMD) Permit in compliance with the Statewide Air Toxics Control Measure for Stationary Diesel Engine.
- 20. The operation hours of the diesel generator for maintenance and testing purposes shall not exceed 50 hours per year.
- 21. Prior to the final inspection for the building permit, the applicant shall submit to the Current Planning Section a copy of the Hazardous Materials Business Plan Program application form filed with the Environmental Health Division. The applicant shall comply with all State and local clean-up regulations and policies.
- 22. Prior to the final inspection for the building permit, the applicant shall provide photos showing RF warning signs visibly placed on the exterior of the equipment structure.

- All construction activities associated with the proposed project shall be limited to 7:00 a.m. to 6:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturday. Construction activities will be prohibited on Sunday and any nationally observed holiday. Noise levels produced by construction activities shall not exceed 80-dBA level at any one moment.
- No tree cutting is allowed by this permit. Removal of any tree with a diameter greater than 12 inches as measured 4.5 feet above the ground shall require a separate tree removal permit.
- 25. The provisions of the San Mateo County Grading Ordinance shall govern all grading on and adjacent to this site. Prior to any on-site grading, the applicant may be required to obtain a grading permit, or grading permit exemption from the County Planning Section.

 A grading permit is required if 250 cubic yards or more of earth is to be removed or if a cut or fill exceeds two (2) feet in vertical depth, measured from ground level. This permit, if required, shall be considered at a public hearing with the Planning Commission prior to commencement of any grading activities.

Building Inspection Section

26. The applicant shall comply with all Building Inspection requirements at the building permit stage of the application.

Department of Public Works

- 27. As shown on plans, any utility construction within the Stage Road right-of-way requires an encroachment permit.
- 28. No proposed construction work within the County right-of-way shall begin until County requirements for the issuance of an encroachment permit, including review of the plans, have been met and an encroachment permit issued.

Cal-Fire

- 29. All dead-end roadways shall be terminated by a turnaround bulb of not less than 80 feet in diameter. Alternates may be approved by the fire marshal. Turnaround shall not be over 8% grade.
- 30. The applicant shall provide a road plan and profile for fire department access. The plan

Christopher Fowler December 12, 2008 Page 10

shall include: (1) road to be minimum 12 feet wide with 20-foot wide turnouts every 400 feet, (2) turnout(s) shall be 35 feet long with an additional 25-foot diminishing width approach and departure on each side, (3) emergency access roads up to 15 % grade shall be a minimum of 6-inch Class 2 aggregate compacted to 95% or equivalent, and (4) all sections of emergency access road greater than 15% shall be paved with a minimum 2-inch asphalt, concrete or equivalent, with a non-skid surface and a sub-base of 6-inch minimum Class 2 aggregate compacted to 95%.

- Because of limited access into the project site, the San Mateo County Fire Department is requiring the installation of a Knox Box or Knox Padlock to allow rapid response of emergency vehicles onto the project parcel in case of a fire or medical emergency. For an application or further information, please contact the Fire Department at 650/573-3846.
- 32. Turnaround will be designated, signed and maintained as Fire Lanes.



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT G

NIER Study Report

SITE NAME:

415286 Hwy 1 & 84 CA

LOCATION:

San Gregorio, California

COMPANY:

American Tower Corporation Woburn, Massachusetts

August 25th, 2020

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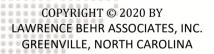




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NIER STUDY REPORT 415286 Hwy 1 & 84 CA

San Gregorio, California

INTRODUCTION

Lawrence Behr Associates, Inc. (LBA) has been retained by American Tower Corporation (ATC) of Woburn, Massachusetts to evaluate the RF emissions of an existing tower at this location.

SITE AND FACILITY CONSIDERATIONS

Site 415286 Hwy 1 & 84 CA is located at 7400 Stage Road in San Gregorio, California at coordinates 37.32331, -122.38514. The support structure is a 15' monopole. The installation consists of one antenna level with a radiation center of 7' above ground level. All antennae will have a radiation center as described above. It should be noted that there are no antennas used to transmit. All data used in this study was provided by one or more of the following sources:

- 1. ATC furnished data
- 2. Compiled from carrier and manufacturer standard configurations
- 3. Empirical data collected by LBA

A topographic map of the study area is located in Appendix 1. A satellite view of the study area is located in Appendix 2.

The load list may be seen in Appendix 3.

POWER DENSITY CALCULATIONS

Graphs of the power density at different distances from the transmitter, compared to FCC MPE general population and occupational limits, may be seen in Appendix 4. These limits are based upon the Information Relating to MPE Standards found in Appendix 6. Study methodology may be seen in Appendix 7, which describes the Non-Ionizing Radiation Prediction Models. Approximate radiation patterns may be found in Appendix 5. This site *IS* in compliance with FCC OET-65 MPE limits.

August 25th, 2020

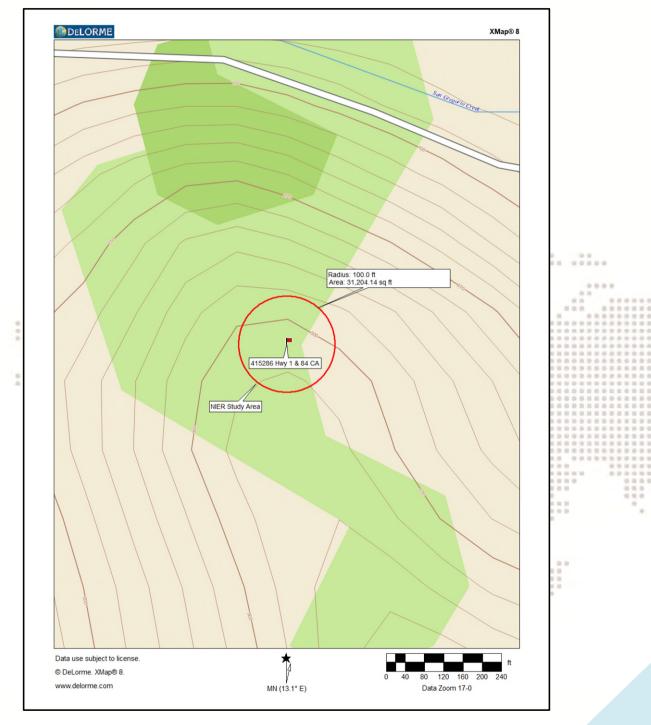
Kathryn G. Tesh

Wireless Services Manager



APPENDIX 1

Topographic Map





APPENDIX 2

Satellite Photo

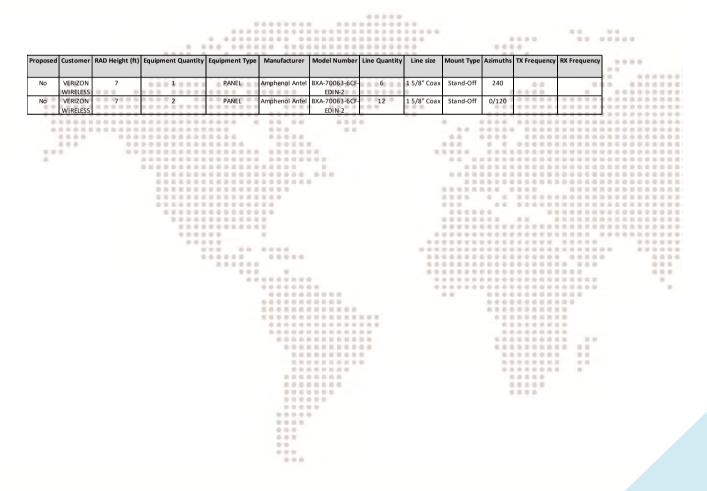




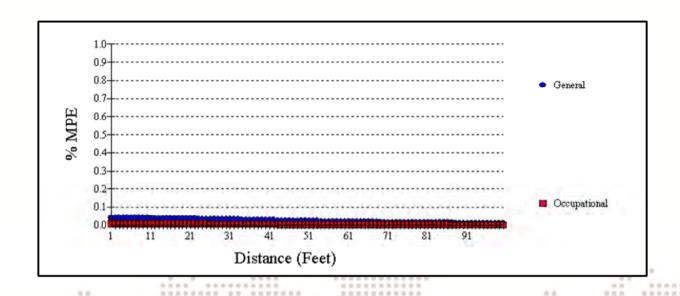


APPENDIX 3

Load List

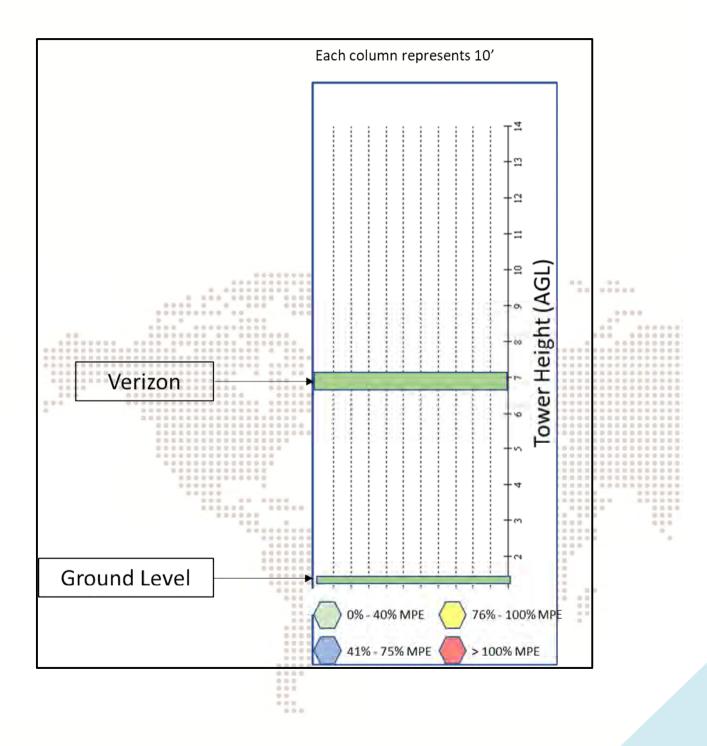






General Population MPE (@1'):	0.00%
Occupational MPE (@1'):	0.00%
Maximum Power Density (@1'):	0.0000 mW/cm ²







In 1985, the FCC first adopted guidelines to be used for evaluating human exposure to RF emissions. The FCC revised and updated these guidelines on August 1, 1996, as a result of a rule-making proceeding initiated in 1993. The new guidelines incorporate limits for Maximum Permissible Exposure (MPE) in terms of electric and magnetic field strength and power density for transmitters operating at frequencies between 300 kHz and 100 GHz.

The FCC's MPE limits are based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits were developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC's limits, and the NCRP and ANSI/IEEE limits on which they are based, are derived from exposure criteria quantified in terms of specific absorption rate (SAR). The basis for these limits is a whole-body averaged SAR threshold level of 4 watts per kilogram (4 W/kg), as averaged over the entire mass of the body, above which expert organizations have determined that potentially hazardous exposures may occur. The MPE limits are derived by incorporating safety factors that lead, in some cases, to limits that are more conservative than the limits originally adopted by the FCC in 1985. Where more conservative limits exist, they do not arise from a fundamental change in the RF safety criteria for whole-body averaged SAR, but from a precautionary desire to protect subgroups of the general population who, potentially, may be more at risk.

The FCC exposure limits are also based on data showing that the human body absorbs RF energy at some frequencies more efficiently than at others. The most restrictive limits occur in the frequency range of 30-300 MHz where whole-body absorption of RF energy by human beings is most efficient. At other frequencies, whole-body absorption is less efficient, and consequently, the MPE limits are less restrictive.

MPE limits are defined in terms of power density (units of milliwatts per centimeter squared: mW/cm^2), electric field strength (units of volts per meter: V/m) and magnetic field strength (units of amperes per meter: A/m). The far-field of a transmitting antenna is where the electric field vector (E), the



magnetic field vector (H), and the direction of propagation can be considered to be all mutually orthogonal ("plane-wave" conditions).

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area. Additional details can be found in FCC OET 65.





This study predicts RF field strength and power density levels that emanate from communications system antennae. It considers all transmitter power levels (less filter and line losses) delivered to each active transmitting antenna at the communications site. Calculations are performed to determine power density and MPE levels for each antenna as well as composite levels from all antennas. The calculated levels are based on where a human (Observer) would be standing at various locations at the site. The point of interest where the MPE level is predicted is based on the height of the Observer.

Compliance with the FCC limits on RF emissions are determined by spatially averaging a person's exposure over the projected area of an adult human body. that is approximately six-feet or two-meters, as defined in the ANSI/IEEE C95.1 standard. The MPE limits are specified as time-averaged exposure limits. This means that exposure is averaged over an identifiable time interval. It is 30 minutes for the general population/uncontrolled RF environment and 6 minutes for the occupational/controlled RF environment. However, in the case of the general public, time averaging should not be applied because the general public is typically not aware of RF exposure and they do not have control of their exposure time. Therefore, it should be assumed that any RF exposure to the general public will be continuous.

The FCC's limits for exposure at different frequencies are shown in the following Tables.

Limits for Occupational/Controlled Exposure					
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time E ², H ² or S (minutes)	
0.3 - 3.0	614	1.63	100*	6	
3.0 - 30	1842/f	4.89/f	900/F ²	6	
30 - 300	61.4	0.163	1.0	6	
300 - 1500		0 0 0 0 0 0 0	f/300	6	
1500 - 100,000		***	5	6	



* = Plane-wave equivalent power density

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

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/cm²)	Averaging Time E ² , H ² or S (minutes)		
0.3 - 1.34	614	1.63	100*	30		
1.34 - 30	824/f	2.19/f	180/F ²	30		
30 -300	27.5	0.073	0.2	30		
300 -1500	-		f/1500	30		
1500 -100,000	2 1 1 1 1 1 1		1.0	30		

f = frequency

General population/uncontrolled exposures apply in situations in which the general public may be exposed or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

It is important to understand that these limits apply cumulatively to all sources of RF emissions affecting a given area. For example, if several different communications system antennas occupy a shared facility such as a tower or rooftop, then the total exposure from all systems at the facility must be within compliance of the FCC guidelines.

The field strength emanating from an antenna can be estimated based on the characteristics of an antenna radiating in free space. There are basically two field areas associated with a radiating antenna. When close to the antenna, the region is known as the Near Field. Within this region, the characteristics of the RF fields are very complex and the wave front is extremely curved. As you move further from the antenna, the wave front has less curvature and becomes planar. The wave front still has a curvature but it appears to occupy a flat plane in space (plane-wave radiation). This region is known as the Far Field.



^{* =} Plane-wave equivalent power density

Two models are utilized to predict Near and Far field power densities. They are based on the formulae in FCC OET 65. As this study is concerned only with Near Field calculations, we will only describe the model used for this study. For additional details, refer to FCC OET Bulletin 65.

Cylindrical Model (Near Field Predictions)

Spatially averaged plane-wave equivalent power densities parallel to the antenna may be estimated by dividing the antenna input power by the surface area of an imaginary cylinder surrounding the length of the radiating antenna. While the actual power density will vary along the height of the antenna, the average value along its length will closely follow the relation given by the following equation:

$$S = P \div 2\pi RL$$

Where:

S = Power Density

P = Total Power into antenna

R = Distance from the antenna

L = Antenna aperture length

For directional-type antennas, power densities can be estimated by dividing the input power by that portion of a cylindrical surface area corresponding to the angular beam width of the antenna. For example, for the case of a 120-degree azimuthal beam width, the surface area should correspond to 1/3 that of a full cylinder. This would increase the power density near the antenna by a factor of three over that for a purely omni-directional antenna. Mathematically, this can be represented by the following formula:

$$S = (180 / \theta_{BW}) P \div \pi RL$$

Where:

S = Power Density

 θ_{BW} = Beam width of antenna in degrees (3 dB half-power point)

P = Total Power into antenna

R = Distance from the antenna

L = Antenna aperture length

If the antenna is a 360-degree omni-directional antenna, this formula would be equivalent to the previous formula.



Spherical Model (Far Field Predictions)

Spatially averaged plane-wave power densities in the Far Field of an antenna may be estimated by considering the additional factors of antenna gain and reflective waves that would contribute to exposure.

The radiation pattern of an antenna has developed in the Far Field region and the power gain needs to be considered in exposure predictions. Also, if the vertical radiation pattern of the antenna is considered, the exposure predictions would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential four-fold increase in power density.

These additional factors are considered and the Far Field prediction model is determined by the following equation:

$$S = EIRP \times Rc \div 4\pi R^2$$

Where:

S = Power Density

EIRP = Effective Radiated Power from antenna

Rc = Reflection Coefficient (2.56)

R = Distance from the antenna

The EIRP includes the antenna gain. If the antenna pattern is considered, the antenna gain is relative based on the horizontal and vertical pattern gain values at that particular location in space, on a rooftop or on the ground. However, it is recommended that the antenna radiation pattern characteristics not be considered to provide a conservative "worst case" prediction. This is the equation is utilized for the Far Field exposure predictions herein.



