



## 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 (Single Family Residential: 10,000 sq. ft. minimum lot area)

**ENVIRONMENTAL:** Staff has yet to determine the level of environmental review that will be required for this project. All environmental documentation will be presented to the Planning Commission for either adoption or denial at a subsequent Commission hearing. Copies of the Initial Study document, if one is to be required for this project, will be made available to the general public at a date to be determined, at City Hall.

**PROPOSAL:** 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.

### RECOMMENDATION

Review proposal, accept public comment, and provide input and direction to staff and the applicant on the proposal. The purpose of the study session is to allow for preliminary project review. No Planning Commission action is to be taken at this time.

Should the Commission find that it can support such a project, the applicant will be instructed on the formal application process.

### **SITE, CONTEXT, PROJECT DESCRIPTION**

The Concord Korean Baptist Church property with the Pacific Gas and Electric Company (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.

The applicant is proposing to install a new telecommunications facility by adding a 12-foot lattice top hat structure and co-locating eight antennas to the top of an existing PG&E tower. The applicant is also proposing to place an equipment enclosure at the base of the tower. T-Mobile will be leasing a 9'x22' area within the towers footprint. 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.

The wireless facility will operate unmanned and the equipment will be serviced every 4-6 weeks. Further, noise from the equipment must meet the noise requirements set in the Martinez Municipal Code Chapter 8.34.020 and shall not exceed 60dBA for exterior noise level. In addition, the attached Radio Frequency Radiation Report demonstrates that the proposed wireless facility, along with the operation of the other wireless carrier, will be 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.

### **DISCUSSION**

#### **Use Permit**

As mentioned above, a Use Permit is required to permit a wireless telecommunications 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 telecommunications 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 successful and abandoned from further consideration for various reasons (see attached Project Support Statement). 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.

### **Design Review**

The existing PG&E tower is 111.3 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, thus bringing the overall tower height to 123.3 feet. 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. 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 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 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." 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 7-foot wooden fence line. However, the equipment may be visible 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). Additionally, should the applicant decide to move forward, the project will be reviewed by the Design Review Committee, prior to returning to the Planning

Commission.

**ATTACHMENTS**

Site Context Map

Written Statement from Applicant

Project Support Statement from Applicant

Letter of Authorization from Concord Korean Baptist Church

Letter of Authorization from PG&E

Photo Simulations

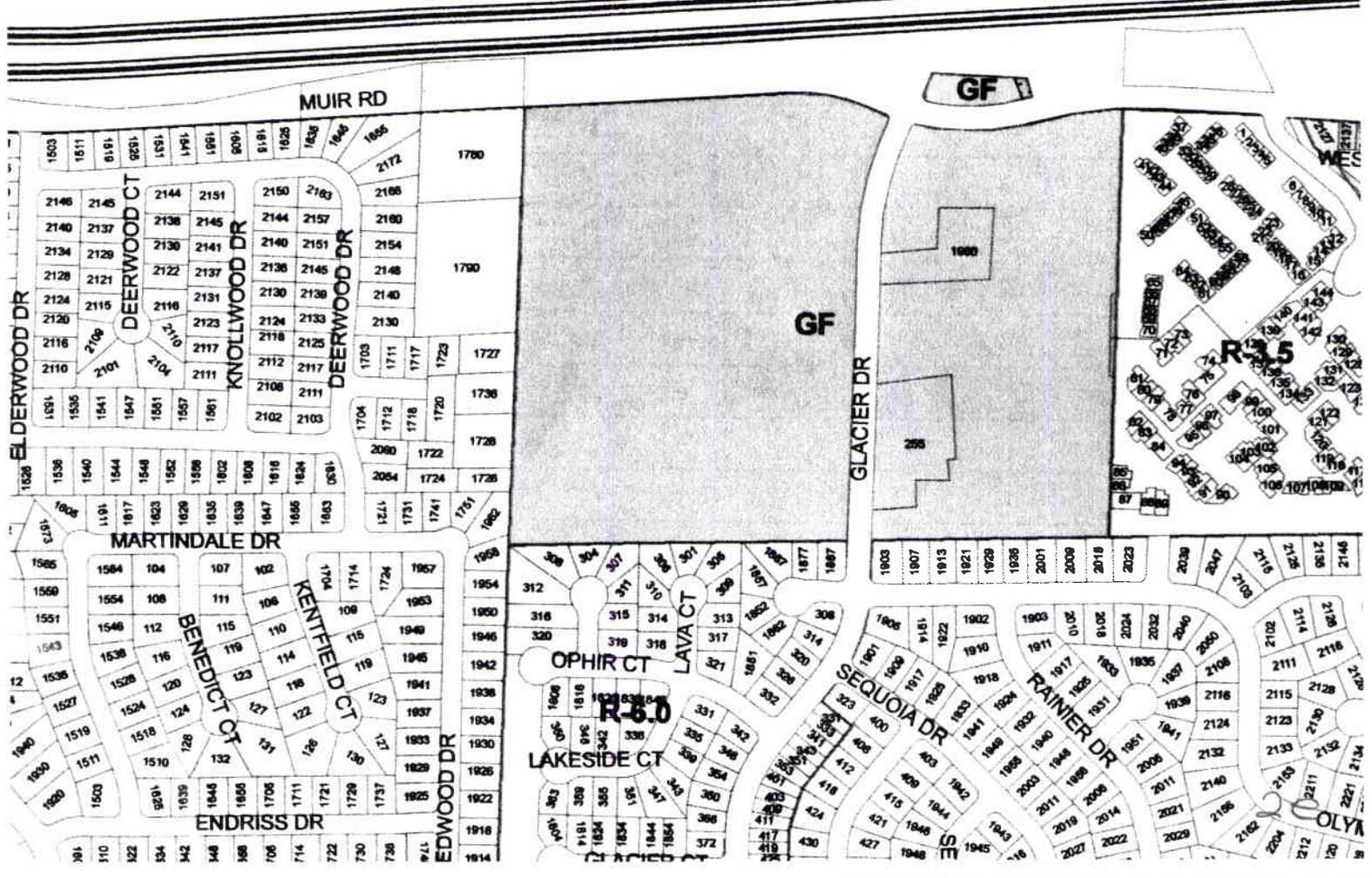
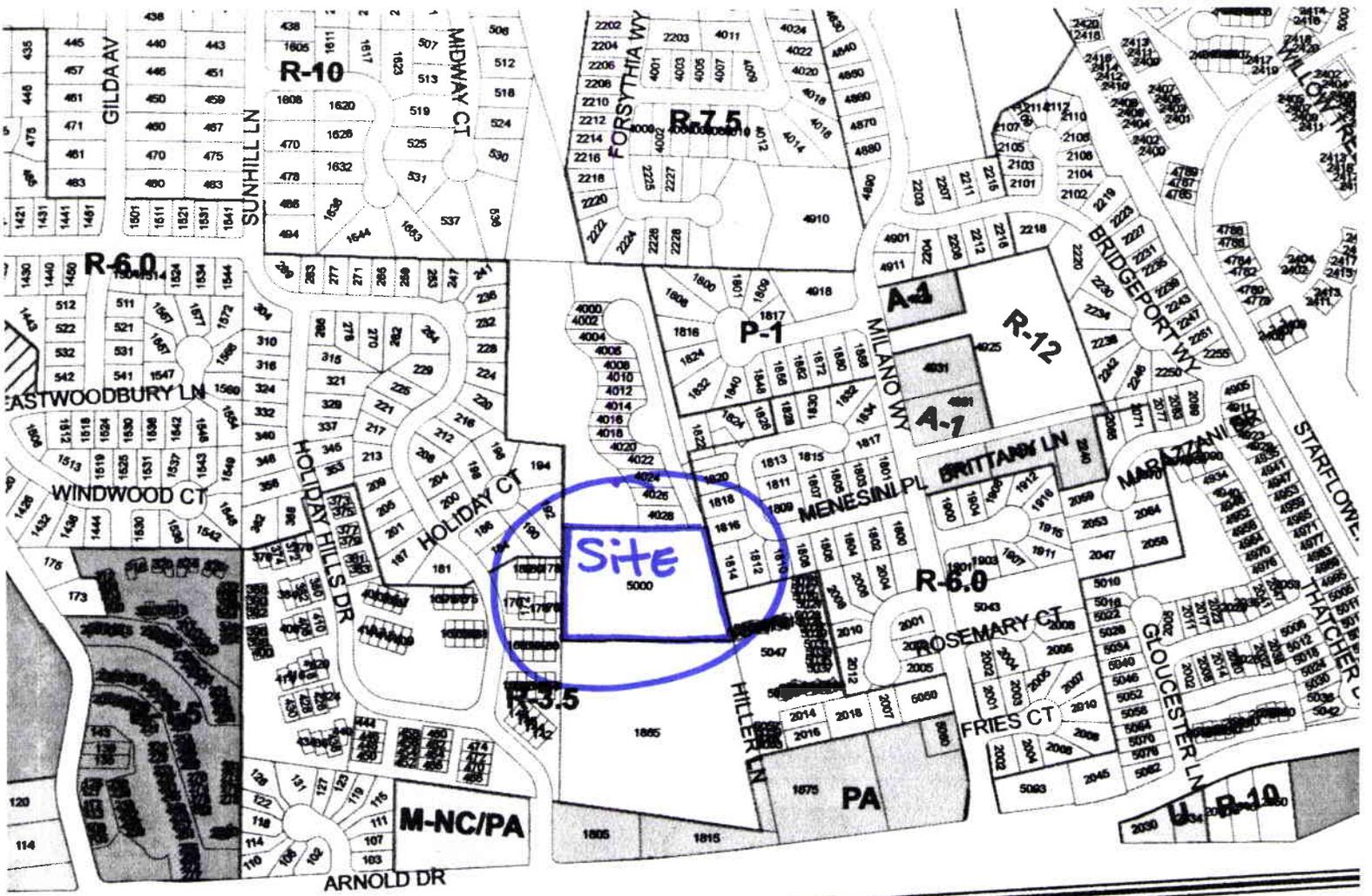
Coverage Maps

Radio Frequency Radiation Report

**EXHIBITS**

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

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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

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.

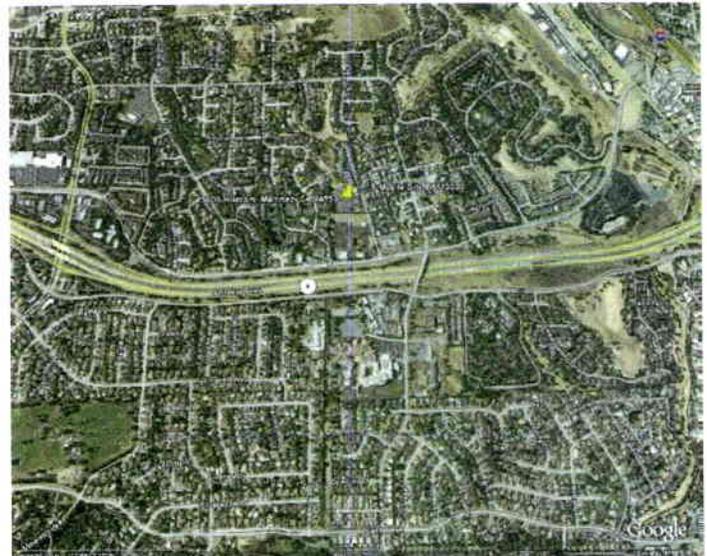
This unmanned facility will provide service to area travelers, residents and businesses 24 hours a day, 7 days a week. This site will also serve as a back-up to the existing landline service in the area and will provide improved mobile communications, essential to modern day commerce and recreation.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

### COVERAGE AREA

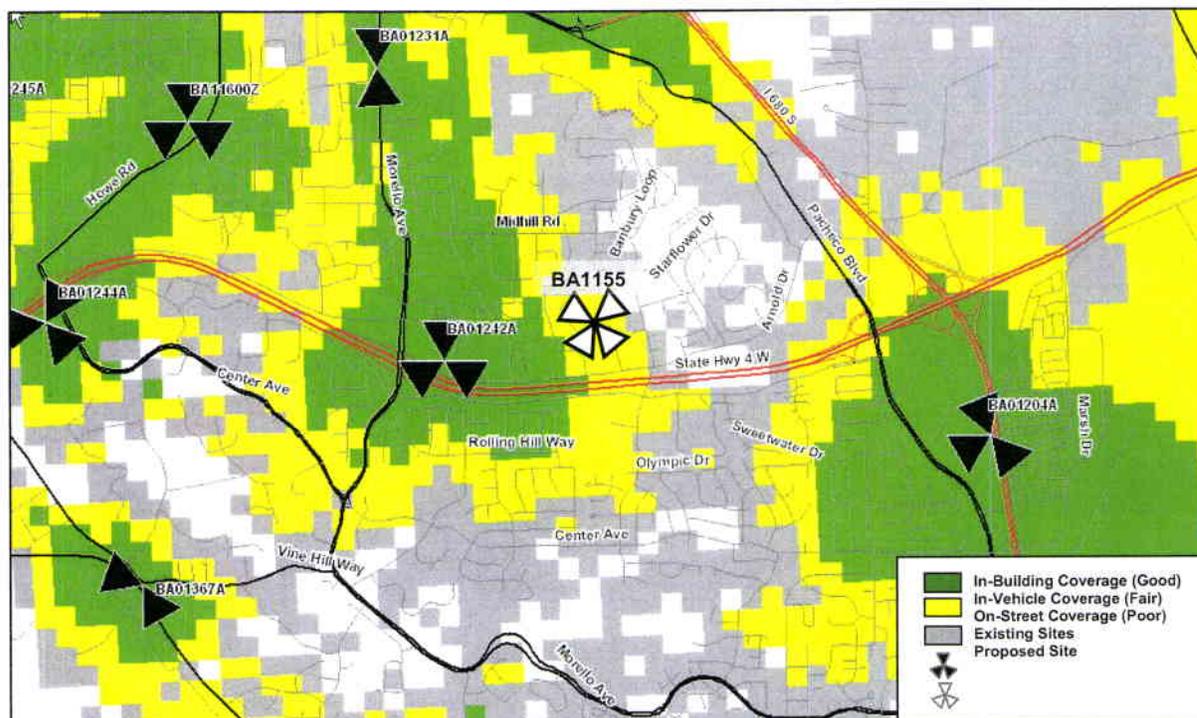
This site has been designed to cover and enhance safety in the following areas:

- 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.



## 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

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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.

## 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**

*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

RECEIVED  
DEC - 5 2008  
COMMUNITY DEV. DEPT.

**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:

925-228-3747

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

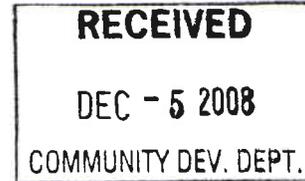
US Mail :  
Mail Code B26L  
Pacific Gas and Electric Company  
PO Box 770000  
San Francisco, CA 94177-0001

Overnight Mail :  
Mail Code B26L  
Pacific Gas and Electric Company  
77 Beale Street, 26th 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

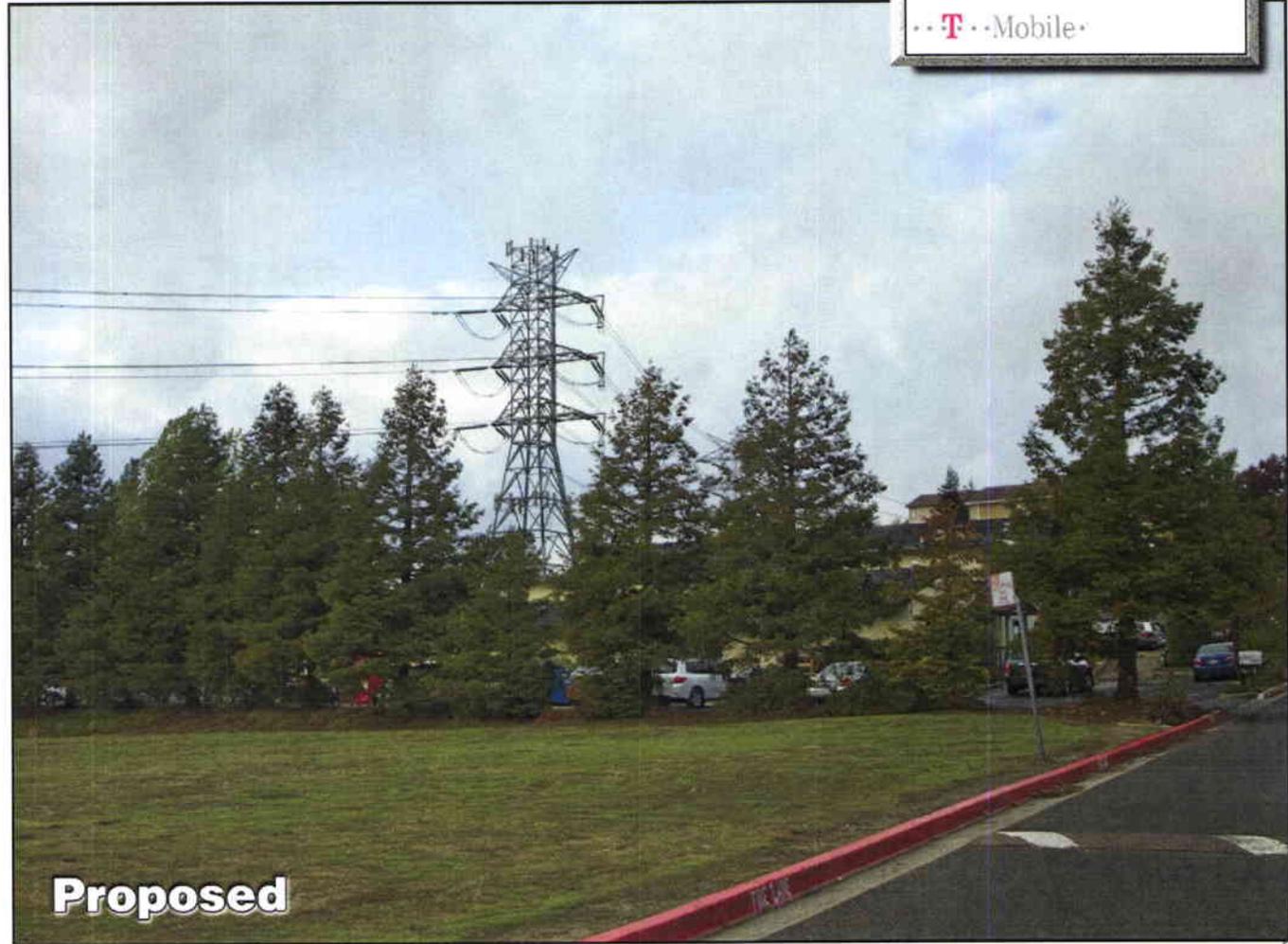
Rev 0 5.30.08

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



**Existing**

**Korean Baptist Church**  
5000 Hiller Lane  
Martinez, CA 94553  
BA11553  
...T...Mobile...



**Proposed**

208

Existing

RECEIVED

MAY - 4 2010

COMMUNITY DEV. DEPT.



Mobile

BA11553

Korean Baptist Church

5000 Hiller Lane  
Martinez, CA 94553

Proposed



proposed T-Mobile  
equipment area

Prepared by: **WW** 02.26.2010  
WW Design & Consulting, Inc.  
1654 Candellero Court  
Walnut Creek, CA 94598  
info@photosims.com

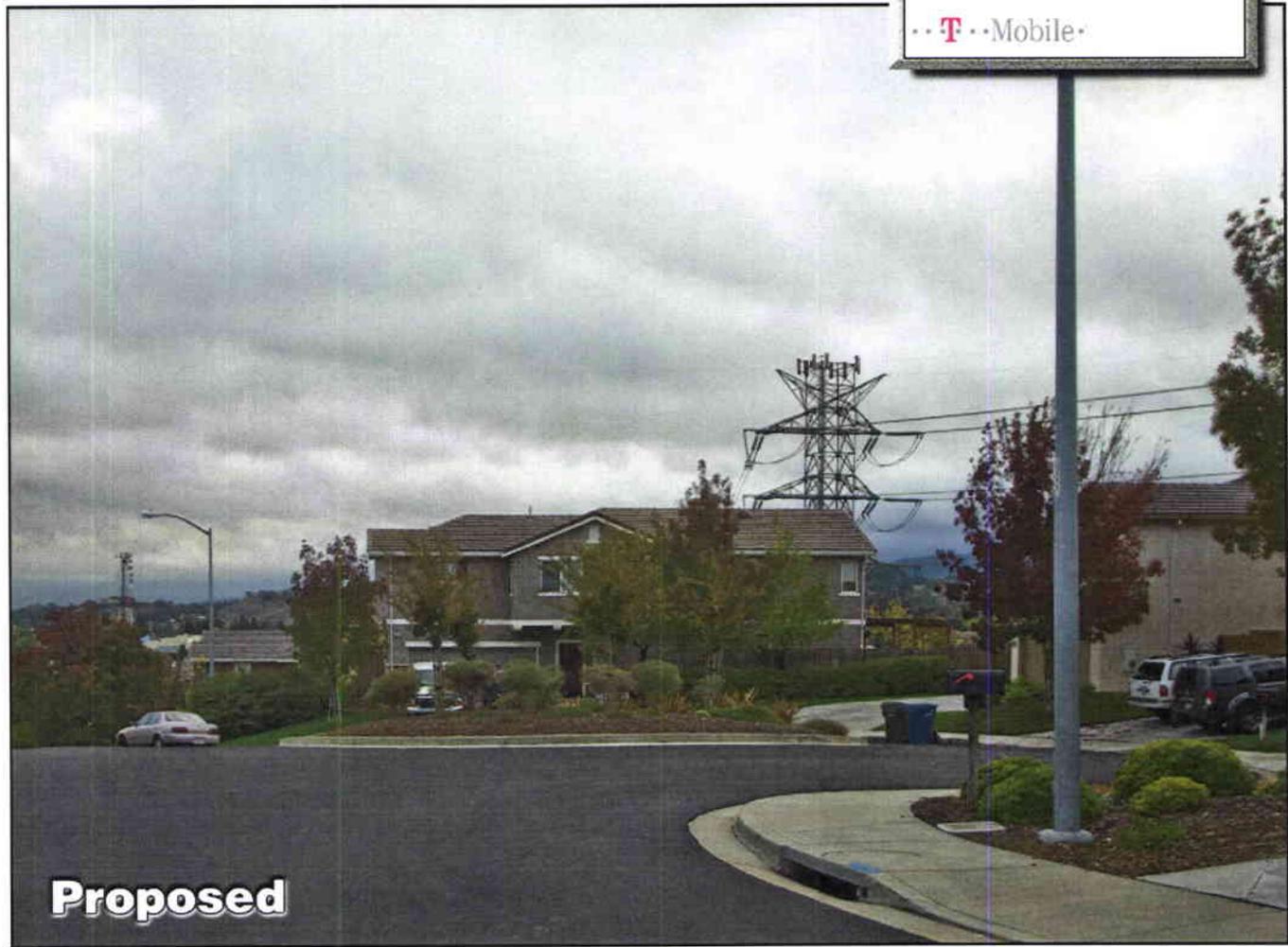
Photosimulation of the proposed telecommunication facility as seen looking east from the parking lot

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



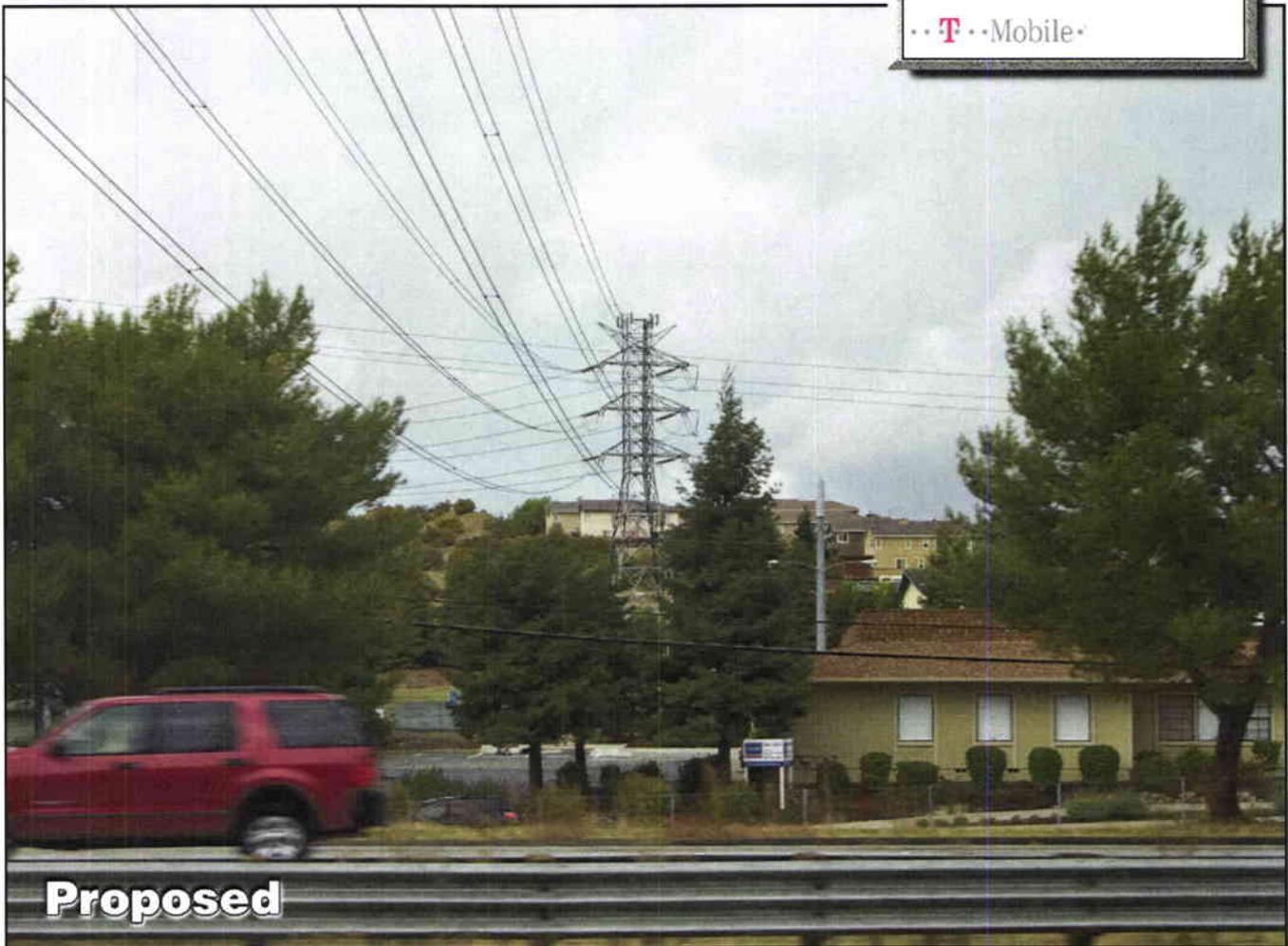
**Existing**

**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.**



**Proposed**

2

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**BA11553E\_Candidate + Neighbours**

RC-123'

Azimuth-40/140/220/310  
 E Tilt-2,2,2,8

2010-02-01 09:58:46

Best Server

- UL
- 76.0 <= x dBm Indoor Coverage
- 84.0 <= x < -76.0 dBm In Car Coverage
- 91.0 <= x < -84.0 dBm Outdoor Coverage

StreetPro\_CA

'System\GSM\Bay Area\Personal Filters\\_zzMB\

Property

MSC

BSC

Cell Site

ID

Cell (GSM)

Property

MSC

BSC

Cell Site

ID

Cell (GSM)

Property

MSC

BSC

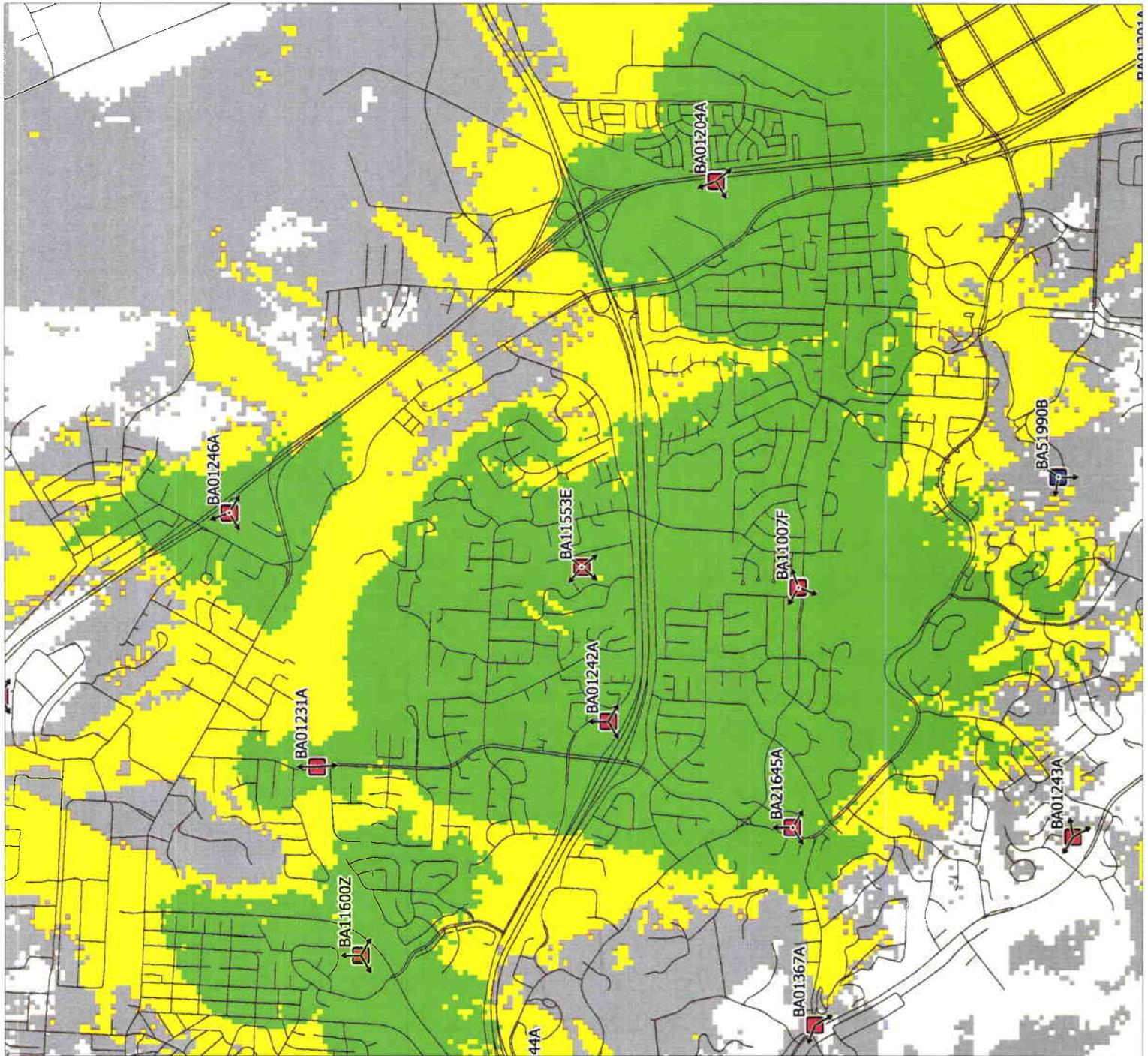
Cell Site

ID

Cell (GSM)

RECEIVED  
 MAY - 4 2010  
 COMMUNITY DEV. DEPT.

Top Right: -122.058488 38.013761  
 Bottom Left: -122.116379 37.973991  
 Scale Ratio 1:27022



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**BA11553E\_Neighbours  
 without Candidate**

RC-123'

Azimuth-40/140/220/310  
 E Tilt-2,2,2,8

2010-02-01 10:00:34

Best Server

- UL
- 76.0 <=x dBm Indoor Coverage
- 84.0 <=x <-76.0 dBm In Car Coverage
- 91.0 <=x <-84.0 dBm Outdoor Coverage

StreetPro\_CA

'System\GSM\Bay Area\Personal Filters\\_zzMB\

- Property
- MSC
- BSC
- Cell Site
- ID
- Cell (GSM)

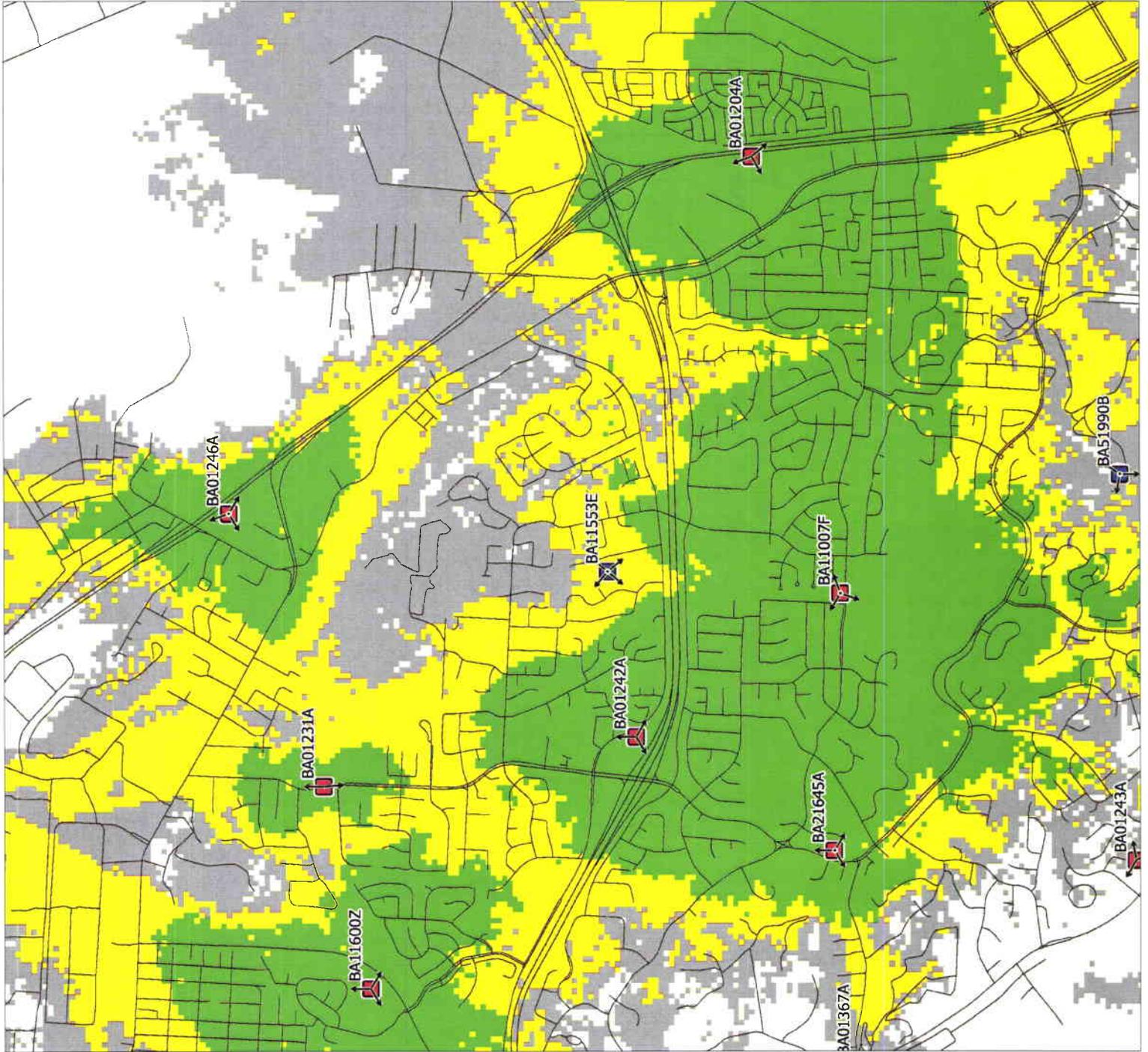


'System\GSM\Bay Area\Personal Filters\\_zzMB\

- Property
- MSC
- BSC
- Cell Site
- ID
- Cell (GSM)

**RECEIVED**  
 MAY - 4 2010  
 COMMUNITY DEV. DEPT

Top Right: -122.060360 38.013509  
 Bottom Left: -122.114135 37.976565  
 Scale Ratio: 1:25100  
 0 0.250 0.500 0.750 1.000 Km



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**BA11553E\_Candidate**

RC-123'

Azimuth-40/140/220/310

E Tilt-2,2,2,8

2010-02-01 09:54:55

Site BA11553E

UL

-76.0 <= x dBm Indoor Coverage

-84.0 <= x < -76.0 dBm In Car Coverage

-91.0 <= x < -84.0 dBm Outdoor Coverage

StreetPro\_CA

'System\GSM\Bay Area\Personal Filters\\_zzMB\

Property

MSC

BSC

Cell Site

ID

Cell (GSM)

Cell (GSM)

Cell (GSM)

Cell (GSM)

Cell (GSM)

Cell (GSM)

Property

MSC

BSC

Cell Site

ID

Cell (GSM)

Cell (GSM)

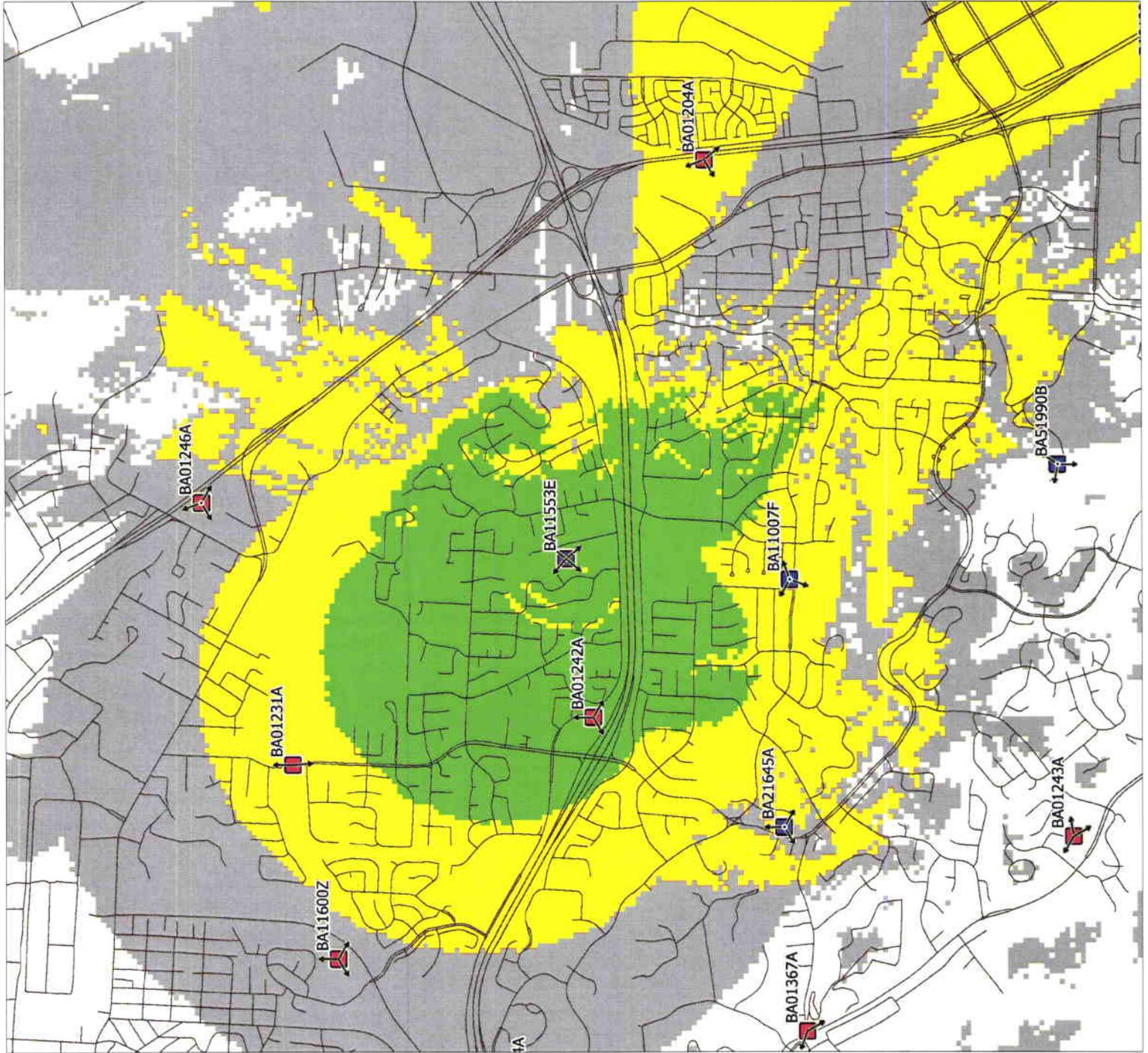
Cell (GSM)

Cell (GSM)

Cell (GSM)

RECEIVED  
MAY - 4 2010  
COMMUNITY DEV. DEPT.

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Scale Ratio 1:26135



RECEIVED  
DEC - 5 2008  
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T-Mobile • Proposed Base Station (Site No. BA11553E)  
5000 Hiller Lane • Martinez, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of T-Mobile, a personal wireless telecommunications carrier, to evaluate the base station (Site No. BA11553E) proposed to be located at 5000 Hiller Lane in Martinez, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. In Docket 93-62, effective October 15, 1997, the FCC adopted the human exposure limits for field strength and power density recommended in Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes similar exposure limits. A summary of the FCC's exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Personal Wireless Service	Approx. Frequency	Occupational Limit	Public Limit
Advanced Wireless ("AWS")	2,100 MHz	5.00 mW/cm <sup>2</sup>	1.00 mW/cm <sup>2</sup>
Personal Communication ("PCS")	1,950	5.00	1.00
Cellular Telephone	870	2.90	0.58
Specialized Mobile Radio	855	2.85	0.57
[most restrictive frequency range]	30-300	1.00	0.20

Power line frequencies (60 Hz) are well below the applicable range of these standards, and there is considered to be no compounding effect from simultaneous exposure to power line and radio frequency fields.

General Facility Requirements

Base stations typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to the traditional wired telephone lines, and the passive antennas that

**T-Mobile • Proposed Base Station (Site No. BA11553E)  
5000 Hiller Lane • Martinez, California**

send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables about 1 inch thick. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. Along with the low power of such facilities, this means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

**Computer Modeling Method**

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

**Site and Facility Description**

Based upon information provided by T-Mobile, including drawings by MST Architects, dated October 22, 2008, it is proposed to mount eight RFS Model APX16DWV-16DWV-S-E-ACU directional panel antennas on top of a 121-foot PG&E lattice transmission line tower located at 5000 Hiller Lane in Martinez. The antennas would be mounted at an effective height of about 123 feet above ground and would be oriented in pairs toward 50°T, 140°T, 210°T, and 300°T. The maximum effective radiated power in any direction would be 2,730 watts, representing the simultaneous operation of four PCS channels at 470 watts each and one AWS channel at 850 watts. Presently located on the same tower, at an effective height of about 44 feet above ground, are similar antennas for use by Sprint Nextel, another wireless telecommunications carrier. For the purpose of this study, it is assumed that Sprint Nextel has installed EMS Model RR9017 panel PCS antennas and Andrew DB844G65 panel SMR antennas and operates at a maximum effective radiated power of 3,000 watts, representing simultaneous operation at 1,500 watts each for PCS and SMR service.

**Study Results**

For a person anywhere at ground, the maximum ambient RF exposure level due to the proposed T-Mobile operation by itself is calculated to be 0.00057 mW/cm<sup>2</sup>, which is 0.057% of the applicable

**T-Mobile • Proposed Base Station (Site No. BA11553E)  
5000 Hiller Lane • Martinez, California**

public exposure limit. The maximum calculated cumulative level at ground, for the simultaneous operation of both carriers, is 1.0% of the public exposure limit; the maximum calculated cumulative level at the second-floor elevation of any nearby residence\* is 1.8% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels.

**No Recommended Mitigation Measures**

Due to their mounting location, the T-Mobile antennas are not accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. It is presumed that PG&E already takes adequate precautions to ensure that there is no unauthorized access to its tower. To prevent exposures in excess of the occupational limit by authorized PG&E workers, it is expected that they will adhere to appropriate safety protocols adopted by that company.

**Conclusion**

Based on the information and analysis above, it is the undersigned's professional opinion that the base station proposed by T-Mobile at 5000 Hiller Lane in Martinez, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations.

**Authorship**

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2009. This work has been carried out by him or under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



*William F. Hammett*  
William F. Hammett, P.E.

November 11, 2008

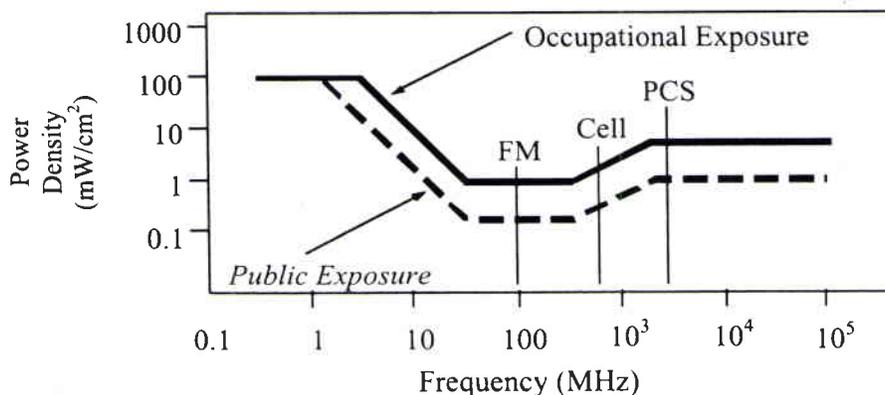
\* Located at least 110 feet away, based on aerial photographs from Google Maps.

## FCC Radio Frequency Protection Guide

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

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

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



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

**HAMMETT & EDISON, INC.**  
CONSULTING ENGINEERS  
SAN FRANCISCO

FCC Guidelines  
Figure 1

*2aa*

## RFR.CALC™ Calculation Methodology

### Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

#### Near Field.

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

For a panel or whip antenna, power density  $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$ , in mW/cm<sup>2</sup>,

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

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

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

$D$  = distance from antenna, in meters,

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

$\eta$  = aperture efficiency (unitless, typically 0.5-0.8).

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

#### Far Field.

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

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

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

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

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

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