



STAFF REPORT

TO: PLANNING COMMISSION

PREPARED BY: Anjana Mepani, Associate Planner

REVIEWED BY: Terry Blount, AICP, Planning Manager

GENERAL INFORMATION

APPLICANT: T-Mobile/SiteCom, Inc. – Matt Veazey

PROPERTY OWNER: Concord Korean Baptist Church – Pastor David Gill

LOCATION: 5000 Hiller Lane (APN 161-080-026)/PG&E Right-of-Way

GENERAL PLAN: John Muir Parkway Specific Area Plan: Residential 0-6 units/
gross acre

ZONING: R-10 (One-Family Residential: 10,000 sq. ft. minimum lot area)

ENVIRONMENTAL REVIEW: Staff proposes that the Planning Commission find that this permit be categorically exempt (Class 1 - Section 15301 - Existing Facilities and Class 11 - Section 15311 - Accessory Structures) from the requirements of CEQA. If the Planning Commission adopts this proposed finding, no further environmental review would be required by State law.

PROPOSAL: Public hearing to consider approval of a proposed new co-located wireless telecommunication facility on an existing PG&E tower at 5000 Hiller Lane (Concord Korean Baptist Church site). The proposed project consists of adding a 12' lattice structure, with 8 antennas, at the top of the tower. T-Mobile will be leasing a 9'x22' area within the tower footprint for an equipment enclosure. The proposed project is located in a residential zoning district, which requires a Use Permit and Design Review.

RECOMMENDATION

Approve Use Permit #08-16 and Design Review #08-26, subject to the attached conditions of approval.

PROJECT DESCRIPTION

T-Mobile is proposing to install a new co-located wireless telecommunication facility on an existing PG&E tower at 5000 Hiller Lane (Concord Korean Baptist Church site). The proposed project consists of adding a 12' lattice structure, with 8 antennas, at the top of the tower. T-Mobile will be leasing a 9'x22' area within the tower footprint for an equipment enclosure. The proposed project is located in a residential zoning district, which requires a Use Permit and Design Review.

In detail, the applicant is proposing to install the new telecommunication facility by adding a 12-foot lattice top hat structure and co-locating eight antennas at the top of an existing 121.3' PG&E tower. The overall height of the tower will increase approximately four feet in height with both the top hat and antennas attached to the tower. The applicant is also proposing to place a fenced equipment enclosure at the base of the tower. As stated in the applicant's project support statement (Attachment G), T-Mobile is seeking to improve and expand wireless coverage to the residences and businesses in Martinez. The proposed new wireless telecommunication facility will handle increased traffic on their network and provide quality service to their customers.

The wireless facility will operate unmanned and the equipment will be serviced every 4-6 weeks. Further, noise from the equipment will meet the noise requirements set forth in the Martinez Municipal Code Chapter 8.34.020 and will not exceed 60dBA for exterior noise level (Attachment M). In addition, the attached updated Radio Frequency Radiation Report (Attachment L) demonstrates that the proposed wireless facility, along with the operation of the other wireless facility already located on the tower, will operate within the permissible public exposure standards set by the Federal Communications Commission (FCC). It should be noted that the Telecommunications Act of 1996 states that no state or local governmental entity may regulate the placement, construction, or modification of wireless facilities on the basis of environmental effects of radio frequency emissions to the extent that the emissions comply with FCC regulations.

SITE AND CONTEXT DESCRIPTION

The Concord Korean Baptist Church property with the PG&E utility tower and easement is located at 5000 Hiller Lane, a private road off of Arnold Drive. The subject property has a lot size of 2.69 acres (117,175.5 sq. ft.), which is larger than most of the surrounding lots. The subject lot currently contains four church related buildings, a playground, basketball court, parking, and the PG&E tower. The PG&E 100-foot right-of-way easement traverses the lot along the rear of the property with the tower located in the northern portion. Further, Sprint/Nextel currently operates a wireless telecommunication facility at the PG&E tower, which consists of antennas on the tower and an equipment shelter at the base of the tower.

The subject property is located in a residential zoning district, where pursuant to Martinez Municipal Code Chapter 22.39, "Wireless Telecommunications Facilities," a Use Permit and Design Review is required for any wireless facility installations. To the north of the subject property are single-family residences and a large vacant lot. On the east and west are both multi-family and single-family residences. The Church of Christ is located adjacent to the south of the subject property.

BACKGROUND

The applicant initially submitted for a Use Permit and Design Review in 2008 for the proposed project. In December 2008, an incomplete letter from the City was sent to the applicant with a list of items that needed to be addressed and provided for completeness of the proposed project. After this initial incomplete letter, there was minimal activity on the project by the applicant for over a year. During this time, T-Mobile also changed consultants and contacts for the project. In December 2009, the applicant requested that the project file remain active as T-Mobile wanted to continue to pursue the proposed project.

In March 2010, the applicant submitted the requested information for completeness and based on Planning Staff's request, the applicant attended a study session with the Planning Commission on May 11, 2010. At the study session, the proposed project was generally well received by the Planning Commission (Attachment D). The Planning Commission provided preliminary comments to the applicant on the project and requested that some project information be updated, which has been done. Since the Study Session the applicant has updated the coverage maps (Attachment K), updated the Radio Frequency Radiation Report (Attachment L), and provided additional information regarding questions that were brought up during the Study Session, including information regarding site selection (Attachment E).

On August 11, 2010, the project was reviewed by the Design Review Committee (DRC). The DRC reviewed the tower design and location and no changes were suggested for the items to be placed at the top of the tower. However, the DRC did request that the fence for the equipment enclosure be taller and all one height, with dark wood color stain. The applicant has made the recommended changes to both the project plans and photo simulations.

DISCUSSION

Use Permit: As mentioned above, a Use Permit is required to permit a wireless telecommunication facility of this type. The "Wireless Telecommunications Facilities" ordinance (MMC Chapter 22.39) promotes co-location of wireless facilities to reduce the amount of wireless facility sites, which applies to the proposed project. Co-location occurs when a single tower or building supports one or more antennas, dishes, or similar devices owned by more than one public or private entity, such as multiple wireless carriers. Also, in order for a wireless telecommunication facility to be located in a residential area the applicant must demonstrate that no other feasible alternative site exists. The applicant considered the following alternate sites: other existing PG&E towers, the Contra Costa County lattice tower on John Muir Road, County buildings, and a property owned by the Diablo View Homeowners Association, however none of these sites were feasible and all were abandoned from further consideration for various reasons (Attachment E and Attachment G). According to the applicant, "there are no other technically feasible and commercially reasonable alternatives to the proposed communications facility" within the search ring. Thus, locating the proposed facility anywhere else inside the search ring would duplicate coverage provided by existing T-Mobile facilities and would not adequately serve the proposed coverage area. Attached

are updated coverage area maps for the proposed facility (Attachment K).

Design Review: The overall height of the existing PG&E tower is 121.3 feet high, with existing antennas that belong to Sprint/Nextel located at 46 feet high. The applicant is proposing to add a 12-foot lattice top hat structure to the existing tower, which partially sits within the existing tower, thus bringing the overall tower height to 123.3 feet. The top hat will extend approximately two feet above the existing height of the tower. A top hat is an industry term that refers to a tower extension structure to separate cell antennas from power lines. It should be noted that utility poles and towers are not subject to height limits (Martinez Municipal Code Chapter 22.34.170B). The top hat is designed to look like an extension of the PG&E tower so that it will blend in and have minimal visual impacts. Further, the eight antennas proposed to be placed on the top hat are approximately 55.9" in height, 13.3" in width, and 3.15" in depth. The antennas will be located on four sectors around the top hat, with two antennas per sector mounted on H-frame brackets, with the top of the antennas at 125.7 feet in height. The top of the antennas will extend approximately four feet above the overall height of the tower. The lattice top hat, antennas and brackets shall be painted to match the existing PG&E tower.

According to the applicant, the antennas are proposed to be mounted at approximately 123 feet above ground level to provide necessary coverage to connect the proposed site to existing T-Mobile facilities and to provide in-building coverage to customers currently without service. The applicant stated that lower antennas "would render the proposed project unfeasible, since the antennas would have to go below the antennas already installed by Sprint/Nextel" and below the existing power lines. The applicant believes that being below the other carrier's antennas would dramatically reduce the coverage area and severely limit the way in which the proposed site would interconnect to existing T-Mobile facilities, making the project infeasible.

A proposed equipment enclosure will be located within the footprint of the tower, next to an existing equipment shelter belonging to Sprint/Nextel and will not be visible from Hiller Lane. At grade, the equipment within the enclosure will not be visible above the dark colored 7-foot wooden fence line. Although there will be a wooden fence and vegetation around the enclosure, some of the equipment may be visible when looking down on the enclosure and tower footprint from residences located above the subject site. Further, the antennas on the top hat will be visible to the surrounding area in general. The applicant has provided photo simulations with various views of the lattice top hat, antennas, and equipment enclosure (Attachment J).

CONCLUSION

Staff recommends approval of the project, and the draft resolution attached contains the necessary findings for Planning Commission approval. The attached draft conditions of approval have been prepared, also for Planning Commission approval.

ATTACHMENTS

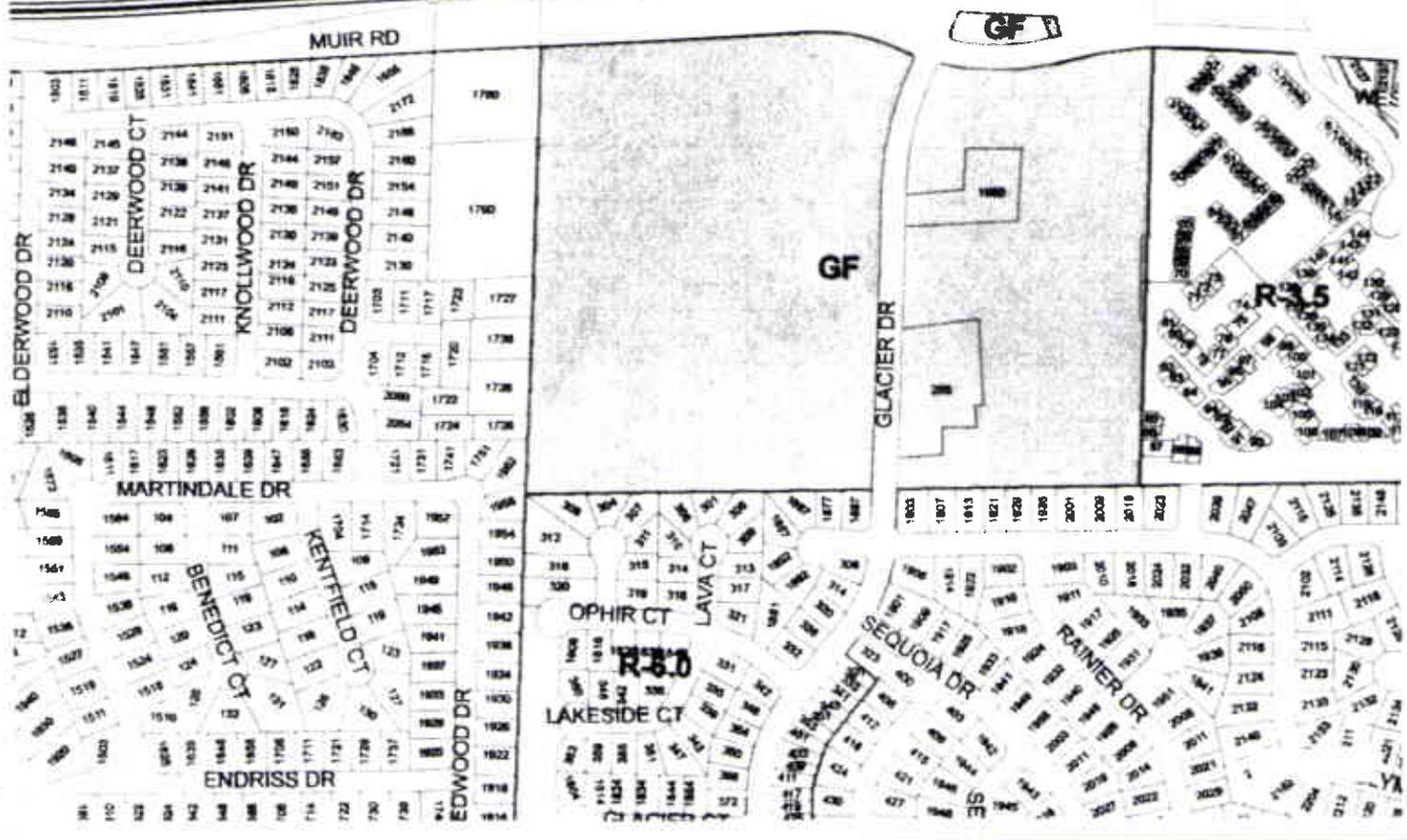
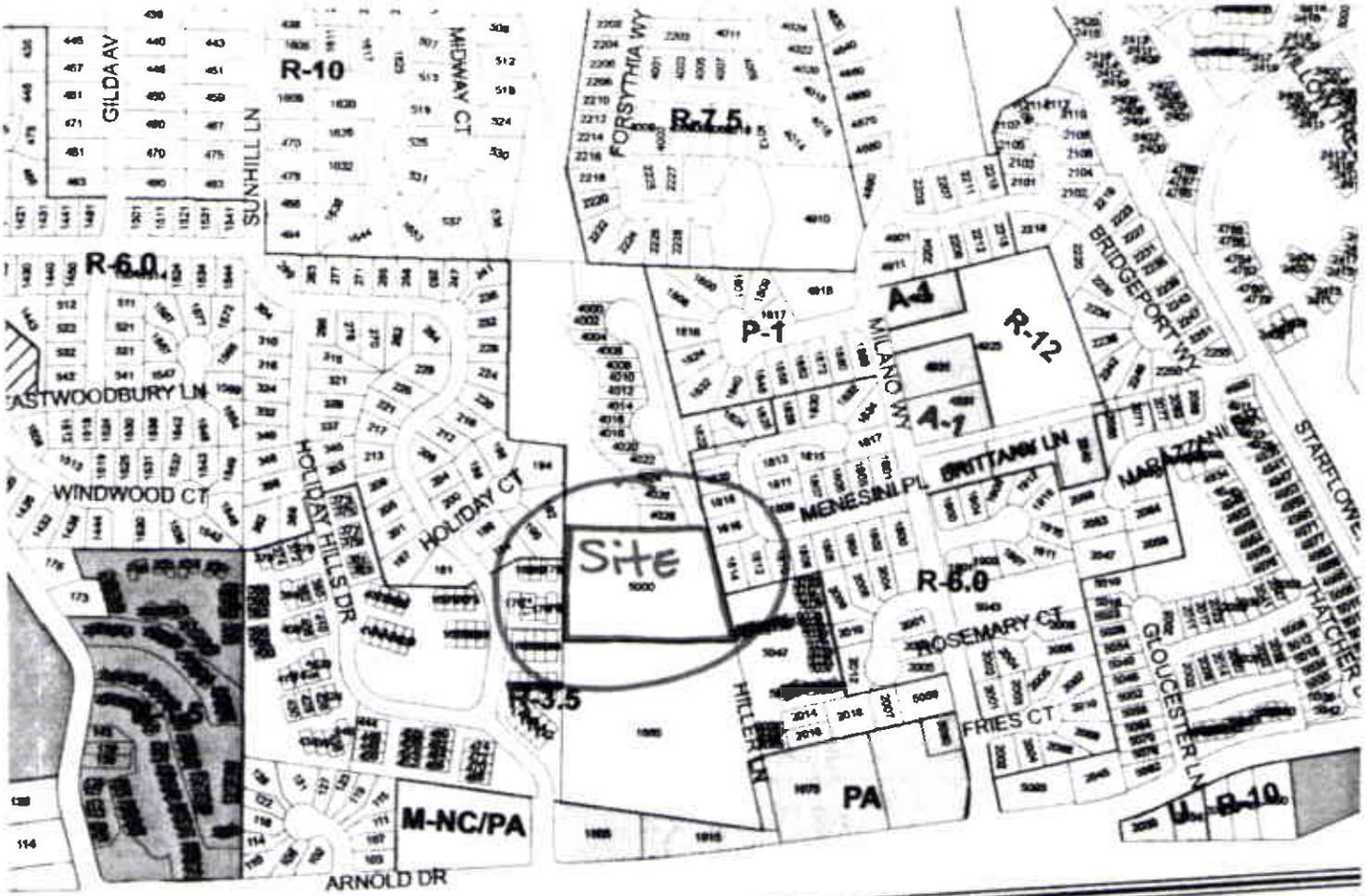
A. Site Context Map

- B. Resolution [DRAFT]
- C. Conditions of Approval [DRAFT]
- D. Draft Planning Commission Study Session Minutes - May 11, 2010
- E. Applicant's Letter dated 7/22/10
- F. Written Statement from Applicant dated 5/4/10
- G. Project Support Statement from Applicant
- H. Letter of Authorization from Concord Korean Baptist Church
- I. Letter of Authorization from PG&E
- J. Photo Simulations and Pictures
- K. Updated Coverage Maps
- L. Radio Frequency Radiation Report updated 7/22/10
- M. Noise Information
- N. Design Review Committee Staff Report – 8/11/10

EXHIBITS

Site Plan, Surveys, Equipment Layout Plans, Elevations, Construction Details, Electrical Details, and Grounding Plan

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RESOLUTION NO. PC 10-07

**A RESOLUTION OF THE PLANNING COMMISSION
OF THE CITY OF MARTINEZ**

**MAKING FINDINGS FOR THE APPROVAL OF USE PERMIT #08-16 AND DESIGN
REVIEW #08-26, FOR A NEW T-MOBILE WIRELESS TELECOMMUNICATION FACILITY
ON A PG&E TOWER AND EQUIPMENT IN A LEASED AREA OF APPROXIMATELY 198
SQ. FT. WITHIN THE TOWER FOOTPRINT AT 5000 HILLER LANE
(APN 161-080-026)**

WHEREAS, the City of Martinez received a request for a Use Permit and Design Review from T-Mobile to allow construction of a new co-located wireless telecommunication facility on an existing PG&E tower and equipment in a 9'x22' leased area within the tower footprint ("Project") at 5000 Hiller Lane (Concord Korean Baptist Church site), identified as APN 161-080-026 ("Project Lot", "Project site" or "site"), within the City of Martinez; and

WHEREAS, the General Plan policies applicable to the project site are set forth in the John Muir Parkway Specific Area Plan with the land use designation of Residential 0-6 units/ gross acre; and

WHEREAS, the zoning applicable to the site is R-10 (One-Family Residential: 10,000 square feet minimum lot area), as set forth in the Martinez Municipal Code, at Title 22-Zoning, and Chapter 22.12-Residential Districts (Zoning Ordinance) which allows for wireless telecommunication facilities with a conditional use permit and design review permit; and

WHEREAS, Chapter 22.39 Wireless Telecommunications Facilities - Section 22.39.050(3) requires Use Permit and Design Review approval by the Planning Commission to permit a wireless telecommunication facility; and

WHEREAS, the Project is categorically exempt from the requirements of CEQA, under Section 15301-Existing Facilities and Section 15311-Accessory Structures, because the Project consists of construction that is appurtenant to the existing PG&E facility; and

WHEREAS, the Planning Commission of the City of Martinez held a duly noticed public hearing on September 28, 2010, and considered public testimony on the matter and all other substantial evidence in the record; and

WHEREAS, the Planning Commission as part of its public hearing imposed certain Conditions of Approval on the Project for the Use Permit and Design Review which are required for the Project and incorporated into this Resolution; and

NOW, THEREFORE, the Planning Commission of the City of Martinez resolves as follows:

1. That the above recitals are found to be true and constitute part of the findings upon which this resolution is based.
2. In order to approve the Use Permit application, the Planning Commission must make the following findings (in bold below), which it hereby does:
 - (a) **The proposed location of the conditional use is in accord with the objectives of this title, and the purposes of the district in which the site is located.** The proposed wireless telecommunication facility is appropriate for the residential project site because of the existing PG&E tower with the other wireless carrier located there. Co-location of wireless telecommunication facilities is promoted to condense the number of sites with such facilities.
 - (b) **The proposed location of the conditional use and the proposed conditions under which it would be operated or maintained will not be detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity.** The Project will be a co-located facility, which is promoted by the "Wireless Telecommunications Facilities" ordinance (MMC Chapter 22.39), to reduce the amount of wireless facility sites in the City. Also, in order to be located in a residential area, T-Mobile has demonstrated that no other feasible alternative site exists. The equipment for the wireless telecommunication facility will be fenced and secured. The equipment will make minimal noise and will require maintenance every four to six weeks, not significantly increasing traffic activity at the site. Thus, the Project as proposed will not be detrimental to the public health, safety or welfare or materially injurious to properties or improvements in the vicinity.
 - (c) **The proposed conditional use will comply with each of the applicable provisions of this title.** The Project complies with each of the applicable provisions of Title 22-Zoning of the Martinez Municipal Code, including the standards and criteria for telecommunication facilities. In addition, the project meets the Federal Communications Commission (FCC) requirements for levels of Radio Frequency Radiation.
3. In order to approve the Design Review application, the Planning Commission must make the following findings (in bold below), which it hereby does.
 - a) **Complying with all other applicable provisions of the Martinez Municipal Code involving the physical development of buildings, structures and property, including use restrictions.** The proposed wireless telecommunication facility complies with all other applicable provisions of the Martinez Municipal Code and is also consistent with the design review criteria and standards.

- (b) **Provides desirable surroundings for occupants as well as for neighbors. Emphasis is placed upon exterior design with regard to height, bulk, and area openings; breaks in the facade facing on a public or private street; line and pitch of the roof; and arrangement of structures on the parcel.** The Project would be a co-located facility, which is promoted by the "Wireless Telecommunications Facilities" ordinance (MMC Chapter 22.39) to reduce the amount of wireless facility sites in the City. Also, in order to be located in a residential area, T-Mobile has demonstrated that no other feasible alternative site exists. T-Mobile has designed the top hat to look similar to the PG&E tower and will paint the top hat, antennas, and brackets the match the tower. The equipment enclosure, to be located at the tower base will not be visible from Hiller Lane. The equipment will comply with all FCC regulations and will be serviced every 4-6 weeks, which will not have a significant impact on traffic and activity at the site. The telecommunication site will only create a negligible amount of noise and will give off no fumes or odors.
- (c) **Has a harmonious relationship with existing and proposed neighboring developments avoiding both excessive variety and monotonous repetition, but allowing similarity of style, if warranted.** The Project will fit in with the site since it is similar to the other wireless facility at the site and the top hat, antennas, and brackets will resemble the PG&E towers materials and colors, allowing similarity of style. In addition, the proposed wireless facility will not exceed noise levels as required by the City's Noise Ordinance and will be in compliance with all FCC radio frequency regulations.
- (d) **Uses a limited palette of exterior colors; those colors must be harmonious and architecturally compatible with their surrounding environment.** T-Mobile will paint the top hat, antennas, and brackets to match the existing PG&E tower. The wooden fence surrounding the equipment enclosure will have a dark color stain to blend in with the base and footprint of the utility tower.
- (e) **Uses a limited number of materials on the exterior face of the building or structure. In addition, all interior surfaces normally visible from public property shall be finished.** A limited number of exterior materials will be used since T-Mobile will use materials that are similar to and resemble the PG&E tower for the 12' top hat lattice structure. The fence surrounding the equipment enclosure at the base of the tower will be made of wood.
- (f) **Has exterior lighting appropriately designed with respect to convenience, safety, and effect on occupants as well as neighbors.** This standard is not applicable to the Project since no exterior lighting is proposed.
- (g) **Effectively concealing work areas, both inside and outside of buildings,**

in the case of non-residential facilities. The equipment cabinets will be concealed by the wooden fence, tower base, and the adjacent Sprint/Nextel equipment shelter/building.

- (h) **Under grounding all utility boxes unless it can be shown that they can be effectively screened from the view of the general public.** The utility boxes in the equipment enclosure will be screened from view of the general public by the wooden fence.
- (i) **Designing the type and location of planting with respect to the preservation of specimen and landmark trees, water conservation as set forth in Chapter 22.35, and maintenance of all planting.** This standard is not applicable to the Project.
- (j) **Establishing a circulation pattern, parking layout and points of ingress and egress (both vehicular and pedestrian), designed to maximize pedestrian safety and convenience and to minimize traffic congestion resulting from the impediment of vehicular movement. When applicable, access for handicapped individuals should be considered.** This standard is not applicable to the Project.
- (k) **Ensuring that all signs be designed so that they are in scale with the subject development, and will not create a traffic hazard. Emphasis is placed upon the identification of the use or building rather than the advertising of same.** This standard is not applicable to the Project.
- (l) **Substantially preserves views from nearby properties where this can be done without severe or undue restrictions on the use of the site, balancing the property rights of the applicant and the affected property owner(s).** Given that the top hat will be designed to resemble the existing PG&E tower; the top hat, antennas, and brackets materials and paint will match the existing tower; the overall height of the tower will only increase approximately four feet; and the equipment enclosure will be located at the base and within the footprint of the tower, the Project will not result in any significant view loss.

NOW, BE IT FURTHER RESOLVED that based on the information contained in the entire administrative record and the findings set forth above, the Planning Commission of the City of Martinez hereby approves Use Permit #08-16 and Design Review #08-26, subject to the Conditions of Approval, incorporated herein by reference.

I HEREBY CERTIFY that the foregoing is a true and correct copy of a resolution duly adopted by the Planning Commission of the City of Martinez at a Regular Meeting of said Commission held on the 28th day of September, 2010, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAINED:

BY: _____
Lynette Busby
Planning Commission Chair

Anjana Mepani
Associate Planner

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CONDITIONS OF APPROVAL

DRAFT AS APPROVED BY PLANNING COMMISSION

Applicant Name: **T-Mobile/SiteCom, Inc. - Matt Veazey**

Location: **5000 Hiller Lane (APN 161-080-026) / PG&E Right-of-Way**

I. Description of Permit

These conditions apply to and constitute the approval of Use Permit #08-16 and Design Review #08-26 to allow construction of a new co-located wireless telecommunication facility on an existing PG&E tower at 5000 Hiller Lane (Concord Korean Baptist Church site). The project consists of adding a 12' lattice structure, with 8 antennas, at the top of the tower. T-Mobile will be leasing a 9'x22' area within the tower footprint for an equipment enclosure. The project is located in a residential zoning district, which requires a Use Permit and Design Review.

II. Exhibits

The following exhibits are hereby approved and incorporated as conditions of approval, except where specifically modified by these conditions:

EXHIBIT	DATE RECEIVED	PREPARED BY	PAGES
Site Plan, Surveys, Equipment Layout Plans, Elevations, Construction Details, Electrical Details, and Grounding Plan	September 14, 2010	MST Architects and Geil Engineering	8
Photo Simulations and Picture	May 4, 2010, July 1, 2010, and September 14, 2010	Previsualists Inc., WW Design & Consulting, Inc., and Applicant	6
Coverage Maps	July 1, 2010	Aircom International Ltd.	3

All construction plans and all improvements constructed pursuant to Use Permit #08-16 and Design Review #08-26 shall conform to these exhibits. Building permit plans shall include a checklist of these conditions for staff review and verification that the conditions have been met. Where a plan or further information is required by these conditions, it is subject to review and approval by the Planning Division, Engineering Division, or Building Division as noted.

III. Special Conditions that Apply to Use Permit #08-16 and Design Review #08-26

- A. Antennas, brackets, and top hat shall be painted to match the existing PG&E tower.
- B. Permit applications for wireless telecommunication facilities shall be valid for a period of up to ten (10) years from date of final discretionary approval and may be renewed prior to expiration by administrative action.

IV. Site Plan

- A. Provide site plan that shows all existing features and proposed structures.
- B. Fences, walls and retaining walls:
 - 1. All fencing, retaining walls, etc., shall be shown on the site plan.
 - 2. The equipment enclosure fence shall be wooden with a dark stain as indicated on the approved plans and photosimulations. Alternate materials will be subject to staff review and approval.

V. Noise Control and Dust

- A. All construction activities shall be restricted to Monday - Friday and to the hours of 7:00 a.m. to 7:00 p.m. Work on weekends and holidays shall be permitted between 9:00 a.m. to 5:00 p.m. The permittee shall post a sign on the site notifying all workers of this restriction.
- B. Telecommunication facilities shall operate in compliance with the noise exposure standards contained in the City's Noise Control Ordinance, Chapter 8.34 of the Martinez Municipal Code.
- C. Normal testing and maintenance activities shall occur between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday, excluding emergency repairs. Normal testing and maintenance activities, which do not involve the use or operation of telecommunications and maintenance equipment that is not audible from residences and other nearby sensitive receptors, may occur at all other times. The level of noise of any equipment used in routine maintenance and repairs shall not exceed the City's noise standards at any adjacent property line.
- D. Backup generators shall comply with the same noise standards referenced above and shall only be operated during power outages, emergency occurrences, or for testing and maintenance in accordance with item C above.
- E. All construction equipment shall be muffled in accordance with State Law.

VI. Radio Frequency Radiation

- A. Wireless telecommunication facilities operating alone and in conjunction with other telecommunication facilities shall not emit Radio Frequency Radiation (RFR) in excess of the standards for permissible human exposure to RFR as adopted by the Federal Communications Commission (FCC).
- B. The City may require one or more (periodic) post-construction RFR reports as a condition of project approval to verify that actual levels of RFR emitted by the approved facilities, operating alone and in combination with other approved facilities, substantially conform to the pre-approval RFR report and do not exceed current standards for permissible human exposure to RFR as adopted by the FCC.

VII. Lighting

- A. Manually operated, low wattage, hooded and downward directed exterior lighting shall be permitted for safety purposes only and shall not operate except when maintenance or safety personnel are present at night.
- B. Nighttime lighting of warning signs required near publicly accessible facilities must consist of low-wattage fixtures, and must be directed downward and hooded.
- C. Plans submitted for Building Permits shall include a detailed lighting plan including the location and type of all exterior lighting fixtures.

VIII. Grading

- A. All grading shall require a grading and drainage plan prepared by a registered Civil Engineer, where required by the Building Department. A grading permit or a site development permit, as approved by the City Engineer will be required prior to construction.
- B. The on-site finish grading shall require drainage to be directed away from all building foundations at a slope of 2 percent minimum to 20 percent maximum toward approved drainage facilities or swales. Non-paved drainage swales shall have a minimum slope of 1 percent. A minimum 4-ft. wide clear access shall be provided around each building.
- C. Contour grading techniques with spot elevations shall be employed throughout the project to achieve a more natural appearance, even where this will increase the amount of grading. Tops of cuts or toes of fills adjacent to existing public rights-of-way or easements shall be set back two feet minimum from said rights-of-way and easements.

- D. Erosion control measures shall be implemented per plans approved by the City Engineer for all grading work not completed before October 1. At the time of approval of the improvement and/or grading plans, an approved Erosion Control Plan prepared by a registered Civil Engineer shall be filed with the City Engineer.
- E. The finished grading shall be inspected and certified by the developer's engineer that it is in conformance with the approved Grading Plan and Soils Report pursuant to the provisions of Title 15 of the Martinez Municipal Code.
- F. Any grading on adjacent properties will require written approval of those property owners affected.
- G. If cultural resources are discovered during subsurface excavations, the Contractor shall cease construction and a qualified archeologist shall be contacted to make recommendations for mitigation.
- H. The plans shall include the boundary treatment shown on cross sections, drawn to scale, for retaining walls, fencing and drainage.

IX. Drainage

- A. All concentrated runoff shall be collected and conveyed to an approved storm drainage system. Existing slopes that have no additional discharge directed onto them or are not substantially re-graded can remain as natural runoff.
- B. Applicant shall not increase storm water runoff to adjacent downhill properties unless either, (1) a Drainage Release is signed by the property owner(s) of affected downhill lots and recorded in the office of the County Recorder; or (2) site drainage is collected and conveyed in approved drainage facilities within a private drainage easement through a downhill property. This condition may require collection of on-site runoff and construction of an off-site storm drainage system. All required releases and/or easements should be obtained prior to issuance of the site development or Building Permit whichever comes first.
- C. Concentrated drainage flows shall not be permitted to cross sidewalks or driveways.
- D. The developer shall comply with City and Contra Costa County Flood Control District Design requirements.

X. Agreements, Fees and Bonds

- A. All required improvement agreement(s) and all required fees and security deposits in connection with the proposed project shall be submitted to and

approved by City and ant other agencies having jurisdiction prior to City issuance of the building or site development permit, whichever comes first.

XI. Other Requirements

- A. Construction shall comply with all applicable City and State building codes and requirements including handicapped and energy conservation requirements, grading and erosion control ordinances.
- B. Electrical conduits shall be installed underground in an easement from source to proposed facilities as approved by the City Engineer. Applicant shall be responsible for repairing/replacing any damage to existing facilities and structures including but not limited to landscape, irrigation system, asphalt, curb, gutter, pavement, paths, structures, drainage facilities, utilities, etc.
- C. Applicant shall provide the City with documents from PG&E and the property owner approving installation of the telecommunication facility and equipment on their property.
- D. Complete improvement plans shall be submitted to the City for review and approval prior to construction.
- E. An encroachment permit is required prior to any work with the public right of way.

XII. Validity of Permit and Approval

- A. Planning Commission approval is subject to appeal to the City Council within ten calendar days of the approval.
- B. The use permit and design review permits and approval shall expire one year from the date on which they became effective (unless extended under C below) unless a building permit is obtained and construction begun within the one year time period. The effective date of the use permit and design review permits and approvals is September 28, 2010.
- C. The applicant may apply to extend the expiration date, September 28, 2011, if an application with the required fee is filed at least 45 days before the said expiration date. (Otherwise the use permit and design review permits and approval expire, are of no further force or effect and a new application for such permits is required.) A public hearing will be required for all extension applications, except those involving only Design Review. Extensions are not automatically approved: Changes in conditions, City policies, surrounding neighborhood, and other factors permitted to be considered under the law, may require or permit denial.

- D. Nothing contained herein shall be construed to permit any violation of relevant ordinances and regulations of the City of Martinez, or other public agency having jurisdiction.
- E. The applicant (and successor in interest) shall properly maintain and ultimately remove, if required, the approved wireless telecommunication facilities in compliance with the provisions of the Standards and Criteria for Telecommunication Facilities and any conditions of permit approval. The applicant shall cover the costs of removal from the premises if it has been inoperative or abandoned for a two-year period, or upon expiration of the permit applications.
- F. Posting of a financial security may be required to pay for the cost of preparation of electromagnetic frequency radiation reports evaluating the conformance of approved and operative facilities with applicable standards adopted by the Federal Communications Commission, if complaints are received. The applicant may post a single financial security in an amount not to exceed \$25,000.00 to satisfy electromagnetic frequency radiation reports for build out of the applicant's network facilities plan.
- G. The applicant, T-Mobile, shall defend, indemnify and hold harmless the City and its agents, officers, attorneys and employees from any claim, action, or proceeding brought against the City or its agents, officers, attorneys or employees to attack, set aside, void, or annul the Planning Commission's decision to approve Use Permit #08-16 and Design Review #08-26 and any environmental document approved in connection therewith. The indemnification shall include damages or fees awarded against the City, if any, cost of suit, attorney's fees, and other costs and expenses incurred in connection with such action whether incurred by T-Mobile, the City, and/or the parties initiating or bringing such action. The City shall promptly notify the applicant of any such claim, action or proceeding. The City shall retain the right to participate in any claim, action, or proceeding.
- H. T-Mobile shall defend, indemnify and hold harmless the City, its agents, officers, employees and attorneys for all costs incurred in additional investigation of, or study of, or for supplementing, preparing, redrafting, revising, or amending any document (such as the Negative Declaration), if made necessary by said legal action and if T-Mobile desires to pursue securing such approvals, after initiation of such litigation, which are conditioned on the approval of such documents.
- I. In the event that a claim, action or proceeding described in item G, above, is brought, the City shall promptly notify T-Mobile of the existence of the claim, action or proceeding, and the City will cooperate fully in the defense of such claim, action or proceeding. Nothing herein shall prohibit the City from participating in the defense of any claim, action or proceeding. In the event that T-Mobile is required to defend the City in connection with any said claim, action, or proceeding, the City shall retain the right to (i) approve the counsel

to so defend the City, (ii) approve all significant decisions concerning the manner in which the defense is conducted, and (iii) approve any and all settlements, which approval shall not be unreasonably withheld. The City shall also have the right not to participate in said defense, except that the City agrees to cooperate with T-Mobile in the defense of said claim, action or proceeding. If the City chooses to have counsel of its own to defend any claim, action or proceeding where T-Mobile have already retained counsel to defend the City in such matters, the fees and expenses of the counsel selected by the City shall be paid by the City, except that the fees and expenses of the City Attorney shall be paid by the applicant.

- J. T-Mobile shall indemnify the City for all the City's costs, fees, and damages which the City incurs in enforcing the above indemnification provisions.
- K. The Conditions of Project Approval set forth herein include certain fees, dedication requirements, reservation requirement, and other exactions. Pursuant to Government Code Section 66020(d)(1), these Conditions constitute written notice of a statement of the amount of such fees, and a description of the dedications, reservations, and other exactions. You are hereby further notified that the 90-day approval period in which you may protest these fees, dedications, reservations, and other exactions, pursuant to Government Code Section 66020(a), has begun. If you fail to file a protest within this 90-day period complying with all of the requirements of Section 66020, you will be legally barred from later challenging such exactions.

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Planning Commission
Regular Meeting
May 11, 2010
Martinez, CA

CALL TO ORDER

Chair Busby called the meeting to order at 7:04 p.m. with all members present except Commissioners Avila and Ford, who were excused; and Alternate Commissioner Kelly.

ROLL CALL

PRESENT: Chair Busby, Vice Chair Allen, Commissioners Burt, Keller, and Marchiano.
EXCUSED: Commissioners Avila and Ford, Alternate Paul Kelly.
ABSENT: None.

Staff present: Planning Manager Terry Blount and Associate Planner Anjana Mepani.

AGENDA CHANGES

None.

PUBLIC COMMENT

None.

CONSENT ITEMS

1. *Minutes of April 27, 2010, meeting.*

Commissioner Allen asked about the comments that she sent to be read into the public record and to be attached to the minutes. Planning Manager Terry Blount said the City Attorney advised against including them.

Commissioner Keller moved to approve the minutes, and Commissioner Burt, seconded the motion. The motion failed 3:1:1, with Chair Busby abstaining and Vice Chair Allen voting No. (Commissioners Avila and Ford absent.)

REGULAR ITEMS

2. *Telecommunication facility UP #08-16, DR #08-26 Study session to discuss and receive public input on a proposal for an installation of a new co-located wireless telecommunications facility on an existing PG&E tower at 5000 Hiller Lane (Concord Korean Baptist Church site). The proposed project consists of adding a 12' lattice structure, with 8 antennas, on top of the tower. T-Mobile will be leasing a 9'x22' area within the tower footprint for an equipment enclosure. The proposed project is located in a residential zoning district, which requires a Use Permit and Design Review. Applicant: T-Mobile (AM)*

Associate Planner Anjana Mepani presented the staff report.

MATT VEAZEY, T-Mobile, discussed the details of the proposed additions to the existing structure, noting the overall height will only be extended by 2 or 3 feet, not the full 12' of the latticework to be added. He also noted that the changes will improve the equipment space over its current appearance. He stated that issues with drainage and runoff should be easily addressed as well.

Commissioner Burt asked about the design and color of the proposed equipment shed. Mr. Veazey said there was no shed proposed, but he noted there will be wood screening around the storage cabinets that will be below the tower.

Vice Chair Allen commented on the co-location efforts of T-mobile and the City and county, and why the location at the nearby tower on the county building would not work. Mr. Veazey admitted he was new to the project and was not sure why that would not work, but that location might be a duplicate of other towers in T-Mobile's network and not increase the coverage area.

Vice Chair Allen said it seemed like the area served will overlap with one already existing T-Mobile tower. She asked if the other tower could then be removed. Mr. Veazey said it was highly unlikely, noting that some overlap is necessary in a heavily-trafficked area like this one.

Chair Busby opened the public hearing.

PATRICK CHANEY, nearby resident, said virtually no residents on Hiller Lane were notified. Ms. Mepani said those within a 300' radius were notified. Mr. Chaney said all 15 households on Hiller Lane should be informed with any activity impacting them.

Chair Busby noted this is only the first hearing and a study session, with additional opportunities for public input to follow.

Mr. Chaney said the visual impact will likely not be as drastic as he first thought. He expressed concern about the visual impact though, noting that the PG&E tower is ugly enough, without adding more to the structure.

WILLIAM BUTTE questioned whether an antenna at this location is actually needed by T-Mobile, noting they could add more equipment to their other sites to boost the coverage instead. He thought the location on the county building would be better. He also expressed concern about T-Mobile's record in maintaining their sites and whether the proposed screening would be adequate since there are children attending the Korean Church School. He suggested T-Mobile go back to their RF engineers to find a better site.

Seeing no further speakers, Chair Busby closed the public hearing.

Rebuttal:

Mr. Veazey said the ongoing need for new antenna sites costs hundreds of thousands of dollars, and if another site would work, T-Mobile would consider it. He indicated they were willing to do whatever possible to make this site more agreeable.

Planning Manager Terry Blount commented on the City's policy to notify property owners within a 300' radius, but he indicated staff will be glad to add others to the list if they request it.

Commissioner Burt said she remembered from a past public hearing that the City had promised that all residents on Hiller Lane were to be notified of anything affecting the church property.

Chair Busby asked, and Ms. Mepani confirmed that both homeowners associations were notified.

Commissioner Keller asked if PG&E is required to maintain the area under their towers. Ms. Mepani said yes. Some of the Commissioners noted that the pictures seem to indicate that is not being done here. Chair Busby pointed out that the weed abatement period is just starting. Mr. Blount said he will ask Code Enforcement to review the matter.

Commissioner Marchiano noted that what is in the picture is actually landscaping, and the weeds are removed regularly.

Commissioner Burt commented on the process in the past before co-location of antennas was standard practice, noting that co-location is preferable to creating a new structure for each company's antenna. She also stated it is good way for property owners (like the school district and the county) to get additional income. She further expressed that the designs now are far less intrusive, adding that she did not think the visual impact will be as bad as earlier structures. She observed that PG&E towers are a necessity to bring electricity to homes, and the same is true now of cell phone towers. She acknowledged that good care should be given to the design of the equipment etc at the Design Review stage. She asked about the concerns raised by Mr. Butte regarding the radiation exposure to the children.

Ms. Mepani indicated that exposure levels were within acceptable limits, and that legislation dictates that governments are not allowed to deny antennas based on the RF levels if they are within the limits set by the Telecommunications Act.

Vice Chair Allen asked if there are other telecommunication providers on the tower. Ms. Mepani said yes, Sprint and Nextel, although their equipment is lower on the tower.

Vice Chair Allen expressed concern that the information in the staff report seems to be out-of-date, as far as consideration of the county site etc. Ms. Mepani said the coverage maps are current. She noted that T-Mobile had started this application in 2008, but the lead person on the project has changed since and Mr. Veazey may not be aware of all the past history.

Commissioner Burt also noted that cellphone use has increased geometrically in recent years, and T-Mobile is one of the fastest growing companies.

Vice Chair Allen asked if more information could be provided about the negotiations with the county, noting they might be more willing to negotiate now. She thought that site could be better, especially there could be fewer additional sites needed in the future.

Chair Busby questioned whether the neighbors are notified of Design Review hearings. Staff said yes.

Mr. Blount said he could ask the applicant to give more information at a future hearing as to why this location was preferable to T-Mobile.

Chair Busby discussed the next steps in the process, confirming that Hiller Lane residents will be notified of future hearings on the application.

COMMISSION ITEMS

Commissioner Allen explained why she submitted her comments in writing to be added to the public record, as advised by City Manager previously with another matter.

Mr. Blount responded that he felt concern about several issues, which is why he spoke to the City Attorney regarding the matter - with the written communication she submitted possibly leading to "serial meeting", a violation of the Brown Act. He also noted that the City Attorney pointed out the importance of all Commissioners coming to the meetings without having made a decision in advance and reviewing all information presented. He acknowledged that even though Vice Chair Allen had not come to the meeting, the City Attorney had said it was generally inappropriate for Commissioners to comment on projects when not attending. He apologized for seeming to have ignored her comments. He said he still would have done the same thing even if he had known the City Manager had approved her actions, but he would have gone to the City Manager and explained his concerns.

Vice Chair Allen said it would have been better if she could have gotten communication from Mr. Blount explaining why it was not going to happen rather than only finding out in reading the minutes.

Commissioner Marchiano asked whether staff could've presented her comments at the meeting in her absence. Mr. Blount said no, because her decision should not have been made in advance, and Commissioners not in attendance generally don't have the opportunity to speak on an issue.

Commissioner Burt asked whether questions or concerns can be expressed in email to staff prior to a meeting. Mr. Blount said yes, in fact he encourages communication from the Commission to alert staff to issues of concern.

Vice Chair Allen said her issue with the project was with grading, and she wasn't sure if it was raised at the hearing. Commissioner Burt said it was not. Mr. Blount said it was included in the environmental documents however.

Vice Chair Allen asked if there is a process for reconsideration of a project. Mr. Blount said no, because the appeal period has expired. Vice Chair Allen asked if it could have been reconsidered if it had been done in a timely manner. Mr. Blount said he would research and let her know, for future reference.

STAFF ITEMS

Planning Manager Blount reviewed upcoming meeting dates, noting the Commission should plan on two meetings a month beginning in August and for the foreseeable future. If there are no items for an agenda, or if a quorum of the Commission is not available, then the meetings will be cancelled. He indicated the next meeting will be May 25th, with Alhambra Valley on the agenda, followed by meetings on June 22nd and July 27th.

Vice Chair Allen asked how far in advance meetings are noticed in the newspaper. Mr. Blount confirmed it is usually a 10-day notice, but for Alhambra Valley it will be published twice.

Vice Chair Allen asked if it is possible to tell what is on the next meeting's agenda. Mr. Blount said yes, he should be able to tell about upcoming items because of noticing requirements.

Mr. Blount also expressed that his foremost goal is to provide the best service possible to staff, the Commission, applicants and the public.

Commissioner Burt said that having only one meeting a month seemed like a good idea when Mr. Blount suggested it, but now it is apparent that it is best to plan for two meetings a month.

Vice Chair Allen asked if the Commission takes a break in August. Mr. Blount said the Council does, but not the Commission.

COMMUNICATIONS

None.

ADJOURNMENT

On motion by Commissioner Marchiano, seconded by Vice Chair Allen, the Commission present voted unanimously to adjourn at 8:10 p.m. (Commissioners Avila and Ford absent.)

Respectfully submitted,

Approved by the Planning Commission Chairperson

Transcribed by Mary Hougey

Lynette Busby

T-Mobile®

stick
together

T-Mobile USA, Inc.
Sacramento Market
Central CA / Northern NV

July 22, 2010

City of Martinez
Community Development
525 Henrietta Street
Martinez, CA 94553-2394

RE: Use Permit #08-16 and Design Review #08-26 for a new T-Mobile Wireless Facility to be located in a PG&E right-of-way at 5000 Hiller Lane – APN: 161-080-026

Dear Ms. Mepani:

This letter and related materials are in response to your request for additional information requested by the City of Martinez necessary prior to the meeting of the Design Review Committee:

1. **Facility Location:** 5000 Hiller Lane is the preferred location for T-Mobile's proposed communications facility. There are currently six existing cell sites that serve the immediate and surrounding area. The location at 5000 Hiller Lane fits very nicely into the existing matrix of T-Mobile cell sites. The proposed facility at Hiller Lane links site BA0124A to the east, sites BA11007 and BA21645 to the south, site BA02142 to the west and sites BA01231 and BA01246 to the north. The objective of this new site is to provide indoor coverage to T-Mobile's customers. The enhanced indoor coverage and related interface with the surrounding T-Mobile facilities can be seen in the graphic provided entitled BA11553 Candidate + Neighbors. Wireless users are requesting better coverage, particularly in their residences. T-Mobile customers are moving away from landline phone services and relying entirely on T-Mobile's wireless network. The location at 5000 Hiller Lane largely serves residential areas near the site. The increasing use of smart phones requires greater and greater capacity. The established use of this transmission tower as a communications facility on the subject parcel makes it an ideal candidate to serve the rapidly expanding needs of T-Mobile's customers. The development of T-Mobile's existing network has made other potential candidates in this search ring, like the County tower much less desirable. The other candidates do not serve the surrounding residential areas as well as 5000 Hiller Lane.

T-Mobile USA, Inc.
Office: (916) 643-8900
Fax: (916) 543-8910
1755 Creekside Oaks Drive, Ste 190
Sacramento, CA 95833-3662

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2. Facilities: It is possible to remove facilities but it happens very infrequently, as new sites become integral to the operation of an existing cellular network. It is also possible to increase the output of a given facility to cover a larger geographic area. The intent of this proposed facility is not to expand geographical coverage, but to handle the large and growing demands on T-Mobile's network in this area. In the digital world, expanded coverage on an existing site results in reduced capacity in that geographic area. As in building coverage becomes more desirable and necessary for its customers the proposed facility at 5000 Hiller Lane is a vital link to providing consistent service to its users. Increasing numbers of customers and calls using both voice and data require the development of new facilities. Those requirements cannot be met with existing facilities, if they could, T-Mobile would not spend the time and money necessary to develop wireless communications facilities in a given area. This site is being developed to enhance capacity, not coverage.
3. Top Hat/Antennas: The proposed facility is a four sectored site. There is one transmit and one receive antenna in each sector for a total of eight antennas. There are many options for antenna size and sector configurations. The proposed configuration at this site is a compromise between size and quantity of required antennas. Antennas that both transmit and receive are typically larger than the antennas proposed for this installation. The decision was made to reduce the overall height of the installation by using smaller antennas with the idea in mind that a reduced overall height will be less noticeable than an extra antenna in each sector. The overall height of the (E) PG&E tower is 121.3' AGL. The tower extension raises the overall height to the tower 123.3'. The proposed antennas will extend up to 125.7' AGL, a total extension of 4.2' which amounts to a 3% increase in overall tower height.
4. Radio Frequency Radiation Report: I have attached a Radio Frequency Report which is derived in part by the FCC OET65B Exposure Guidelines for measuring Maximum Permissible Exposure (MPE) on PCS Networks.
5. Red-Tailed Hawk(s): The Department of Fish and Game recommends a buffer zone of 300 feet in urban areas around the nests of state and federally protected raptor species. Those buffer zones should be maintained between March 1 and September 1 or until the protected species have fledged the nest. In Some cases a biological monitor can be retained to observe the nest while project activities are conducted. It is unlikely that T-Mobile will start construction before September 1st. The red-tailed hawk is not a protected state or federally protected species. T-Mobile will follow the guidelines established for the protection of endangered species as required by state and federal laws. There are no nests currently on this PGE tower.
6. Maintenance: It is the responsibility of the underlying landlord to maintain the area around and beneath the PG&E transmission tower. PG&E can and will clear and brush areas under and around their facilities for access and safety purposes. As a matter of course, T-Mobile would maintain the area surrounding its lease area to allow for the proper operation, access and maintenance of it facility.

Please let me know if I can be of any assistance regarding this project.

Thanks,

Matt Veazey

Matt Veazey
(916) 997-8213

May 4, 2010



**T-Mobile West Corporation
Site BA11553 / Korean Baptist Church
City of Martinez, Planning Review**

Written Statement

Type of Business:

T-Mobile West Corporation ("T-Mobile") has been authorized by the Federal Communications Commission to construct and operate a PCS wireless telecommunications network in the United States. T-Mobile's national all-digital network is based on the "GSM" and "UMTS" technologies. T-Mobile's GSM (voice) and UMTS (data) network combines digital cellular service, text/numeric paging, and wireless Internet service capabilities on one mobile phone.

T-Mobile is in the process of expanding its wireless network coverage in the City of Martinez. Specifically, T-Mobile is expanding its network to provide in building coverage throughout the City of Martinez to meet the increased demand of its customers. As more and more people buy "smart phones" that provide voice, text, video and internet services, the demand to provide "in-building" coverage in offices, stores and residences has greatly increased.

This proposed T-Mobile project is located on an existing PG&E transmission tower located at 5000 Hiller Lane, Martinez, CA 94553 APN: 161-080-026. The T-Mobile facility will consist of 8 panel antennas, 2 per sector, approximately 60" tall x 14" wide x 4" deep. In addition there will be one amplifier per antenna mounted adjacent to the antenna that is approximately 6" tall x 8" wide x 3" deep. T-Mobile will place two equipment cabinets inside a lease area approximately 9' long x 22' wide beneath PG&E's tower, inside the towers base. The equipment cabinets will be screened to minimize visual impact to the church and surrounding residents. The cabinets are approximately 4'-6" wide, 5' tall and 3' deep. The purpose of this site is to provide in building coverage for the businesses and residences on the north and south side of John Muir Parkway and Highway 4.

Justification Statement:

The economic, business and residential growth, along with increased general public usage of T-Mobile wireless services in the City of Martinez have significantly increased the volume of calls on the T-Mobile wireless facilities serving the area north and south John Muir Parkway and Highway 4. T-Mobile is expanding its network to provide in building coverage throughout the City of Martinez to meet the increased demand of its

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customers. As more and more people buy "smart phones" that provide voice, text, video and internet services, the demand to provide coverage in offices, stores and residences has greatly increased.

Site Specifications

The proposed T-Mobile project is located at the top of an existing PG&E transmission tower at 5000 Hiller Lane, Martinez, CA 94553. The T-Mobile facility will consist of 8 panel antennas approximately 60" tall x 14" wide x 4" deep. T-Mobile will paint the antennas with a non-glare paint to match the existing structure. In addition there will be one amplifier per antenna mounted adjacent to the antennas that are approximately 6" tall x 8" wide x 3" deep. T-Mobile will place two equipment cabinets inside a lease area approximately 9' long 22' wide inside the transmission towers legs. The cabinets are approximately 4'-6" wide, 5' tall and 3' deep, and will be painted with a non-glare paint to match other equipment on the rooftop. The equipment cabinets will also be surrounded by a screen wall. The proposed T-Mobile wireless telecommunications facility will utilize existing utility services located on the parcel. The purpose of this site is to provide in building coverage to businesses and residents north and south of John Muir Parkway and along Highway 4.

Land Use Compatibility:

1. The proposed T-Mobile antennas will be mounted on an existing PG&E transmission tower. The antennas and coax will be painted to match the color of the transmission tower to minimize the overall visual impact.
2. The proposed T-Mobile outdoor equipment cabinets will be designed to blend in with the existing communications facility already located on this tower. This will be accomplished by surrounding the proposed outdoor cabinets with a screen wall.

Statement of Operations:

No nuisances will be generated by the proposed wireless facility, nor will the facility injure the public health, safety, morals or general welfare. With proper care and separation, T-Mobile's GSM/UMTS technology does not interfere with any other forms of communication whether public or private. To the contrary, T-Mobile's GSM/UMTS technology will provide vital communication in emergency situations and will commonly be used by local residents and emergency personnel to protect the general public's health, safety and welfare.

Once the construction of the wireless facility is complete and the telephone switching equipment is fine-tuned, visitation to the site by service personnel for routine maintenance typically occurs an average of once a month. The site is entirely self-

monitored and connects directly to a central office where sophisticated computers alert personnel to any equipment malfunction.

Because the wireless facility will be unstaffed, there will be no regular hours of operation and no impact to existing local traffic patterns. No water or sanitation services will be required.

T-Mobile will comply with all FCC rules governing construction requirements, technical standards, interference protection, power and height limitations and radio frequency standards. In addition, T-Mobile will comply with all FAA and CPUC rules on site location and operation.

Relation to Existing T-Mobile Network:

Presently there are 5 existing T-Mobile sites in the immediate area, as shown on the coverage maps provided with this application. As the coverage maps suggests, outdoor coverage, in car coverage and in-building coverage will be greatly enhanced by the installation of this proposed T-Mobile site.

Environmental Impacts:

The T-Mobile facility will result in no significant impacts to the environment or to the area in which it is located. The facility produces no significant noise, smoke or odors. Construction will result in minimal modifications and disturbance to the building.

Benefits to the Community

The proposed T-Mobile facility will provide many benefits to City of Martinez residents, businesses and motorists in and around the intersection of John Muir Parkway and Highway 4. These benefits include the following:

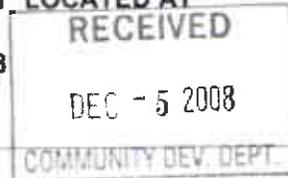
- 911 capability allowing motorists to summon aid and report dangerous situations.
- Support for emergency services by providing wireless communications to paramedics, firefighters, and law enforcement agencies.
- The ability to transmit data allowing for immediate access to vital information.
- A backup system to the land-line system in the event of power outages, natural or man-made disasters.
- Provide quality wireless communications including voice, paging, digital data capabilities for email, facsimile and internet access.
- Enhance the communications systems of residents who telecommute from their homes.

In summary, the new T-Mobile facility will provide "State of the Art" wireless telecommunication services to City of Martinez and become an important element of the City's infrastructure for future business and residential services.

PROJECT SUPPORT STATEMENT / SITE DEVELOPMENT PERMIT

T-MOBILE SITE "BA11553 / KOREAN BAPTIST CHURCH" LOCATED AT

5000 HILLER LANE, MARTINEZ CA 94553



INTRODUCTION

T-Mobile is seeking to improve and expand coverage to the residences and businesses in Martinez. T-Mobile maintains a strong customer base in this area and strives to expand and improve coverage for both current and potential customers. This new site will help handle increased traffic on the network, as well as ensure quality service. Additionally, this network development will increase public safety within these areas and bring wireless service to areas that are currently underserved.

Presently, the area surrounding portions of Highway 4 in Martinez suffers from poor coverage that has resulted in reoccurring dropped calls and ineffective attempt problems. In addition, the area is subjected to high call volumes, which can overload the network and result in dropped calls. To remedy these problems, T-Mobile proposes to develop a new site at 5000 Hiller Lane in Martinez. T-Mobile plans to collocate on the existing PG&E lattice tower located in the back parking lot of the Korean Baptist Church. T-Mobile plans to install a total of 8 antennas on the existing PG&E tower. Sprint/Nextel already has a site at this location. Therefore, T-Mobile's antennas will be installed on a 12' top hat. The associated ground equipment will be located in a 9' x 22' lease area that will be within the footprint of the PG&E tower.

This unmanned facility will provide service to area travelers, residents and businesses 24 hours a day, 7 days a week. This site will also serve as a back-up to the existing landline service in the area and will provide improved mobile communications, essential to modern day commerce and recreation. Most importantly, these sites are essential to enhance public safety.

COVERAGE AREA

This site has been designed to cover and enhance safety in the following areas:

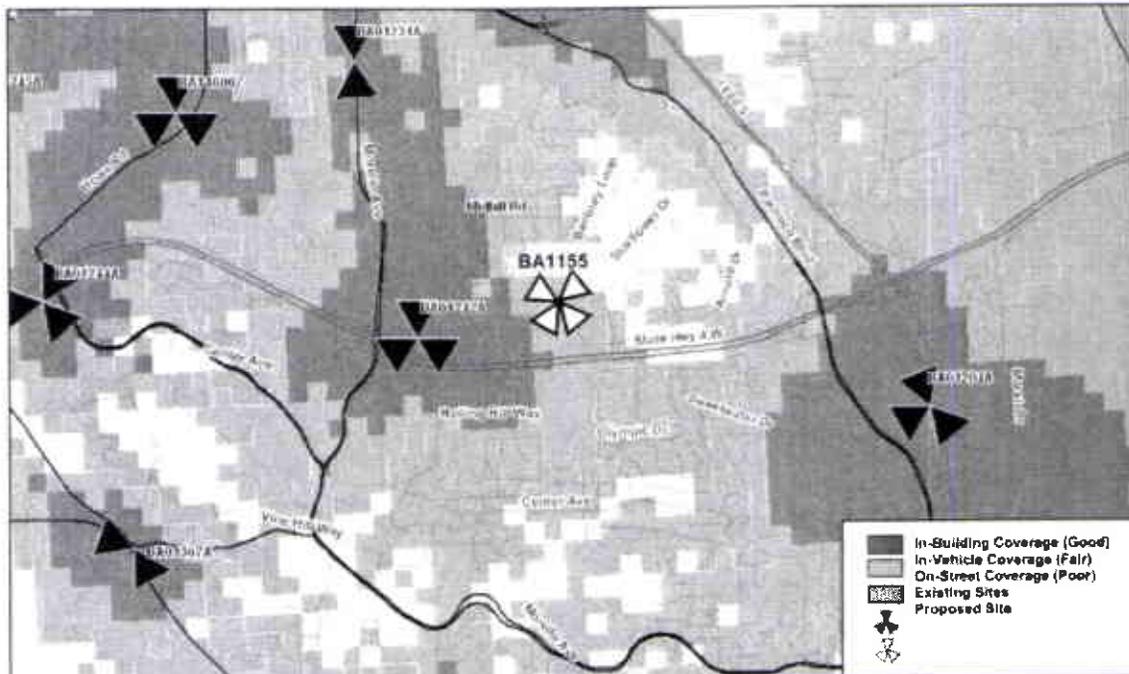
- Residences and business on the north and south side of John Muir Parkway and Highway 4
- Vehicles along John Muir Parkway and the surrounding area
- Vehicles along Highway 4

Currently, the service provided by T-Mobile in these areas is substandard due to coverage and capacity problems. The proposed site will improve coverage in this area, maintaining good service to homes, businesses and travelers along Highway 4 and the surrounding areas. This facility will also relieve the network of large amounts of call traffic, which will provide customers with a higher quality of service. The attached coverage map shows the need for the proposed coverage.



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EXISTING COVERAGE



The green areas on the coverage map demonstrate good coverage; the yellow areas indicate fair coverage and the grey areas indicate poor coverage.

ALTERNATIVE LOCATIONS CONSIDERED

As part of T-Mobile's standard practice, the development team searched the surrounding area for potential site locations, including any existing communications sites or existing tall structures for potential co-location opportunities. T-Mobile has been looking for a site in this area for a couple of years without success. The candidates that were considered for this search ring included existing PG&E towers, the Contra Costa County Lattice Tower on John Muir Road, County buildings, and property owned by the Diablo View HOA.

The development team first looks for potential collocation opportunities or existing tall structures on which a site can be developed. The potential collocation opportunities that would serve the coverage objectives included the Contra Costa County lattice tower and the PG&E towers. Developing a new site on the Diablo View hilltop was also considered.

The Contra Costa County lattice tower was one of the first candidates considered for this search ring. After almost a year of trying to reach an agreement with the County on critical deal points, to no avail, this candidate was abandoned. Based on the inability to reach an agreement at this location, T-Mobile did not pursue the rooftop of the County buildings in the area as potential alternatives. As mentioned above, developing a new free standing site on the Diablo View hilltop was also considered. This candidate was abandoned for the following reasons: (1) the City typically prefers collocations over new builds and (2) a neighborhood meeting was held in which a majority of the residents decided they did not want a site developed on this look out. Thus, the HOA ultimately decided that they would not move forward with the proposal.

Therefore, the selected candidate was the Korean Baptist Church PG&E collocation. At this location T-Mobile would be able to collocate on an existing structure and reach its coverage objective. A total of eight antennas will be installed on the PG&E tower. Sprint/Nextel's antennas are already located below the conductors. Therefore, T-Mobile proposes to install a 12' top hat on the tower for its installation. The associated ground

equipment will be located in a 9' x 22' lease area within the tower footprint. The equipment will be enclosed by a wood fence.

SAFETY BENEFITS OF IMPROVED WIRELESS SERVICE

Mobile phone use has become an extremely important system for public safety. Along roads and highways without public call boxes, mobile phones are often the only means for emergency roadside communication. Motorists with disabled vehicles (or worse) can use their phone to call in and request appropriate assistance. With good cellular coverage along important roadways, emergency response is just a phone call away. Furthermore, as a back up system to traditional landline phone service, mobile phones have proven to be extremely important during natural disasters and other catastrophes.

CONVENIENCE BENEFITS OF IMPROVED WIRELESS SERVICE

Modern day life has become increasingly dependent on instant communication. Whether it is a parent calling their child, spouse calling a spouse, or general contractor ordering materials to the jobsite, wireless phone service is no longer just a convenience. It has become a way of life and a way of business.

COMPLIANCE WITH FCC STANDARDS

This project will not interfere with any TV, radio, telephone, satellite, existing communication facilities or any other signals. Any interference would be against the Federal Law and would be a violation T-Mobile's FCC License.

CONSTRUCTION SCHEDULE

The construction of the facility will be in compliance with all local rules and regulations. The typical duration is approximately two months. The crew size will range from approximately two to ten individuals.

NOTICE OF ACTIONS AFFECTING THIS DEVELOPMENT PERMIT

In accordance with California Government Code Section 65945(a), T-Mobile requests notice of any proposal to adopt or amend the: general plan, specific plan, zoning ordinance, ordinance(s) affecting building or grading permits that would in any manner affect this development permit. Any such notice may be sent to 9300 Tech Center Dr, Suite 190, Sacramento, CA 95826.

TEMPORARY SERVICE DURING CONSTRUCTION

As part of this application, T-Mobile desires the ability to operate a temporary wireless site after the approval of this application. This temporary facility will supply the community with wireless service between the time the planning permit has been obtained and the construction of the facility is complete. A typical temporary facility includes a mast with three antennas located on a utility trailer that is raised to the height approved. A generator powers radio equipment on the ground. The temporary facility will be easily removed upon completion of the permanent wireless site.

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COMPLIANCE WITH CITY DEVELOPMENT STANDARDS

This project has been designed to comply with all applicable standards and requirements set forth in Chapter 22-39 (Wireless Telecommunications Facilities) and Resolution No. 071-01 of the City's Zoning Code:

Application Requirements Pursuant to Resolution No. 071-01:

1. **Location of Telecommunication Facilities**

T-Mobile's proposed installation is located in a manner as to avoid any land use conflicts. The equipment is located within the tower footprint, in what is otherwise unusable space. Per the City Zoning Code, location preference is given to collocations, publicly used structures and shared-location sites. This project fits all of these preferences. T-Mobile will be locating on a publicly used structure (PG&E lattice tower), and T-Mobile will be locating its facility where there is already another carrier, Sprint/ Nextel. Although wireless facilities are not typically permitted on residential properties, this site will be located on a parcel that is not used for residential purposes. In addition, the Code has an exception for collocations that are on existing power poles/towers/public utility structures. Since T-Mobile will be locating on a PG&E tower, we should fall within this exception.

2. **"Co-Location"**

The Code states that collocations should be encouraged when it is feasible and minimizes the adverse effects related to land use compatibility. Here, it is feasible to collocation and there is not an adverse effect related to this installation since the equipment will be located with the footprint of the tower.

3. **Radio Frequency**

Wireless carriers are heavily regulated by the FCC. Enclosed you will find a copy of the RF Study for this site demonstrating that this site will be well within the standards set by the FCC.

4. **Lighting**

T-Mobile doesn't intend to light this facility and will comply with all jurisdiction and FAA standards regarding lighting, if applicable.

5. **Roads & Access Way**

This site will be accessed via existing roads and parking areas. We do not anticipate an additional access route being needed for this installation.

6. **Vegetation**

The equipment will be located within the tower footprint and should not cause much disruption to any surrounding vegetation. At this location, T-Mobile would propose to install a wood fence to conceal the equipment from view. T-Mobile will work with the Planning Department to visually screen the equipment.

7. **Noise & Traffic**

T-Mobile will comply with the standards set forth by the City.

8. Visual Compatibility and Facility Site Design

This site has been designed to blend in with the environment to the extent feasible. See enclosed photo simulations. In addition, we have reduced our typically equipment space requirements to keep the facility within the tower footprint. Further, T-Mobile proposes to install a wood fence around the equipment to screen it from view.

9. Indemnification

See enclosed planning application signed by T-Mobile.

Application Requirements Pursuant to the Telecommunications Facility Checklist:

1. Completed Application Form

See enclosed Application for Development Permit.

2. Application Fee

See enclosed deposit fee in the amount of \$2,077.50.

3. Environmental Information

Not applicable to wireless facilities.

4. Letter of Explanation & Statement of Design Intent

See Project Support Statement above.

5. Letter of Authorization from Property Owner

See enclosed LOA.

6. Title Report

See enclosed title report dated October 2008.

7. Site Plans

Eighteen (18) full size sets of plans & one (1) reduced set of plans.

8. Photo simulations

See enclosed photo simulations.

9. Soils Report

Not applicable.

10. Arborist Report

Not applicable.

11. Business Plan

2ah

See Project Support Statement.

12. Network Facilities Plan

See enclosed description of services and maps.

13. Coverage Maps

See enclosed coverage maps.

14. Technical Information

See enclosed cut sheets, Project Support Statement, RF Report, and zoning drawings.

15. Alternative Sites

See Project Support Statement "Alternative Locations Considered".

16. RF Report / Compliance w/FCC Standards

See enclosed RF Report.

Site Name BA11553 / Korean Baptist Church

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LETTER OF AUTHORIZATION

This authorization is not a commitment of any kind. All land-use approvals obtained will be subject to the successful completion of lease negotiations and the approval of site configuration by an authorized representative

In order to determine the viability and permit the use of a wireless antenna facility on the real property ("Property") at the address stated below, the undersigned authority hereby grants, consents, and agrees with T-Mobile USA, Inc. as follows:

1. Entry Owner or authorized agent consents that approved T-Mobile USA, Inc. representatives may enter upon the Property to conduct and perform the following permitted activities: boundary and positioning surveys, radio propagation studies, soils boring/report, power and telephone existing service capacity, subsurface boring tests, an environmental site assessment, visual inspections of the Property, and other activities as T-Mobile USA, Inc. may deem necessary. T-Mobile USA, Inc. agrees to be responsible for all costs related to these surveys and investigations

2. Filings Owner or authorized agent consents that T-Mobile USA, Inc. may make and file applications for the proposed wireless antenna facility on the Property to such local, state and federal governmental entities whose approval may be necessary for this type of use. Submittals and approvals include zoning applications, variances, land use descriptions, and other submittals necessary for this type of use

3. Telco Owner or authorized agent consents that T-Mobile USA, Inc. may order, coordinate, and install upgraded telephone connectivity to the site. T-Mobile USA, Inc. agrees to be responsible for any and all costs related to this installation. Owner or authorized agent understands that the upgrade of telephone connectivity does not constitute construction start.

Authorized Signature:

David Y. Gill

Print Name

DAVID Y GILL

Title:

Sr PASTOR

Company (if applicable):

Concord Korean Baptist Church

Phone number:

925-228-3147

Dated:

11/1/2008

Assessor's Parcel Number

161-080-026

Property Address:

5000 Hiller Lane

Martinez, CA 94553



Pacific Gas and Electric Company

WE DELIVER ENERGY.

Telecommunications
Business Development

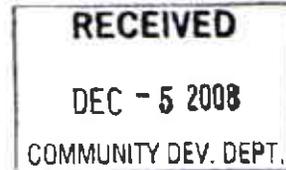
US Mail:
Mail Code 928L
Pacific Gas and Electric Company
PO Box 770000
San Francisco, CA 94177-0001

Overnight Mail:
Mail Code 928L
Pacific Gas and Electric Company
77 Beale Street, 29th Floor
San Francisco, CA 94105-1814

Fax: 415 973 3884

Letter of Authorization

Wireless Provider: T Mobile
Tower #: 40818046
Line Name: Tidewater-Sobrante
Location: 5000 Hiller Ln
APN:
SBE: 131-080-0268



Pacific Gas and Electric Company, as the owner of the transmission tower noted above, hereby authorizes the Wireless Provider, its agents, and contractors to:

- Access the parcel noted above, subsequent to advance notice
- Conduct necessary activities such as site design visits, radio frequency tests
- Apply for and obtain all land use approvals and permits, which are appropriate for the installation, construction, and continued operation of a PCS communications site (including antennas and all ancillary equipment and structures).

In granting this authorization, the Wireless Provider, its agents and contractors understand and agree to the following:

- As the applicant, the Wireless Provider and/or its agents and contractors (not PG&E) are fully responsible for the payment of all application, review and permitting fees
- The Wireless Provider, its agents and contractors will be licensed and insured for any work they perform;
- The Wireless Provider, its agents and contractors will hold harmless and indemnify PG&E from any claims for damages resulting from the above-mentioned activities
- The Wireless Provider, its agents and contractors will not interfere with or impair access to the property
- Signing this letter does not constitute a legally binding agreement to lease the property
- The Wireless Provider shall be responsible and liable for all conditions contained in a conditional use permit issued by the responsible jurisdiction on behalf of "owner," "applicant" and/or "development permit holder" as referenced in the conditional use permit for as long as the same may exist (without regard to the term of the Master License Agreement).

Eric Jacobson
Manager, Wireless Business Development
Pacific Gas and Electric Company

Site #: TM BA 11553
Site Name: Korean Church

Date: 11/14/08

Rev 0 5.30.08

20k

Existing

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T-Mobile ■ BA11553 Korean Baptist Church 5000 Hiller Lane
Martinez, CA 94553

Proposed



proposed T-Mobile
equipment area

Prepared by: WW Design & Consulting, Inc.
355A Cimarron Court
Walnut Creek, CA 94598
mfb@photosims.com

Photosimulation of the proposed telecommunication facility as seen looking east from the parking lot

2ad

Photosimulation of view looking northwest from Hiller Lane, approaching the church.



Photosimulation of view looking south from the end of Hiller Lane.



Existing

Korean Baptist Church
5000 Hiller Lane
Martinez, CA 94553
BA11553

.. T .. Mobile ..



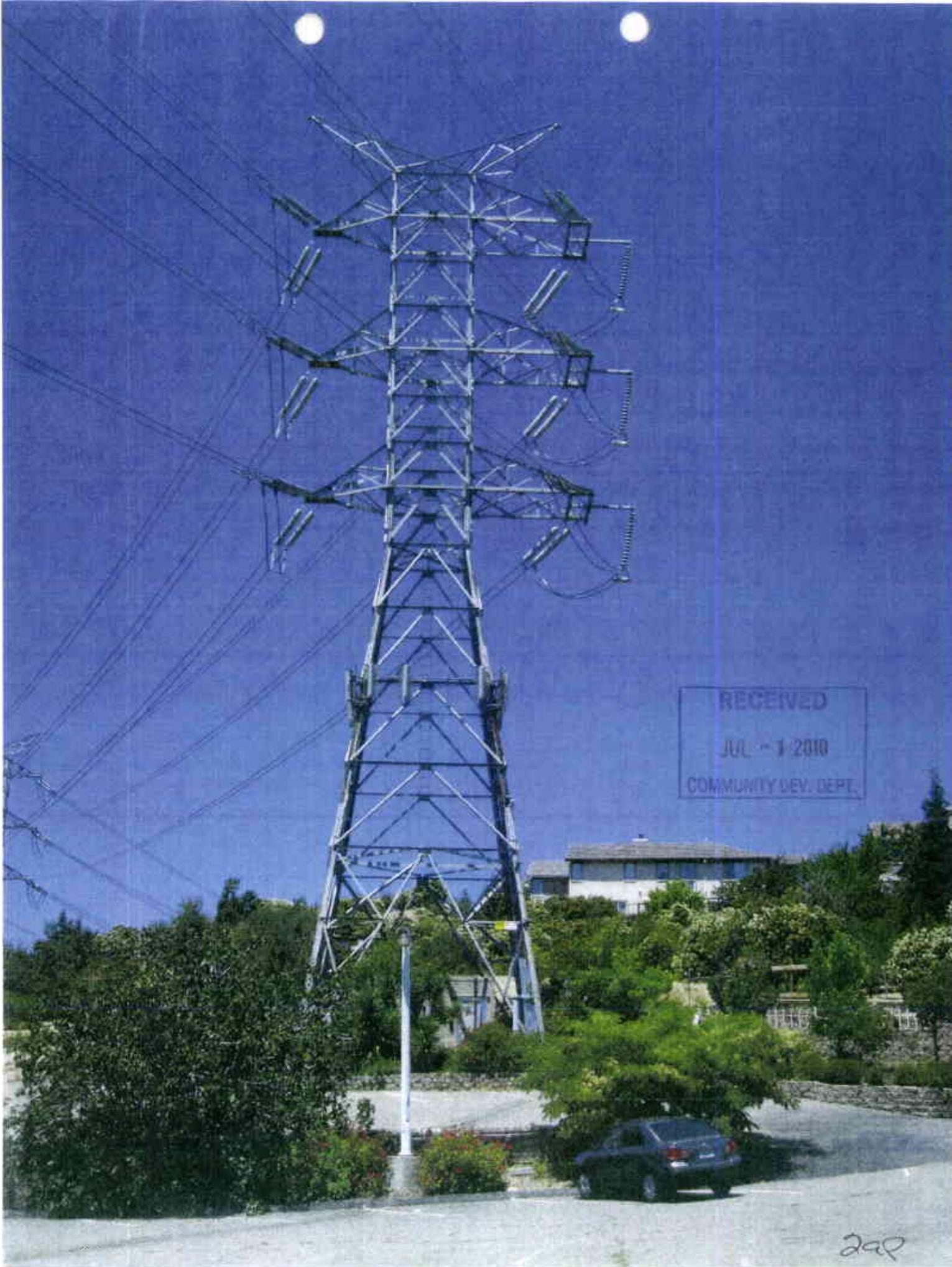
Proposed

Photosimulation of view looking north from the nearest point along Hwy 4.



Korean Baptist Church
5000 Hiller Lane
Martinez, CA 94553
BA11553

• T • Mobile •



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209

T-Mobile

SITE ANALYSIS OF RADIO FREQUENCY ELECTROMAGNETIC FIELDS



For Base Station: BA11553E

MPE Analysis Tool v2.9.04

ANTENNA SYSTEM 1 GSM CELL: **BA11553E_A**

- **THIS CELL IS NOT CATEGORICALLY EXCLUDED FROM THE REQUIREMENT FOR AN MPE ANALYSIS**
- PASS: 5% of GENERAL POPULATION/UNCONTROLLED EXPOSURE LIMITS
- PASS: GENERAL POPULATION/UNCONTROLLED EXPOSURE LIMITS
- PASS: OCCUPATIONAL/CONTROLLED EXPOSURE LIMITS

ANTENNA SYSTEM 1 GSM CELL: **BA11553E_B**

- **THIS CELL IS NOT CATEGORICALLY EXCLUDED FROM THE REQUIREMENT FOR AN MPE ANALYSIS**
- PASS: 5% of GENERAL POPULATION/UNCONTROLLED EXPOSURE LIMITS
- PASS: GENERAL POPULATION/UNCONTROLLED EXPOSURE LIMITS
- PASS: OCCUPATIONAL/CONTROLLED EXPOSURE LIMITS

ANTENNA SYSTEM 1 GSM CELL: **BA11553E_C**

- **THIS CELL IS NOT CATEGORICALLY EXCLUDED FROM THE REQUIREMENT FOR AN MPE ANALYSIS**
- PASS: 5% of GENERAL POPULATION/UNCONTROLLED EXPOSURE LIMITS
- PASS: GENERAL POPULATION/UNCONTROLLED EXPOSURE LIMITS
- PASS: OCCUPATIONAL/CONTROLLED EXPOSURE LIMITS

ANTENNA SYSTEM 1 GSM CELL: **BA11553E_D**

- **THIS CELL IS NOT CATEGORICALLY EXCLUDED FROM THE REQUIREMENT FOR AN MPE ANALYSIS**
- PASS: 5% of GENERAL POPULATION/UNCONTROLLED EXPOSURE LIMITS
- PASS: GENERAL POPULATION/UNCONTROLLED EXPOSURE LIMITS
- PASS: OCCUPATIONAL/CONTROLLED EXPOSURE LIMITS

2au

Name:

Region: --, Market: SF, Site: BA11553E

Site Address:

5000 HILLER LANE MARTINEZ CA

Submitted By:

EMRAN ELYAS

Date:

Thursday, July 22, 2010

FCC:

COMPLIANT

REPORT SUMMARY

This report was generated based on Engineering and Design data provided by **EMRAN ELYAS**, on behalf of T-Mobile, USA, for the cell site located at **5000 HILLER LANE MARTINEZ CA**. The report's technical data was derived in part by the FCC OET65B FCC Exposure Guidelines for measuring Maximum Permissible Exposure (MPE) on PCS Networks.

Based on the output power, number of radios and antenna height for this site:

Sector 'A' Antenna System(s):

- Meets 5% of the FCC general population/uncontrolled exposure limit at a horz distance of **1 ft** (0.3 m) from the nearest access point.
- Meets 100% of the FCC general population/uncontrolled exposure limit at a horz distance of **1 ft** (0.3 m) from the nearest access point.
- Meets 100% of the FCC occupational/controlled exposure limit at a horz distance of **1 ft** (0.3 m) from the nearest access point.

Sector 'B' Antenna System(s):

- Meets 5% of the FCC general population/uncontrolled exposure limit at a horz distance of **1 ft** (0.3 m) from the nearest access point.
- Meets 100% of the FCC general population/uncontrolled exposure limit at a horz distance of **1 ft** (0.3 m) from the nearest access point.
- Meets 100% of the FCC occupational/controlled exposure limit at a horz distance of **1 ft** (0.3 m) from the nearest access point.

Sector 'C' Antenna System(s):

- Meets 5% of the FCC general population/uncontrolled exposure limit at a horz distance of **1 ft** (0.3 m) from the nearest access point.
- Meets 100% of the FCC general population/uncontrolled exposure limit at a horz distance of **1 ft** (0.3 m) from the nearest access point.
- Meets 100% of the FCC occupational/controlled exposure limit at a horz distance of **1 ft** (0.3 m) from the nearest access point.

Sector 'D' Antenna System(s):

- Meets 5% of the FCC general population/uncontrolled exposure limit at a horz distance of **1 ft** (0.3 m) from the nearest access point.
- Meets 100% of the FCC general population/uncontrolled exposure limit at a horz distance of **1 ft** (0.3 m) from the nearest access point.
- Meets 100% of the FCC occupational/controlled exposure limit at a horz distance of **1 ft** (0.3 m) from the nearest access point.

For Occupational/Controlled personnel who may come in closer proximity to the antenna than **1 ft** (0.3 m) precautions must be exercised. For example, all personnel should have appropriate training on exposure limits. All T-Mobile personnel should wear exposure detecting equipment. Proper signage must be posted. Due to the mounting methods used by T-Mobile, USA, public access to the face of an antenna would be difficult.

- RF warning signs should be posted at the entrance of this site or at the entrance of the antenna locations.

Analysis Overview

T-Mobile, USA has conducted an analysis for determining the MPE compliance for the cell site located at **5000 HILLER LANE MARTINEZ CA** (Latitude: 37.9937, Longitude: -122.0898). This analysis consists of the actual site design parameters, the number of radios transmitting and the resulting calculation of the estimated RF field strength from the antennas. The output is then compared to the FCC recommended guidelines for human exposure to RF electromagnetic fields (OET65b).

Site Description

Based on the Engineering and Design Data provided by **EMRAN ELYAS**, the proposed site will have the following parameters:

Site Type:

Pole (this includes any non-building mounted site)

Collocation:

YES

Controlled/Uncontrolled Access to Antenna Face:

N/A

Antenna Make (GSM)

Sector	GSM (2G) Antenna Make
BA11553E_A	RFS
BA11553E_B	RFS
BA11553E_C	RFS
BA11553E_D	RFS

2aw

Antenna Model (GSM)

Sector	GSM (2G) Antenna Model
BA11553E A	APX16DWV_16DWVS_02
BA11553E B	APX16DWV_16DWVS_07
BA11553E C	APX16DWV_16DWVS_08
BA11553E D	APX16DWV_16DWVS_10

Frequency & Orientation (GSM)

Sector	GSM (2G) Freq / Azimuth
BA11553E A	1920 MHz / 40°
BA11553E B	1920 MHz / 130°
BA11553E C	1920 MHz / 210°
BA11553E D	1920 MHz / 310°

Max Antenna Gain & Horz beamwidth (GSM)

Sector	GSM (2G) Max Antenna Gain / BW
A	18 dBi / 62°
B	18 dBi / 62°
C	18 dBi / 62°
D	18 dBi / 62°

Max ERP_{Chan} into Ant (GSM)

Sector	GSM (2G) Max ERP _{Chan} into Ant
A	2.6191 Watts
B	2.6191 Watts
C	2.6191 Watts
D	2.6191 Watts

Max ERP_{Chan} (GSM)

Sector	GSM (2G) Max ERP _{Chan}
A	165.2556 Watts
B	165.2556 Watts
C	165.255 Watts
D	165.255 Watts

No. of Channels (GSM)

Sector	GSM (2G) No. of Channels
A	2
B	2
C	2
D	2

Total EIRP (GSM+UMTS)

ERP(W)*1.64*Channels*Activity_factor
(activity factor equals .65 for GSM and .95 for UMTS)

Sector	Total EIRP
A	352.325 Watts
B	352.325 Watts
C	352.324 Watts

D	352.324 Watts
---	---------------

Antenna Mounting:

[Unknown]

Distributed Antenna System (DAS):

NO

Radiation Centerline:

123.3 ft (37.6 m) AGL

Additional comments:

No comments for system 1.

No comments for system 2.

Antenna System 1, Cell: BA11553E_A

Dist (ft)	Deg	Gain (dBi)	Power Density		Charted		Max Distance Calc			
			Far Field ($\mu\text{W}/\text{cm}^2$)	Near Field ($\mu\text{W}/\text{cm}^2$)	Power Density ($\mu\text{W}/\text{cm}^2$)	% of Limit	Power Density (ft)	>5% MPE	>100% MPE	>500% MPE
0.656	87.68	18	8.56	6.74	6.74	0.67	0.66	0	0	0
0.6561	87.68	18	8.56	6.74	6.74	0.67	0	0	0	0
0.7	87.66	18	8.56	6.74	6.74	0.67	0	0	0	0
0.8	87.61	18	8.56	6.74	6.74	0.67	0	0	0	0
0.9	87.56	18	8.56	6.74	6.74	0.67	0	0	0	0
1	87.51	18	8.56	6.74	6.74	0.67	0	0	0	0
2	87.03	18	8.56	6.74	6.74	0.67	0	0	0	0
3	86.54	18	8.56	6.74	6.74	0.67	0	0	0	0
4	86.06	18	8.56	6.74	6.74	0.67	0	0	0	0
5	85.57	18	8.55	6.74	6.74	0.67	0	0	0	0
6	85.08	18	8.54	6.73	6.73	0.67	0	0	0	0
7	84.6	18	8.54	6.73	6.73	0.67	0	0	0	0
8	84.11	18	8.53	6.73	6.73	0.67	0	0	0	0
9	83.63	18	8.52	6.72	6.72	0.67	0	0	0	0
10	83.15	18	8.5	6.72	6.72	0.67	0	0	0	0
11	82.67	18	8.49	6.71	6.71	0.67	0	0	0	0
12	82.18	18	8.48	6.71	6.71	0.67	0	0	0	0
13	81.7	18	8.46	6.7	6.7	0.67	0	0	0	0
14	81.22	18	8.45	6.7	6.7	0.67	0	0	0	0
15	80.74	18	8.43	6.69	6.69	0.67	0	0	0	0
16	80.27	18	8.41	6.68	6.68	0.67	0	0	0	0
17	79.79	18	8.39	6.67	6.67	0.67	0	0	0	0
18	79.31	18	8.37	6.67	6.67	0.67	0	0	0	0
19	78.84	18	8.35	6.66	6.66	0.67	0	0	0	0
20	78.36	18	8.33	6.65	6.65	0.66	0	0	0	0
21	77.89	18	8.3	6.64	6.64	0.66	0	0	0	0
22	77.42	18	8.28	6.63	6.63	0.66	0	0	0	0
23	76.95	18	8.25	6.62	6.62	0.66	0	0	0	0
24	76.48	18	8.22	6.61	6.61	0.66	0	0	0	0
25	76.02	18	8.2	6.6	6.6	0.66	0	0	0	0
26	75.55	18	8.17	6.58	6.58	0.66	0	0	0	0

27	75.09	18	8.14	6.57	6.57	0.66	0	0	0	0
28	74.63	18	8.11	6.56	6.56	0.66	0	0	0	0
29	74.17	18	8.08	6.55	6.55	0.65	0	0	0	0
30	73.71	18	8.04	6.53	6.53	0.65	0	0	0	0
31	73.26	18	8.01	6.52	6.52	0.65	0	0	0	0
32	72.8	18	7.98	6.51	6.51	0.65	0	0	0	0
33	72.35	18	7.94	6.49	6.49	0.65	0	0	0	0
34	71.9	18	7.91	6.48	6.48	0.65	0	0	0	0
35	71.45	18	7.87	6.46	6.46	0.65	0	0	0	0
36	71.01	18	7.83	6.45	6.45	0.64	0	0	0	0
37	70.56	18	7.8	6.43	6.43	0.64	0	0	0	0
38	70.12	18	7.76	6.42	6.42	0.64	0	0	0	0
39	69.68	18	7.72	6.4	6.4	0.64	0	0	0	0
40	69.24	18	7.68	6.38	6.38	0.64	0	0	0	0
41	68.81	18	7.64	6.37	6.37	0.64	0	0	0	0
42	68.38	18	7.6	6.35	6.35	0.64	0	0	0	0
43	67.95	18	7.56	6.33	6.33	0.63	0	0	0	0
44	67.52	18	7.52	6.32	6.32	0.63	0	0	0	0
45	67.09	18	7.47	6.3	6.3	0.63	0	0	0	0
46	66.67	18	7.43	6.28	6.28	0.63	0	0	0	0
47	66.25	18	7.39	6.26	6.26	0.63	0	0	0	0
48	65.83	18	7.35	6.24	6.24	0.62	0	0	0	0
49	65.41	18	7.3	6.23	6.23	0.62	0	0	0	0
50	65	18	7.26	6.21	6.21	0.62	0	0	0	0
60	61.01	18	6.8	6.01	6.01	0.6	0	0	0	0
70	57.28	18	6.33	5.8	5.8	0.58	0	0	0	0
80	53.82	18	5.86	5.58	5.58	0.56	0	0	0	0
90	50.62	18	5.41	5.36	5.36	0.54	0	0	0	0
100	47.67	18	4.98	5.14	4.98	0.5	0	0	0	0
110	44.96	18	4.58	4.93	4.58	0.46	0	0	0	0
120	42.47	18	4.2	4.72	4.2	0.42	0	0	0	0
130	40.18	18	3.86	4.53	3.86	0.39	0	0	0	0
140	38.08	18	3.55	4.34	3.55	0.36	0	0	0	0
150	36.14	18	3.27	4.16	3.27	0.33	0	0	0	0
160	34.36	18	3.01	4	3.01	0.3	0	0	0	0
170	32.72	18	2.78	3.84	2.78	0.28	0	0	0	0
180	31.2	18	2.57	3.69	2.57	0.26	0	0	0	0
190	29.8	18	2.38	3.55	2.38	0.24	0	0	0	0
200	28.5	18	2.21	3.42	2.21	0.22	0	0	0	0
210	27.29	18	2.05	3.3	2.05	0.21	0	0	0	0
220	26.17	18	1.91	3.18	1.91	0.19	0	0	0	0
230	25.12	18	1.78	3.07	1.78	0.18	0	0	0	0
240	24.14	18	1.66	2.97	1.66	0.17	0	0	0	0
250	23.23	18	1.56	2.87	1.56	0.16	0	0	0	0
260	22.37	18	1.46	2.78	1.46	0.15	0	0	0	0
270	21.57	18	1.37	2.7	1.37	0.14	0	0	0	0
280	20.82	18	1.29	2.61	1.29	0.13	0	0	0	0
290	20.11	18	1.21	2.54	1.21	0.12	0	0	0	0
300	19.44	18	1.14	2.46	1.14	0.11	0	0	0	0
310	18.81	18	1.08	2.4	1.08	0.11	0	0	0	0
320	18.21	18	1.02	2.33	1.02	0.1	0	0	0	0
330	17.65	18	0.97	2.27	0.97	0.1	0	0	0	0
340	17.11	18	0.92	2.21	0.92	0.09	0	0	0	0
350	16.6	18	0.87	2.15	0.87	0.09	0	0	0	0

360	16.12	18	0.83	2.1	0.83	0.08	0	0	0	0
370	15.66	18	0.79	2.05	0.79	0.08	0	0	0	0
380	15.22	18	0.75	2	0.75	0.08	0	0	0	0
390	14.81	18	0.72	1.95	0.72	0.07	0	0	0	0
400	14.41	18	0.68	1.9	0.68	0.07	0	0	0	0
410	14.03	18	0.65	1.86	0.65	0.07	0	0	0	0
420	13.67	18	0.62	1.82	0.62	0.06	0	0	0	0
430	13.32	18	0.6	1.78	0.6	0.06	0	0	0	0
440	12.99	18	0.57	1.74	0.57	0.06	0	0	0	0
450	12.67	18	0.55	1.71	0.55	0.05	0	0	0	0
460	12.36	18	0.53	1.67	0.53	0.05	0	0	0	0
470	12.07	18	0.51	1.64	0.51	0.05	0	0	0	0
480	11.79	18	0.49	1.61	0.49	0.05	0	0	0	0
490	11.52	18	0.47	1.58	0.47	0.05	0	0	0	0
500	11.26	18	0.45	1.55	0.45	0.05	0	0	0	0
600	9.11	18	0.32	1.3	0.32	0.03	0	0	0	0
700	7.55	18	0.24	1.12	0.24	0.02	0	0	0	0
800	6.38	18	0.18	0.98	0.18	0.02	0	0	0	0
900	5.46	18	0.14	0.88	0.14	0.01	0	0	0	0
1000	4.72	18	0.12	0.79	0.12	0.01	0	0	0	0
1100	4.11	18	0.1	0.72	0.1	0.01	0	0	0	0
1200	3.61	18	0.08	0.66	0.08	0.01	0	0	0	0
1300	3.18	18	0.07	0.61	0.07	0.01	0	0	0	0
1400	2.81	18	0.06	0.57	0.06	0.01	0	0	0	0
1500	2.49	18	0.05	0.53	0.05	0.01	0	0	0	0
1600	2.21	18	0.05	0.5	0.05	0	0	0	0	0
1700	1.96	18	0.04	0.47	0.04	0	0	0	0	0
1800	1.74	18	0.04	0.44	0.04	0	0	0	0	0
1900	1.55	18	0.03	0.42	0.03	0	0	0	0	0
2000	1.37	18	0.03	0.4	0.03	0	0	0	0	0

Antenna System 1, Cell: BA11553E_B

Dist (ft)	Deg	Gain (dBi)	Power Density		Charted		Max Distance Calc			
			Far Field ($\mu\text{W}/\text{cm}^2$)	Near Field ($\mu\text{W}/\text{cm}^2$)	Power Density ($\mu\text{W}/\text{cm}^2$)	% of Limit	Power Density (ft)	>5% MPE	>100% MPE	>500% MPE
0.656	82.68	18	8.56	6.74	6.74	0.67	0.66	0	0	0
0.6561	82.68	18	8.56	6.74	6.74	0.67	0	0	0	0
0.7	82.66	18	8.56	6.74	6.74	0.67	0	0	0	0
0.8	82.61	18	8.56	6.74	6.74	0.67	0	0	0	0
0.9	82.56	18	8.56	6.74	6.74	0.67	0	0	0	0
1	82.51	18	8.56	6.74	6.74	0.67	0	0	0	0
2	82.03	18	8.56	6.74	6.74	0.67	0	0	0	0
3	81.54	18	8.56	6.74	6.74	0.67	0	0	0	0
4	81.06	18	8.56	6.74	6.74	0.67	0	0	0	0
5	80.57	18	8.55	6.74	6.74	0.67	0	0	0	0
6	80.08	18	8.54	6.73	6.73	0.67	0	0	0	0
7	79.6	18	8.54	6.73	6.73	0.67	0	0	0	0
8	79.11	18	8.53	6.73	6.73	0.67	0	0	0	0
9	78.63	18	8.52	6.72	6.72	0.67	0	0	0	0
10	78.15	18	8.5	6.72	6.72	0.67	0	0	0	0
11	77.67	18	8.49	6.71	6.71	0.67	0	0	0	0
12	77.18	18	8.48	6.71	6.71	0.67	0	0	0	0
13	76.7	18	8.46	6.7	6.7	0.67	0	0	0	0

14	76.22	18	8.45	6.7	6.7	0.67	0	0	0	0
15	75.74	18	8.43	6.69	6.69	0.67	0	0	0	0
16	75.27	18	8.41	6.68	6.68	0.67	0	0	0	0
17	74.79	18	8.39	6.67	6.67	0.67	0	0	0	0
18	74.31	18	8.37	6.67	6.67	0.67	0	0	0	0
19	73.84	18	8.35	6.66	6.66	0.67	0	0	0	0
20	73.36	18	8.33	6.65	6.65	0.66	0	0	0	0
21	72.89	18	8.3	6.64	6.64	0.66	0	0	0	0
22	72.42	18	8.28	6.63	6.63	0.66	0	0	0	0
23	71.95	18	8.25	6.62	6.62	0.66	0	0	0	0
24	71.48	18	8.22	6.61	6.61	0.66	0	0	0	0
25	71.02	18	8.2	6.6	6.6	0.66	0	0	0	0
26	70.55	18	8.17	6.58	6.58	0.66	0	0	0	0
27	70.09	18	8.14	6.57	6.57	0.66	0	0	0	0
28	69.63	18	8.11	6.56	6.56	0.66	0	0	0	0
29	69.17	18	8.08	6.55	6.55	0.65	0	0	0	0
30	68.71	18	8.04	6.53	6.53	0.65	0	0	0	0
31	68.26	18	8.01	6.52	6.52	0.65	0	0	0	0
32	67.8	18	7.98	6.51	6.51	0.65	0	0	0	0
33	67.35	18	7.94	6.49	6.49	0.65	0	0	0	0
34	66.9	18	7.91	6.48	6.48	0.65	0	0	0	0
35	66.45	18	7.87	6.46	6.46	0.65	0	0	0	0
36	66.01	18	7.83	6.45	6.45	0.64	0	0	0	0
37	65.56	18	7.8	6.43	6.43	0.64	0	0	0	0
38	65.12	18	7.76	6.42	6.42	0.64	0	0	0	0
39	64.68	18	7.72	6.4	6.4	0.64	0	0	0	0
40	64.24	18	7.68	6.38	6.38	0.64	0	0	0	0
41	63.81	18	7.64	6.37	6.37	0.64	0	0	0	0
42	63.38	18	7.6	6.35	6.35	0.64	0	0	0	0
43	62.95	18	7.56	6.33	6.33	0.63	0	0	0	0
44	62.52	18	7.52	6.32	6.32	0.63	0	0	0	0
45	62.09	18	7.47	6.3	6.3	0.63	0	0	0	0
46	61.67	18	7.43	6.28	6.28	0.63	0	0	0	0
47	61.25	18	7.39	6.26	6.26	0.63	0	0	0	0
48	60.83	18	7.35	6.24	6.24	0.62	0	0	0	0
49	60.41	18	7.3	6.23	6.23	0.62	0	0	0	0
50	60	18	7.26	6.21	6.21	0.62	0	0	0	0
60	56.01	18	6.8	6.01	6.01	0.6	0	0	0	0
70	52.28	18	6.33	5.8	5.8	0.58	0	0	0	0
80	48.82	18	5.86	5.58	5.58	0.56	0	0	0	0
90	45.62	18	5.41	5.36	5.36	0.54	0	0	0	0
100	42.67	18	4.98	5.14	4.98	0.5	0	0	0	0
110	39.96	18	4.58	4.93	4.58	0.46	0	0	0	0
120	37.47	18	4.2	4.72	4.2	0.42	0	0	0	0
130	35.18	18	3.86	4.53	3.86	0.39	0	0	0	0
140	33.08	18	3.55	4.34	3.55	0.36	0	0	0	0
150	31.14	18	3.27	4.16	3.27	0.33	0	0	0	0
160	29.36	18	3.01	4	3.01	0.3	0	0	0	0
170	27.72	18	2.78	3.84	2.78	0.28	0	0	0	0
180	26.2	18	2.57	3.69	2.57	0.26	0	0	0	0
190	24.8	18	2.38	3.55	2.38	0.24	0	0	0	0
200	23.5	18	2.21	3.42	2.21	0.22	0	0	0	0
210	22.29	18	2.05	3.3	2.05	0.21	0	0	0	0
220	21.17	18	1.91	3.18	1.91	0.19	0	0	0	0

230	20.12	18	1.78	3.07	1.78	0.18	0	0	0	0
240	19.14	18	1.66	2.97	1.66	0.17	0	0	0	0
250	18.23	18	1.56	2.87	1.56	0.16	0	0	0	0
260	17.37	18	1.46	2.78	1.46	0.15	0	0	0	0
270	16.57	18	1.37	2.7	1.37	0.14	0	0	0	0
280	15.82	18	1.29	2.61	1.29	0.13	0	0	0	0
290	15.11	18	1.21	2.54	1.21	0.12	0	0	0	0
300	14.44	18	1.14	2.46	1.14	0.11	0	0	0	0
310	13.81	18	1.08	2.4	1.08	0.11	0	0	0	0
320	13.21	18	1.02	2.33	1.02	0.1	0	0	0	0
330	12.65	18	0.97	2.27	0.97	0.1	0	0	0	0
340	12.11	18	0.92	2.21	0.92	0.09	0	0	0	0
350	11.6	18	0.87	2.15	0.87	0.09	0	0	0	0
360	11.12	18	0.83	2.1	0.83	0.08	0	0	0	0
370	10.66	18	0.79	2.05	0.79	0.08	0	0	0	0
380	10.22	18	0.75	2	0.75	0.08	0	0	0	0
390	9.81	18	0.72	1.95	0.72	0.07	0	0	0	0
400	9.41	18	0.68	1.9	0.68	0.07	0	0	0	0
410	9.03	18	0.65	1.86	0.65	0.07	0	0	0	0
420	8.67	18	0.62	1.82	0.62	0.06	0	0	0	0
430	8.32	18	0.6	1.78	0.6	0.06	0	0	0	0
440	7.99	18	0.57	1.74	0.57	0.06	0	0	0	0
450	7.67	18	0.55	1.71	0.55	0.05	0	0	0	0
460	7.36	18	0.53	1.67	0.53	0.05	0	0	0	0
470	7.07	18	0.51	1.64	0.51	0.05	0	0	0	0
480	6.79	18	0.49	1.61	0.49	0.05	0	0	0	0
490	6.52	18	0.47	1.58	0.47	0.05	0	0	0	0
500	6.26	18	0.45	1.55	0.45	0.05	0	0	0	0
600	4.11	18	0.32	1.3	0.32	0.03	0	0	0	0
700	2.55	18	0.24	1.12	0.24	0.02	0	0	0	0
800	1.38	18	0.18	0.98	0.18	0.02	0	0	0	0
900	0.46	18	0.14	0.88	0.14	0.01	0	0	0	0
1000	-0.28	18	0.12	0.79	0.12	0.01	0	0	0	0
1100	-0.89	18	0.1	0.72	0.1	0.01	0	0	0	0
1200	-1.39	18	0.08	0.66	0.08	0.01	0	0	0	0
1300	-1.82	18	0.07	0.61	0.07	0.01	0	0	0	0
1400	-2.19	18	0.06	0.57	0.06	0.01	0	0	0	0
1500	-2.51	18	0.05	0.53	0.05	0.01	0	0	0	0
1600	-2.79	18	0.05	0.5	0.05	0	0	0	0	0
1700	-3.04	18	0.04	0.47	0.04	0	0	0	0	0
1800	-3.26	18	0.04	0.44	0.04	0	0	0	0	0
1900	-3.45	18	0.03	0.42	0.03	0	0	0	0	0
2000	-3.63	18	0.03	0.4	0.03	0	0	0	0	0

Antenna System 1, Cell: BA11553E_C

Dist (ft)	Deg	Gain (dBi)	Power Density		Charted		Max Distance Calc			
			Far Field ($\mu\text{W}/\text{cm}^2$)	Near Field ($\mu\text{W}/\text{cm}^2$)	Power Density ($\mu\text{W}/\text{cm}^2$)	% of Limit	Power Density (ft)	>5% MPE	>100% MPE	>500% MPE
0.656	81.68	18	8.56	6.74	6.74	0.67	0.66	0	0	0
0.6561	81.68	18	8.56	6.74	6.74	0.67	0	0	0	0
0.7	81.66	18	8.56	6.74	6.74	0.67	0	0	0	0
0.8	81.61	18	8.56	6.74	6.74	0.67	0	0	0	0
0.9	81.56	18	8.56	6.74	6.74	0.67	0	0	0	0

2bc

1	81.51	18	8.56	6.74	6.74	0.67	0	0	0	0
2	81.03	18	8.56	6.74	6.74	0.67	0	0	0	0
3	80.54	18	8.56	6.74	6.74	0.67	0	0	0	0
4	80.06	18	8.56	6.74	6.74	0.67	0	0	0	0
5	79.57	18	8.55	6.74	6.74	0.67	0	0	0	0
6	79.08	18	8.54	6.73	6.73	0.67	0	0	0	0
7	78.6	18	8.54	6.73	6.73	0.67	0	0	0	0
8	78.11	18	8.53	6.73	6.73	0.67	0	0	0	0
9	77.63	18	8.52	6.72	6.72	0.67	0	0	0	0
10	77.15	18	8.5	6.72	6.72	0.67	0	0	0	0
11	76.67	18	8.49	6.71	6.71	0.67	0	0	0	0
12	76.18	18	8.48	6.71	6.71	0.67	0	0	0	0
13	75.7	18	8.46	6.7	6.7	0.67	0	0	0	0
14	75.22	18	8.45	6.7	6.7	0.67	0	0	0	0
15	74.74	18	8.43	6.69	6.69	0.67	0	0	0	0
16	74.27	18	8.41	6.68	6.68	0.67	0	0	0	0
17	73.79	18	8.39	6.67	6.67	0.67	0	0	0	0
18	73.31	18	8.37	6.67	6.67	0.67	0	0	0	0
19	72.84	18	8.35	6.66	6.66	0.67	0	0	0	0
20	72.36	18	8.33	6.65	6.65	0.66	0	0	0	0
21	71.89	18	8.3	6.64	6.64	0.66	0	0	0	0
22	71.42	18	8.28	6.63	6.63	0.66	0	0	0	0
23	70.95	18	8.25	6.62	6.62	0.66	0	0	0	0
24	70.48	18	8.22	6.61	6.61	0.66	0	0	0	0
25	70.02	18	8.2	6.6	6.6	0.66	0	0	0	0
26	69.55	18	8.17	6.58	6.58	0.66	0	0	0	0
27	69.09	18	8.14	6.57	6.57	0.66	0	0	0	0
28	68.63	18	8.11	6.56	6.56	0.66	0	0	0	0
29	68.17	18	8.08	6.55	6.55	0.65	0	0	0	0
30	67.71	18	8.04	6.53	6.53	0.65	0	0	0	0
31	67.26	18	8.01	6.52	6.52	0.65	0	0	0	0
32	66.8	18	7.98	6.51	6.51	0.65	0	0	0	0
33	66.35	18	7.94	6.49	6.49	0.65	0	0	0	0
34	65.9	18	7.91	6.48	6.48	0.65	0	0	0	0
35	65.45	18	7.87	6.46	6.46	0.65	0	0	0	0
36	65.01	18	7.83	6.45	6.45	0.64	0	0	0	0
37	64.56	18	7.8	6.43	6.43	0.64	0	0	0	0
38	64.12	18	7.76	6.42	6.42	0.64	0	0	0	0
39	63.68	18	7.72	6.4	6.4	0.64	0	0	0	0
40	63.24	18	7.68	6.38	6.38	0.64	0	0	0	0
41	62.81	18	7.64	6.37	6.37	0.64	0	0	0	0
42	62.38	18	7.6	6.35	6.35	0.64	0	0	0	0
43	61.95	18	7.56	6.33	6.33	0.63	0	0	0	0
44	61.52	18	7.52	6.32	6.32	0.63	0	0	0	0
45	61.09	18	7.47	6.3	6.3	0.63	0	0	0	0
46	60.67	18	7.43	6.28	6.28	0.63	0	0	0	0
47	60.25	18	7.39	6.26	6.26	0.63	0	0	0	0
48	59.83	18	7.35	6.24	6.24	0.62	0	0	0	0
49	59.41	18	7.3	6.23	6.23	0.62	0	0	0	0
50	59	18	7.26	6.21	6.21	0.62	0	0	0	0
60	55.01	18	6.8	6.01	6.01	0.6	0	0	0	0
70	51.28	18	6.33	5.8	5.8	0.58	0	0	0	0
80	47.82	18	5.86	5.58	5.58	0.56	0	0	0	0
90	44.62	18	5.41	5.36	5.36	0.54	0	0	0	0

100	41.67	18	4.98	5.14	4.98	0.5	0	0	0	0
110	38.96	18	4.58	4.93	4.58	0.46	0	0	0	0
120	36.47	18	4.2	4.72	4.2	0.42	0	0	0	0
130	34.18	18	3.86	4.53	3.86	0.39	0	0	0	0
140	32.08	18	3.55	4.34	3.55	0.36	0	0	0	0
150	30.14	18	3.27	4.16	3.27	0.33	0	0	0	0
160	28.36	18	3.01	4	3.01	0.3	0	0	0	0
170	26.72	18	2.78	3.84	2.78	0.28	0	0	0	0
180	25.2	18	2.57	3.69	2.57	0.26	0	0	0	0
190	23.8	18	2.38	3.55	2.38	0.24	0	0	0	0
200	22.5	18	2.21	3.42	2.21	0.22	0	0	0	0
210	21.29	18	2.05	3.3	2.05	0.21	0	0	0	0
220	20.17	18	1.91	3.18	1.91	0.19	0	0	0	0
230	19.12	18	1.78	3.07	1.78	0.18	0	0	0	0
240	18.14	18	1.66	2.97	1.66	0.17	0	0	0	0
250	17.23	18	1.56	2.87	1.56	0.16	0	0	0	0
260	16.37	18	1.46	2.78	1.46	0.15	0	0	0	0
270	15.57	18	1.37	2.7	1.37	0.14	0	0	0	0
280	14.82	18	1.29	2.61	1.29	0.13	0	0	0	0
290	14.11	18	1.21	2.54	1.21	0.12	0	0	0	0
300	13.44	18	1.14	2.46	1.14	0.11	0	0	0	0
310	12.81	18	1.08	2.4	1.08	0.11	0	0	0	0
320	12.21	18	1.02	2.33	1.02	0.1	0	0	0	0
330	11.65	18	0.97	2.27	0.97	0.1	0	0	0	0
340	11.11	18	0.92	2.21	0.92	0.09	0	0	0	0
350	10.6	18	0.87	2.15	0.87	0.09	0	0	0	0
360	10.12	18	0.83	2.1	0.83	0.08	0	0	0	0
370	9.66	18	0.79	2.05	0.79	0.08	0	0	0	0
380	9.22	18	0.75	2	0.75	0.08	0	0	0	0
390	8.81	18	0.72	1.95	0.72	0.07	0	0	0	0
400	8.41	18	0.68	1.9	0.68	0.07	0	0	0	0
410	8.03	18	0.65	1.86	0.65	0.07	0	0	0	0
420	7.67	18	0.62	1.82	0.62	0.06	0	0	0	0
430	7.32	18	0.6	1.78	0.6	0.06	0	0	0	0
440	6.99	18	0.57	1.74	0.57	0.06	0	0	0	0
450	6.67	18	0.55	1.71	0.55	0.05	0	0	0	0
460	6.36	18	0.53	1.67	0.53	0.05	0	0	0	0
470	6.07	18	0.51	1.64	0.51	0.05	0	0	0	0
480	5.79	18	0.49	1.61	0.49	0.05	0	0	0	0
490	5.52	18	0.47	1.58	0.47	0.05	0	0	0	0
500	5.26	18	0.45	1.55	0.45	0.05	0	0	0	0
600	3.11	18	0.32	1.3	0.32	0.03	0	0	0	0
700	1.55	18	0.24	1.12	0.24	0.02	0	0	0	0
800	0.38	18	0.18	0.98	0.18	0.02	0	0	0	0
900	-0.54	18	0.14	0.88	0.14	0.01	0	0	0	0
1000	-1.28	18	0.12	0.79	0.12	0.01	0	0	0	0
1100	-1.89	18	0.1	0.72	0.1	0.01	0	0	0	0
1200	-2.39	18	0.08	0.66	0.08	0.01	0	0	0	0
1300	-2.82	18	0.07	0.61	0.07	0.01	0	0	0	0
1400	-3.19	18	0.06	0.57	0.06	0.01	0	0	0	0
1500	-3.51	18	0.05	0.53	0.05	0.01	0	0	0	0
1600	-3.79	18	0.05	0.5	0.05	0	0	0	0	0
1700	-4.04	18	0.04	0.47	0.04	0	0	0	0	0
1800	-4.26	18	0.04	0.44	0.04	0	0	0	0	0

1900	-4.45	18	0.03	0.42	0.03	0	0	0	0	0
2000	-4.63	18	0.03	0.4	0.03	0	0	0	0	0

Antenna System 1, Cell: BA11553E_D

Dist (ft)	Deg	Gain (dBi)	Power Density		Charted		Max Distance Calc			
			Far Field ($\mu\text{W}/\text{cm}^2$)	Near Field ($\mu\text{W}/\text{cm}^2$)	Power Density ($\mu\text{W}/\text{cm}^2$)	% of Limit	Power Density (ft)	>5% MPE	>100% MPE	>500% MPE
0.656	79.68	18	8.56	6.74	6.74	0.67	0.66	0	0	0
0.6561	79.68	18	8.56	6.74	6.74	0.67	0	0	0	0
0.7	79.66	18	8.56	6.74	6.74	0.67	0	0	0	0
0.8	79.61	18	8.56	6.74	6.74	0.67	0	0	0	0
0.9	79.56	18	8.56	6.74	6.74	0.67	0	0	0	0
1	79.51	18	8.56	6.74	6.74	0.67	0	0	0	0
2	79.03	18	8.56	6.74	6.74	0.67	0	0	0	0
3	78.54	18	8.56	6.74	6.74	0.67	0	0	0	0
4	78.06	18	8.56	6.74	6.74	0.67	0	0	0	0
5	77.57	18	8.55	6.74	6.74	0.67	0	0	0	0
6	77.08	18	8.54	6.73	6.73	0.67	0	0	0	0
7	76.6	18	8.54	6.73	6.73	0.67	0	0	0	0
8	76.11	18	8.53	6.73	6.73	0.67	0	0	0	0
9	75.63	18	8.52	6.72	6.72	0.67	0	0	0	0
10	75.15	18	8.5	6.72	6.72	0.67	0	0	0	0
11	74.67	18	8.49	6.71	6.71	0.67	0	0	0	0
12	74.18	18	8.48	6.71	6.71	0.67	0	0	0	0
13	73.7	18	8.46	6.7	6.7	0.67	0	0	0	0
14	73.22	18	8.45	6.7	6.7	0.67	0	0	0	0
15	72.74	18	8.43	6.69	6.69	0.67	0	0	0	0
16	72.27	18	8.41	6.68	6.68	0.67	0	0	0	0
17	71.79	18	8.39	6.67	6.67	0.67	0	0	0	0
18	71.31	18	8.37	6.67	6.67	0.67	0	0	0	0
19	70.84	18	8.35	6.66	6.66	0.67	0	0	0	0
20	70.36	18	8.33	6.65	6.65	0.66	0	0	0	0
21	69.89	18	8.3	6.64	6.64	0.66	0	0	0	0
22	69.42	18	8.28	6.63	6.63	0.66	0	0	0	0
23	68.95	18	8.25	6.62	6.62	0.66	0	0	0	0
24	68.48	18	8.22	6.61	6.61	0.66	0	0	0	0
25	68.02	18	8.2	6.6	6.6	0.66	0	0	0	0
26	67.55	18	8.17	6.58	6.58	0.66	0	0	0	0
27	67.09	18	8.14	6.57	6.57	0.66	0	0	0	0
28	66.63	18	8.11	6.56	6.56	0.66	0	0	0	0
29	66.17	18	8.08	6.55	6.55	0.65	0	0	0	0
30	65.71	18	8.04	6.53	6.53	0.65	0	0	0	0
31	65.26	18	8.01	6.52	6.52	0.65	0	0	0	0
32	64.8	18	7.98	6.51	6.51	0.65	0	0	0	0
33	64.35	18	7.94	6.49	6.49	0.65	0	0	0	0
34	63.9	18	7.91	6.48	6.48	0.65	0	0	0	0
35	63.45	18	7.87	6.46	6.46	0.65	0	0	0	0
36	63.01	18	7.83	6.45	6.45	0.64	0	0	0	0
37	62.56	18	7.8	6.43	6.43	0.64	0	0	0	0
38	62.12	18	7.76	6.42	6.42	0.64	0	0	0	0
39	61.68	18	7.72	6.4	6.4	0.64	0	0	0	0
40	61.24	18	7.68	6.38	6.38	0.64	0	0	0	0
41	60.81	18	7.64	6.37	6.37	0.64	0	0	0	0

42	60.38	18	7.6	6.35	6.35	0.64	0	0	0	0
43	59.95	18	7.56	6.33	6.33	0.63	0	0	0	0
44	59.52	18	7.52	6.32	6.32	0.63	0	0	0	0
45	59.09	18	7.47	6.3	6.3	0.63	0	0	0	0
46	58.67	18	7.43	6.28	6.28	0.63	0	0	0	0
47	58.25	18	7.39	6.26	6.26	0.63	0	0	0	0
48	57.83	18	7.35	6.24	6.24	0.62	0	0	0	0
49	57.41	18	7.3	6.23	6.23	0.62	0	0	0	0
50	57	18	7.26	6.21	6.21	0.62	0	0	0	0
60	53.01	18	6.8	6.01	6.01	0.6	0	0	0	0
70	49.28	18	6.33	5.8	5.8	0.58	0	0	0	0
80	45.82	18	5.86	5.58	5.58	0.56	0	0	0	0
90	42.62	18	5.41	5.36	5.36	0.54	0	0	0	0
100	39.67	18	4.98	5.14	4.98	0.5	0	0	0	0
110	36.96	18	4.58	4.93	4.58	0.46	0	0	0	0
120	34.47	18	4.2	4.72	4.2	0.42	0	0	0	0
130	32.18	18	3.86	4.53	3.86	0.39	0	0	0	0
140	30.08	18	3.55	4.34	3.55	0.36	0	0	0	0
150	28.14	18	3.27	4.16	3.27	0.33	0	0	0	0
160	26.36	18	3.01	4	3.01	0.3	0	0	0	0
170	24.72	18	2.78	3.84	2.78	0.28	0	0	0	0
180	23.2	18	2.57	3.69	2.57	0.26	0	0	0	0
190	21.8	18	2.38	3.55	2.38	0.24	0	0	0	0
200	20.5	18	2.21	3.42	2.21	0.22	0	0	0	0
210	19.29	18	2.05	3.3	2.05	0.21	0	0	0	0
220	18.17	18	1.91	3.18	1.91	0.19	0	0	0	0
230	17.12	18	1.78	3.07	1.78	0.18	0	0	0	0
240	16.14	18	1.66	2.97	1.66	0.17	0	0	0	0
250	15.23	18	1.56	2.87	1.56	0.16	0	0	0	0
260	14.37	18	1.46	2.78	1.46	0.15	0	0	0	0
270	13.57	18	1.37	2.7	1.37	0.14	0	0	0	0
280	12.82	18	1.29	2.61	1.29	0.13	0	0	0	0
290	12.11	18	1.21	2.54	1.21	0.12	0	0	0	0
300	11.44	18	1.14	2.46	1.14	0.11	0	0	0	0
310	10.81	18	1.08	2.4	1.08	0.11	0	0	0	0
320	10.21	18	1.02	2.33	1.02	0.1	0	0	0	0
330	9.65	18	0.97	2.27	0.97	0.1	0	0	0	0
340	9.11	18	0.92	2.21	0.92	0.09	0	0	0	0
350	8.6	18	0.87	2.15	0.87	0.09	0	0	0	0
360	8.12	18	0.83	2.1	0.83	0.08	0	0	0	0
370	7.66	18	0.79	2.05	0.79	0.08	0	0	0	0
380	7.22	18	0.75	2	0.75	0.08	0	0	0	0
390	6.81	18	0.72	1.95	0.72	0.07	0	0	0	0
400	6.41	18	0.68	1.9	0.68	0.07	0	0	0	0
410	6.03	18	0.65	1.86	0.65	0.07	0	0	0	0
420	5.67	18	0.62	1.82	0.62	0.06	0	0	0	0
430	5.32	18	0.6	1.78	0.6	0.06	0	0	0	0
440	4.99	18	0.57	1.74	0.57	0.06	0	0	0	0
450	4.67	18	0.55	1.71	0.55	0.05	0	0	0	0
460	4.36	18	0.53	1.67	0.53	0.05	0	0	0	0
470	4.07	18	0.51	1.64	0.51	0.05	0	0	0	0
480	3.79	18	0.49	1.61	0.49	0.05	0	0	0	0
490	3.52	18	0.47	1.58	0.47	0.05	0	0	0	0
500	3.26	18	0.45	1.55	0.45	0.05	0	0	0	0

600	1.11	18	0.32	1.3	0.32	0.03	0	0	0	0
700	-0.45	18	0.24	1.12	0.24	0.02	0	0	0	0
800	-1.62	18	0.18	0.98	0.18	0.02	0	0	0	0
900	-2.54	18	0.14	0.88	0.14	0.01	0	0	0	0
1000	-3.28	18	0.12	0.79	0.12	0.01	0	0	0	0
1100	-3.89	18	0.1	0.72	0.1	0.01	0	0	0	0
1200	-4.39	18	0.08	0.66	0.08	0.01	0	0	0	0
1300	-4.82	18	0.07	0.61	0.07	0.01	0	0	0	0
1400	-5.19	18	0.06	0.57	0.06	0.01	0	0	0	0
1500	-5.51	18	0.05	0.53	0.05	0.01	0	0	0	0
1600	-5.79	18	0.05	0.5	0.05	0	0	0	0	0
1700	-6.04	18	0.04	0.47	0.04	0	0	0	0	0
1800	-6.26	18	0.04	0.44	0.04	0	0	0	0	0
1900	-6.45	18	0.03	0.42	0.03	0	0	0	0	0
2000	-6.63	18	0.03	0.4	0.03	0	0	0	0	0

GSM Cell: BA11553E_A		Power Density		@ Horz Dist
Maximum Power Density:	6.743 $\mu\text{W}/\text{cm}^2$	0.674 % of limit	0.656 ft (0.2 m)	
148.3108 times lower than the MPE limit for an uncontrolled environment				
Power:	130.995 Watts (ERP), 214.832 Watts (EIRP)			
UMTS Cell: UBA11553E_A		Power Density		@ Horz Dist
Maximum Power Density:	0 $\mu\text{W}/\text{cm}^2$	0 % of limit	0 ft (0 m)	
148.3108 times lower than the MPE limit for an uncontrolled environment				
Power:	0 Watts (ERP), 0 Watts (EIRP)			

GSM Cell: BA11553E_B		Power Density		@ Horz Dist
Maximum Power Density:	6.743 $\mu\text{W}/\text{cm}^2$	0.674 % of limit	0.656 ft (0.2 m)	
148.3108 times lower than the MPE limit for an uncontrolled environment				
Power:	130.995 Watts (ERP), 214.832 Watts (EIRP)			
UMTS Cell: UBA11553E_B		Power Density		@ Horz Dist
Maximum Power Density:	0 $\mu\text{W}/\text{cm}^2$	0 % of limit	0 ft (0 m)	
148.3108 times lower than the MPE limit for an uncontrolled environment				
Power:	0 Watts (ERP), 0 Watts (EIRP)			

GSM Cell: BA11553E_C		Power Density		@ Horz Dist
Maximum Power Density:	6.743 $\mu\text{W}/\text{cm}^2$	0.674 % of limit	0.656 ft (0.2 m)	
148.3108 times lower than the MPE limit for an uncontrolled environment				
Power:	130.995 Watts (ERP), 214.832 Watts (EIRP)			
UMTS Cell: UBA11553E_C		Power Density		@ Horz Dist
Maximum Power Density:	0 $\mu\text{W}/\text{cm}^2$	0 % of limit	0 ft (0 m)	
148.3108 times lower than the MPE limit for an uncontrolled environment				
Power:	0 Watts (ERP), 0 Watts (EIRP)			

GSM Cell: BA11553E_D		Power Density		@ Horz Dist
Maximum Power Density:	6.743 $\mu\text{W}/\text{cm}^2$	0.674 % of limit	0.656 ft (0.2 m)	
148.3108 times lower than the MPE limit for an uncontrolled environment				
Power:	130.995 Watts (ERP), 214.832 Watts (EIRP)			

26h

UMTS Cell: UBA11553E D	Power Density		@ Horz Dist
Maximum Power Density:	0 $\mu\text{W}/\text{cm}^2$	0 % of limit	0 ft (0 m)
148.3108 times lower than the MPE limit for an uncontrolled environment			
Power:	0 Watts (ERP), 0 Watts (EIRP)		

RF Field Strength Calculation Methodology

A generally accepted method is used to calculate the expected RF field strength. The method uses the FCC's recommended equation (*Reference Federal Communication Commission Office of Engineering Technology Bulletin 65*) which predicts field strength on a worst case basis by doubling the predicted field strength.

The power density at any distance from an isotropic antenna is simply the transmitter power P_t divided by the surface area of a sphere ($4 \times \pi \times R^2$) at that distance. The surface area of the sphere increases by the square of the radius, therefore the power density, P_d (watts/square meter), decreases by the square of the radius. For a directional antenna with a gain G (*max radiation intensity of directional antenna / radiation intensity of isotropic antenna with same power input*), the power density at a distant point is the gain of the antenna multiplied by the power density of an isotropic radiator, $P_d = (P_t \times G_t) / (4 \times \pi \times R^2)$. This is the basis of the far-field and near-field power density equations used in this report.

The far-field power density equation used here is:

$$S = \frac{2.56 \times N \times 1.64 \times \text{ERP}_{\phi}/\text{chan} \times 10^6}{4 \times \pi \times R^2}$$

Where:

S = power density

2.56 = reflection coefficient

N = number of RF channels

1.64 x ERP_φ/chan = EIRP per channel at the angle for the calculation point

R = horizontal distance to the center of radiation

The far-field power density is then adjusted for any miscellaneous attenuation specified by the engineer.

The near-field power density equation used is:

$$S = \frac{N \times P_{IN}/\text{chan} \times 10^6}{2 \times \pi \times R \times h \times \omega/360}$$

Where:

S = power density

N = number of RF channels

$P_{IN}/chan = \text{Max power input to the antenna per channel} = \text{Max_ERP}_{ch} / 10^{(\text{Max_Gain} / 10)}$

R = horizontal distance to the center of radiation

h = vertical aperture of the antenna

$\alpha/360 = 3 \text{ dB horizontal beamwidth of the antenna pattern divided by } 360$

If the antenna aperture is less than 6.56 feet, the near-field power density is multiplied by the aperture height and divided by 6.56. The near-field power density is then multiplied by the cosine of the angle from the horizon to the calculation point. Finally, the power density is adjusted for any miscellaneous attenuation.

Whether the near-field or far-field equation is used depends on the distance formula $d = 1.28 \times (1.64 \times \text{Antenna Gain}) \times \text{Height of Antenna Aperture} \times (3\text{dB Beamwidth}/360)$, **note: $EIRP = 1.64 \times ERP$** . If the distance from the face of the antenna is greater than **d** then the lesser result of the near-field and far-field equations is used. If the vertical distance from calculation point to bottom (or top) of the antenna is greater than 0.25 times the aperture height, then the lesser of the near-field / far-field equations is used. Otherwise the near-field value is used. **Note: All lengths are converted from feet to centimeters during calculations.**

Final analysis for Antenna System 1, Cell BA11553E A

Using **2** channels and a maximum effective radiated power (ERP) of **165.26 Watts** (52.18 dBm), and a downtilt of **2°**, the calculated power density for this site at the nearest controlled access point of **1 ft** (0.3 m) is **6.74 $\mu\text{W}/\text{cm}^2$** . The calculated power density for the site at the nearest uncontrolled access point of **1 ft** (0.3 m) is **6.74 $\mu\text{W}/\text{cm}^2$** . Using this result, the maximum calculated field strength at the nearest accessible point is **0.67%** of the applicable public limit for uncontrolled exposure.

- The 5% FCC general population/uncontrolled exposure minimum distance is **0 ft** (0 m).
- The 100% FCC general population/uncontrolled exposure minimum distance is **0 ft** (0 m).
- The 100% FCC occupational/controlled exposure minimum distance is **0 ft** (0 m).

Final analysis for Antenna System 1, Cell BA11553E B

Using **2** channels and a maximum effective radiated power (ERP) of **165.26 Watts** (52.18 dBm), and a downtilt of **7°**, the calculated power density for this site at the nearest controlled access point of **1 ft** (0.3 m) is **6.74 $\mu\text{W}/\text{cm}^2$** . The calculated power density for the site at the nearest uncontrolled access point of **1 ft** (0.3 m) is **6.74 $\mu\text{W}/\text{cm}^2$** . Using this result, the maximum calculated field strength at the nearest accessible point is **0.67%** of the applicable public limit for uncontrolled exposure.

- The 5% FCC general population/uncontrolled exposure minimum distance is **0 ft** (0 m).

- The 100% FCC general population/uncontrolled exposure minimum distance is **0 ft** (0 m).
- The 100% FCC occupational/controlled exposure minimum distance is **0 ft** (0 m).

Final analysis for Antenna System 1, Cell BA11553E C

Using **2** channels and a maximum effective radiated power (ERP) of **165.26 Watts** (52.18 dBm), and a downtilt of **8°**, the calculated power density for this site at the nearest controlled access point of **1 ft** (0.3 m) is **6.74 $\mu\text{W}/\text{cm}^2$** . The calculated power density for the site at the nearest uncontrolled access point of **1 ft** (0.3 m) is **6.74 $\mu\text{W}/\text{cm}^2$** . Using this result, the maximum calculated field strength at the nearest accessible point is **0.67%** of the applicable public limit for uncontrolled exposure.

- The 5% FCC general population/uncontrolled exposure minimum distance is **0 ft** (0 m).
- The 100% FCC general population/uncontrolled exposure minimum distance is **0 ft** (0 m).
- The 100% FCC occupational/controlled exposure minimum distance is **0 ft** (0 m).

Final analysis for Antenna System 1, Cell BA11553E D

Using **2** channels and a maximum effective radiated power (ERP) of **165.26 Watts** (52.18 dBm), and a downtilt of **10°**, the calculated power density for this site at the nearest controlled access point of **1 ft** (0.3 m) is **6.74 $\mu\text{W}/\text{cm}^2$** . The calculated power density for the site at the nearest uncontrolled access point of **1 ft** (0.3 m) is **6.74 $\mu\text{W}/\text{cm}^2$** . Using this result, the maximum calculated field strength at the nearest accessible point is **0.67%** of the applicable public limit for uncontrolled exposure.

- The 5% FCC general population/uncontrolled exposure minimum distance is **0 ft** (0 m).
- The 100% FCC general population/uncontrolled exposure minimum distance is **0 ft** (0 m).
- The 100% FCC occupational/controlled exposure minimum distance is **0 ft** (0 m).

See Table 1 for the FCC's guidelines on Maximum Permissible Exposure (MPE). Note that the RF range referenced for this analysis is the range of 1500 – 100,000 MHz shown in Table 1, which is included in Appendix A.

Signage Guidelines

Due to the type of access for this site, the following signage is required:



Posted at or near the site entrance or rooftop access

Exposure Environments

The FCC guidelines incorporate two separate tiers of exposure limits that are dependant on the situation in which the exposure takes place and/or the status of the individuals who are subject to exposure. The decision as to which tier applies in a given situation should be based on the application of the following definitions.

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/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 always fall under this category when exposure is not employment-related.

For purposes of applying these definitions, awareness of the potential for RF exposure in a workplace or similar environment can be provided through specific training as part of a RF safety program. Warning signs and labels can also be used to establish such awareness as long as they provide information, in a prominent manner, on risk of potential exposure and instructions on methods to minimize such exposure risk.

For example, a sign warning of RF exposure risk and indicating that individuals should not remain in the area for more than a certain period of time could be acceptable.

Another important point to remember concerning the FCC's exposure guidelines is that they constitute **exposure** limits (not **emission** limits), and they are relevant only to locations that are **accessible** to workers or members of the public. Such access can be restricted or controlled by appropriate means such as the use of fences, warning signs, etc., as noted above. For the case of occupational/controlled exposure, procedures can be instituted for working in the vicinity of RF sources that will prevent exposures in excess of the guidelines. An example of such procedures would be restricting the time an individual could be near an RF source or requiring that work on or near such sources be performed while the transmitter is turned off or while power is appropriately reduced.

Signed: _____

Date: *Thursday, July 22, 2010*

Appendix A

Term Definitions

GSM – Global System for Mobile communications is the most popular standard for mobile phones in the world. Its promoter, the GSM Association, estimates that 82% of the global mobile market uses the standard. GSM is used by over 2 billion people across more than 212 countries and territories. Its ubiquity makes international roaming very common between mobile phone operators, enabling subscribers to use their phones in many parts of the world. GSM differs from its predecessors in that both signaling and speech channels are digital call quality, and so is considered a second generation (2G) mobile phone system. This has also meant that data communication were built into the system using the 3rd Generation Partnership Project (3GPP).

UMTS – Universal Mobile Telecommunications System is one of the third-generation (3G) cell phone technologies. Currently, the most common form of UMTS uses W-CDMA as the underlying air interface. It is standardized by the 3GPP, and is the European answer to the ITU IMT-2000 requirements for 3G cellular radio systems.

Isotropic Antenna – a theoretical point source of waves which exhibits the same magnitude or properties when measured in all directions. It has no preferred direction of radiation. It radiates uniformly in all directions over a sphere centred on the source. It is a reference radiator with which other sources are compared.

Exposure – Exposure occurs whenever and wherever a person is subjected to electric, magnetic or electromagnetic fields other than those originating from physiological processes in the body and other natural phenomena.

Exposure, partial body - Partial-body exposure results when RF fields are substantially non-uniform over the body. Fields that are non-uniform over volumes

comparable to the human body may occur due to highly directional sources, standing-waves, re-radiating sources or in the near field.

General population/uncontrolled exposure – For FCC purposes, applies to human exposure RF fields when the general public is 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 always fall under this category when exposure is not employment-related.

Maximum permissible exposure (MPE) – The rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with an acceptable safety factor.

Occupational/controlled exposure – For FCC purposes, applies to human exposure to RF fields when 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 definition above), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his/her exposure by leaving the area or by some other appropriate means.

Appendix B

Collocation Sites

Special rules apply at sites with multiple transmitters on buildings. Regardless of the categorical exemption rules detailed about for single carriers, if a T-Mobile, USA site's emissions:

1. are more than 5% above the emissions limits in an "accessible area;" and
2. contribute at least 5% of all the emissions at any site which together result in an overall effect of more than 100% of the emission limits then we, and each carrier meeting this definition, are individually and collectively responsible for compliance. The FCC expects each carrier to make a good faith effort to consider emissions from other carriers and make the determination.

That said, the FCC Office of Engineering and Technology has supported the following exception:

- Within a controlled environment at a multi-transmitter site, if a carrier can physically elevate its antenna so that, as a practical matter, the volume of space where the RF field exceeds 5 percent of the controlled environments limits in Table of Section 1.1310 is 2 meters or more above any rooftop walkways (i.e., the volume where the fields exceed 5 percent of the limit are practically inaccessible), that carriers would be relieved of any responsibility for ensuring compliance of all transmitters at the site. This assumes, of course, that the carrier does not exceed 5 percent of the general public exposure limit in any uncontrolled areas.

Regulatory Compliance recommends conducting the routine environmental analysis whenever collocating on a rooftop. Although the need for analysis usually arises when we are first installing equipment or upgrading a site, we are responsible for total emissions at the site even when a new carrier collocates at our existing site. If after the analysis, the total emissions exceed 100% of the limit, all carriers on the site should be contacted to work out a joint solution to the problem [however, if the last carrier pushes the site over the limit, there is support in the rules that the last carrier should bear the burden of addressing compliance].

Professionally Managed Sites

As noted above, the carrier is always responsible for the RF compliance of its equipment. The FCC OET, however, does realize that some site managers undertake the responsibility for RF compliance (and that carriers likewise may rely on consultants to document compliance. The OET has stated that:

- As with other licensee responsibilities, while ultimate responsibility for compliance rests with the licensee, compliance with the RF exposure regulations can be delegated to specialized consultants, site managers, or specific individuals within a company, and, as long as the delegation itself is reasonable a licensee may certify compliance on the basis of the delegate's report. In either case, a copy of the site manager or RF consultant's report should be maintained in the site file.

Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

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

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	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	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

NOTE 1: **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/she is made aware of the potential for exposure.

NOTE 2: **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 can not exercise control over their exposure.

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Acoustic Dispersion, Heat Exchanger

The cabinet noise dispersion for an RBS 2106 with Heat Exchanger Climate Unit is shown in the two figures below. The figures show the noise dispersion generated by a free-standing cabinet, and by a cabinet mounted against a wall.

Note: The acoustic noise dispersion values for a free-standing cabinet and a cabinet installed against a wall were tested according to the ISO 9614-2 standard. Deviations from these values can occur depending on the materials used in the environment where the cabinet is installed. Objects near the cabinet can reflect or absorb sound and thus affect acoustic dispersion.

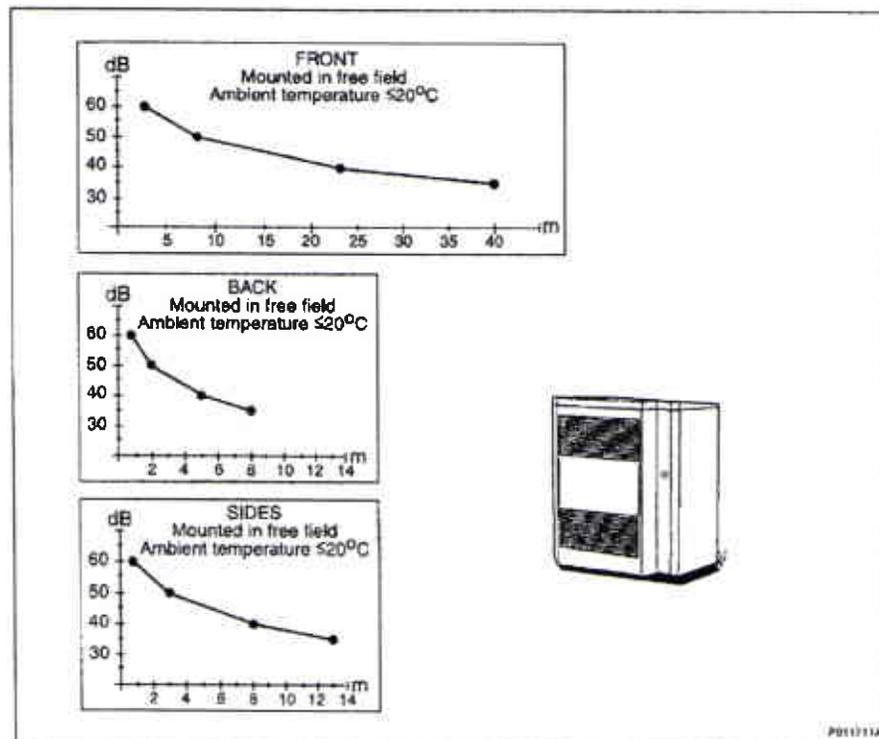


Figure 5 Acoustic Dispersion for a Free-standing RBS 2106 with Heat Exchanger Climate Unit

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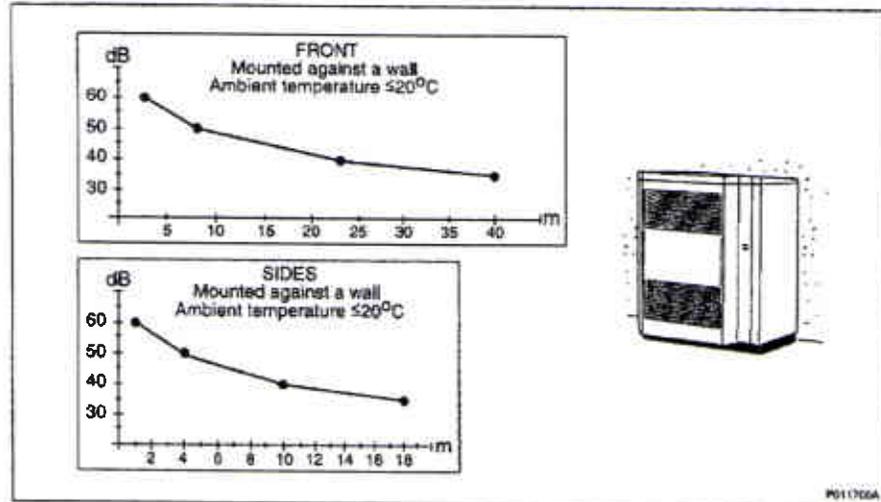


Figure 6 Acoustic Dispersion for a Wall-mounted RBS 2106 with Heat Exchanger Climate Unit

Acoustic Dispersion, Combined Climate Unit

The cabinet noise dispersion for an RBS 2106 with Combined Climate Unit is shown in the two figures below. The figures show the noise dispersion generated by a free-standing cabinet and by a cabinet mounted against a wall.

Note: The acoustic noise dispersion values for a free-standing cabinet and a cabinet installed against a wall were tested according to the ISO 9614-2 standard. Deviations from these values can occur depending on the materials used in the environment where the cabinet is installed. Objects near the cabinet can reflect or absorb sound and thus affect acoustic dispersion.

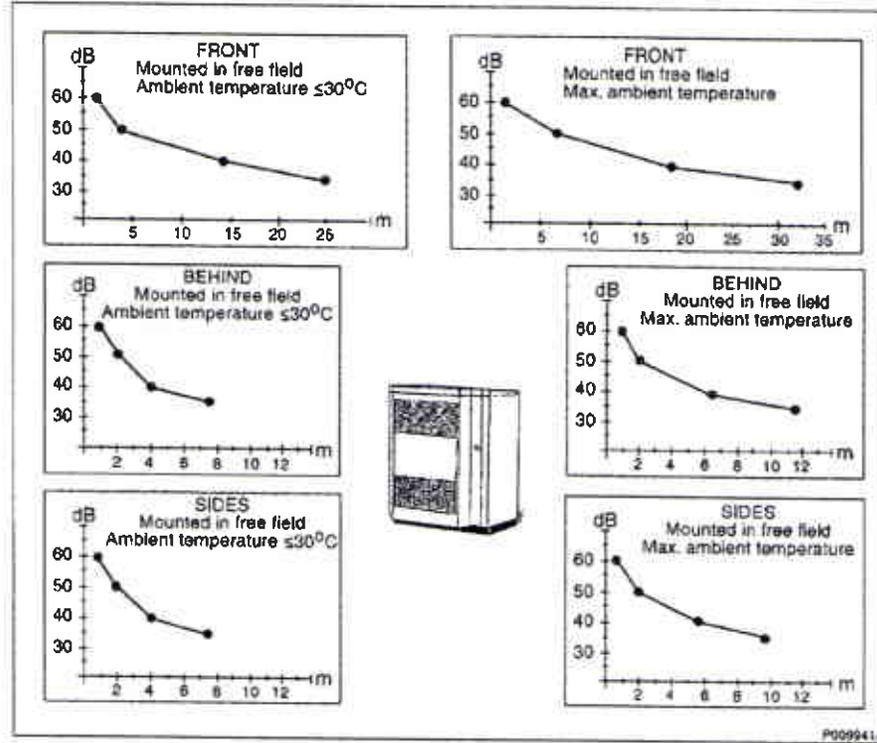


Figure 7 Acoustic Dispersion for a Free-standing RBS 2106 with Combined Climate Unit

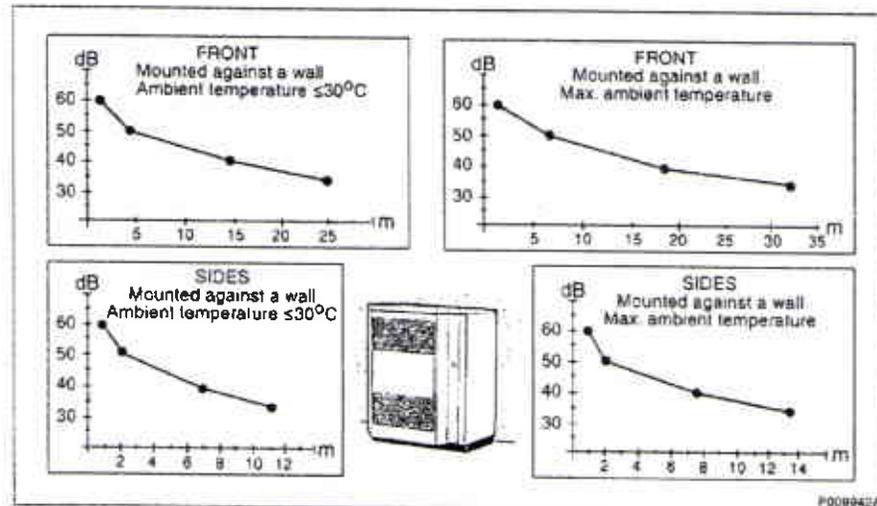


Figure 8 Acoustic Dispersion for a Wall-mounted RBS 2106 with Combined Climate Unit

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STAFF REPORT

TO: DESIGN REVIEW COMMITTEE
FROM: Anjana Mepani, Associate Planner
DATE: August 11, 2010
SUBJECT: Design review of a proposed new co-located wireless telecommunications facility on an existing PG&E tower at 5000 Hiller Lane - Concord Korean Baptist Church site (Applicant: T-Mobile/SiteCom, Inc. - Matt Veazey; UP 08-16, DR 08-26)

PROJECT DESCRIPTION:

T-Mobile is proposing to install a new co-located wireless telecommunications facility on an existing PG&E tower at 5000 Hiller Lane (Concord Korean Baptist Church site). The proposed project consists of adding a 12' lattice structure, with 8 antennas, at the top of the tower. T-Mobile will be leasing a 9'x22' area within the tower footprint for an equipment enclosure. The proposed project is located in a residential zoning district, which requires a Use Permit and Design Review.

In detail, the applicant is proposing to install the new telecommunications facility by adding a 12-foot lattice top hat structure and co-locating eight antennas at the top of an existing 121.3' PG&E tower. The overall height of the tower will increase approximately four feet in height with the top hat and antennas. The applicant is also proposing to place a fenced equipment enclosure at the base of the tower. As stated in the applicant's project support statement (see attached), T-Mobile is seeking to improve and expand wireless coverage to the residences and businesses in Martinez. The proposed new wireless telecommunications facility will handle increased traffic on their network and provide quality service to their customers.

SITE AND CONTEXT DESCRIPTION:

The Concord Korean Baptist Church property with the PG&E utility tower and easement is located at 5000 Hiller Lane, a private road off of Arnold Drive. The subject property has a lot size of 2.69 acres (117,175.5 sq. ft.), which is larger than most of the surrounding lots. The subject lot currently contains four church related buildings, a playground, basketball court, parking, and the PG&E tower. The PG&E 100-foot right-of-way easement traverses the lot along the rear of the property with the tower located in the northern portion. Further, Sprint/Nextel currently operates a wireless telecommunications facility at the PG&E tower, which consists of antennas on the tower and an equipment shelter at the base of the tower.

The subject property is located in a residential zoning district, where pursuant to

Martinez Municipal Code Chapter 22.39, "Wireless Telecommunications Facilities," a Use Permit and Design Review is required for any wireless facility installations. To the north of the subject property are single-family residences and a large vacant lot. On the east and west are both multi-family and single-family residences. The Church of Christ is located adjacent to and south of the subject property.

BACKGROUND:

The applicant initially submitted for a Use Permit and Design Review in 2008 for the proposed project. In December 2008, an incomplete letter from the City was sent to the applicant with a list of items that need to be addressed and provided for completeness of the proposed project. After this initial incomplete letter, there was minimal activity on the project by the applicant for over a year. During this time, T-Mobile also changed consultants and contacts for the project. In December 2009, the applicant requested that the project file remain active as T-Mobile wanted to continue to pursue the proposed project.

In March 2010, the applicant submitted the requested information for completeness, which included the current project proposal and project plans, photo simulations, coverage maps, radio frequency radiation report, written project statements, and letters of authorization from PG&E and Concord Korean Baptist Church. Based on Planning Staff's request, the applicant attended a study session with the Planning Commission on May 11, 2010. At the study session, the proposed project was well received by the Planning Commission, see attached Draft Planning Commission Study Session Minutes. The Planning Commission provided preliminary comments to the applicant on the project and requested that some project information be updated, which has been done. Ultimately it will be the Planning Commission's determination as to whether to approve or deny the entitlements for the project as proposed by the applicant.

DISCUSSION:

The overall height of the existing PG&E tower is 121.3 feet high, with existing antennas that belong to Sprint/Nextel located at 46 feet high. The applicant is proposing to add a 12-foot lattice top hat structure to the existing tower, which partially sits within the existing tower, thus bringing the overall tower height to 123.3 feet. The overall height of the tower will increase by two feet with the top hat. A top hat is an industry term that refers to a tower extension structure to separate cell antennas from power lines. It should be noted that utility poles and towers are not subject to height limits (Martinez Municipal Code Chapter 22.34.170B). Thus, the top hat will be designed to look like an extension of the PG&E tower so that it will blend in and have minimal visual impacts. Further, the eight antennas proposed to be placed on the top hat are approximately 55.9" in height, 13.3" in width, and 3.15" in depth. The antennas will be located on four sectors around the top hat, with two antennas per sector mounted on H-frame brackets, with the top of the antennas at 125.7 feet in height. The top of the antennas will extend approximately four feet above the overall height of the tower. The lattice top hat, antennas and brackets shall be painted to match the existing PG&E tower.

According to the applicant, the antennas are proposed to be mounted at approximately 123 feet above ground level to provide necessary coverage to connect the proposed

site to existing T-Mobile facilities and to provide in-building coverage to customers currently without service. The applicant stated that lower antennas "would render the proposed project unfeasible, since the antennas would have to go below the antennas already installed by Sprint/Nextel" and below the existing power lines. The applicant believes that being below the other carrier's antennas would dramatically reduce the coverage area and severely limit the way in which the proposed site would interconnect to existing T-Mobile facilities.

The proposed equipment enclosure will be located within the footprint of the tower, next to an existing equipment shelter belonging to Sprint/Nextel and will not be visible from Hiller Lane. At grade, the equipment within the enclosure will not be visible above the dark colored 7-foot wooden fence line. Although there will be a wooden fence and vegetation around the enclosure, some of the equipment may be visible when looking down on the enclosure and tower footprint from residences located above the subject site. Further, the antennas on the top hat will be visible to the surrounding area in general. The applicant has provided photo simulations with various views of the lattice top hat, antennas, and equipment enclosure (see attached Photo Simulations).

RECOMMENDATION:

In conclusion, staff analysis finds that:

- **Preservation of Views:** Given that the top hat will be designed to resemble the existing PG&E tower; the top hat, antennas, and brackets will be painted to match the existing tower; the overall height of the tower will only increase approximately four feet; and the equipment enclosure will be located at the base and within the footprint of the tower, the proposed project will not result in any significant view loss. The applicant has provided the attached photo simulations to illustrate the proposed project.
- **Colors and Materials:** The applicant will paint the top hat, antennas, and brackets to match the existing PG&E tower. The wooden fence surrounding the equipment enclosure will be of a dark color to blend in with the base and footprint of the utility tower.
- **Consistency with Location:** The proposed project would be a co-located facility, which is promoted by the "Wireless Telecommunications Facilities" ordinance (MMC Chapter 22.39) to reduce the amount of wireless facility sites. Also, in order to be located in a residential area, the applicant has demonstrated that no other feasible alternative site exists.
- **Consistency with General Design Review Guidelines:** The proposed project is consistent with the general design review guidelines since the project is designed to blend in and match the existing surroundings without blocking views.

Based on the above, staff recommends that the Design Review Committee recommend approval of the project to the Planning Commission and provide staff with any necessary conditions of approval.

ATTACHMENTS:

Site Context Map
Draft Planning Commission Study Session Minutes - May 11, 2010
Applicant's Letter dated 7/22/10
Project Support Statement from Applicant
Photo Simulations and Pictures
Updated Coverage Maps

ENCLOSURE:

Site Plan, Survey, Equipment Layout Plan, Elevations, Antenna Detail

STAFF REPORT REVIEWED BY:

Terry Blount, AICP, Planning Manager

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