



**MEETING OF JUNE 17, 2014**

**AGENDA ITEM NO. 5A**

Application I.D.: PA2014-0012  
Application Type: Conditional Use Permit and Design Review  
Location: 2130 Ralston Avenue  
Applicant: Pacific Telecom Services, for Sirius XM  
Owners: David & Leslie Vallerga  
APN: 044-274-120  
Zoning: E-1 (Executive Administrative)  
General Plan Designation: Co (Office Commercial)  
Environmental Determination: Categorically Exempt, Section 15303, Class 3(e)

**PROJECT DESCRIPTION**

The applicant has requested approval of a Conditional Use Permit and Design Review application to remove and install new antennas and associated equipment on the roof and within the equipment room of the subject property office building for Sirius XM.

**RECOMMENDATION**

Staff recommends the Planning Commission approve the Conditional Use Permit and Design Review applications subject to the conditions of approval contained in the attached resolution<sup>1</sup>.

**ZONING/GENERAL PLAN DESIGNATION**

The site is located within the E-1 Executive Administrative Zoning District and is designated Co – Office in the General Plan. A wireless facility is permitted for this property with approval of a Conditional Use Permit.

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<sup>1</sup> Please note: This recommendation is made in advance of public testimony or Commission discussion of the project. At the public hearing, these two factors, in conjunction with the staff analysis, will be considered by the Commission in rendering a decision on the project.

PLANNING COMMISSION STAFF REPORT  
RE: 2130 Ralston Avenue, #PA 2014-0012  
June 17, 2014  
Page 2

**300-500-Foot Radius Map**

## **PRIOR ACTIONS**

A review of planning files resulted in finding ten prior communication facility applications granted for the subject property. These included the following:

- 1992 – A building permit to renovate an existing bath/storage room and locate an equipment/communication facility, and two poles consisting of three-panel antennas (total of six panel antennas).
- 1999 – A Conditional Use Permit approval for the replacement of six-panel antennas located on two existing poles.
- 2000 – A Conditional Use Permit and Design Review approval for a pole antenna consisting of two panel antennas.
- 2001 – A Conditional Use Permit and Design Review approval for a wireless radio satellite facility (XM Radio).
- 2001 – A Conditional Use Permit and Design Review approval for three-panel antennas and a screen/parapet along the existing building's roofline.
- 2001 – Design Review approval for a final Landscape/Irrigation Plan (in association with a communication facility application).
- 2008 - A Conditional Use Permit and Design Review approval for three-panel antennas and associated equipment.
- 2011 – Conditional Use Permit and Design Review approval for the replacement an existing wireless antenna and installation of three new antennas and associated equipment.
- 2012 – Conditional Use Permit and Design Review approval to remove three antennas, and the installation of six new antennas and associated equipment.
- 2013 – Conditional Use Permit and Design Review approval to remove three antennas, relocate three antennas, and install three new antennas and associated equipment.

## **SITE CONDITIONS**

The project site is located on the north side of Ralston Avenue east of Pullman Avenue. Single-family residences adjoin the subject site at the rear and east side of the property. The site is somewhat screened from the street and adjacent properties by mature trees/vegetation.

The existing office building currently has other roof-mounted antennas on the building that are owned and operated by AT&T, Sprint/Nextel, T-Mobile, and Sirius XM Satellite.

## PROJECT ANALYSIS

The applicant proposes to modify the existing radio satellite facility by replacing the existing Omni antenna, and installing a Very Small Aperture Terminal (VSAT) antenna and GPS antenna. All existing and proposed antennas will be partially screened by the existing roof parapet. Associated equipment cabinets will be located in a designated equipment room within the basement of the office building linked to the antenna(s) by coax cables (cables located on the roof will be housed in tray covers).

<b>Existing &amp; Proposed Antenna Types</b>
<b><u>Existing Antennas</u></b>  AT&T: Nine (9) existing panel antennas.  Sprint / Nextel: Three (3) existing panel antennas and one (1) GPS antenna.  T-Mobile: Three (3) existing panel antennas and one (1) GPS antenna.  Sirius XM Satellite: One (1) dish/antenna and one (1) Omni antenna.
<b><u>Proposed Antennas</u></b>  Sirius XM: Remove/replace an Omni antenna, and install VSAT and GPS antennas (dish/panel antenna to remain).
<i>21 total existing and proposed antenna. Net increase of two antennas with this application. (*Total antenna types based on previous planning application/files and current Sirius XM application).</i>

### Wireless Facility Engineering Review

A radio frequency analysis for the site was prepared by Pacific Telecom Services (PTS) (see Attachment IV). The PTS report states that based on their review, the proposed RF configuration, and applying the worst-case scenario, the proposed site will comply with current FCC and municipal guidelines.

The project was peer-reviewed by the City's third party telecommunications engineering firm-RCC Consultants, Inc (RCC) in a report dated June 3, 2014. A Copy of the report/peer review is included in Attachment VI. RCC has reviewed the proposed project and concluded that:

- The proposed site modification is necessary for Sirius XM to integrate technical resources of the former XM satellite network.
- The proposed design is considered reasonable and consistent with industry best practices to augment coverage of the satellite broadcast service via terrestrial repeater signals.
- The proposed installation will meet Federal Communications Commission guidelines pertaining to radio frequency emissions exposure to the general public.

## **NEIGHBORHOOD OUTREACH STRATEGY**

The applicant performed neighborhood outreach as detailed in the Neighborhood Outreach Strategy attached to this report. The applicant reported mailing a notice/letter (April 14, 2014) to property owners (within 300 feet of the site) informing them of the project and requesting questions or comments via e-mail, phone or mail. A copy of the notice/letter is included in Attachment V. The applicant appears to have achieved the outreach strategy tasks.

## **ENVIRONMENTAL CLEARANCE (CEQA)**

The proposed project is categorically exempt from the provisions of the California Environmental Quality Act as it qualifies under Section 15303, Class 3(e):

*“Construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure.”*

The proposed antennas and equipment comply with this designation and are exempt per CEQA.

## **SIGNAL RECEIVING OR TRANSMITTING ANTENNAS ANALYSIS**

Section 25 of the Belmont Zoning Ordinance establishes that all wireless communications facilities in the City of Belmont secure approval of a Conditional Use Permit. Thus, in order to make findings of approval for the Conditional Use Permit, the Planning Commission must determine that the telecommunication facility meets standards and requirements of the Wireless Communication Ordinance.

### **Section 25.7.1 – Definitions**

The Ordinance defines a Building Mounted Antenna as “a device, mounted to a building or rooftop equipment screen that transmits or receives electromagnetic signals”. The subject satellite radio facility antennas will be attached to the roof of the existing office building and can be reviewed by the wireless communication facility standards.

### **Section 25.7.2. – Standards**

#### **General Standards**

- A. *Building mounted antennae are encouraged.*

The proposed antennas are considered building-mounted as they would be attached to the existing office building.

- B. *Where building-mounting is not possible, an attempt should be made to screen new monopoles from public view and to co-locate new antennas on existing monopoles on the site.*

As mentioned above, the proposed antennas are considered building-mounted as they would be attached to the existing office building.

- C. *In order to minimize overall visual impacts, wireless communication facilities should be designed to promote facility and site sharing.*

The existing office building currently has other roof-mounted antennas on the building that are owned and operated by AT&T, Sprint/Nextel, T-Mobile and XM Satellite Radio. The subject property appears to be the most appropriate location in the general vicinity for a wireless communications facility as it is the only property in the general area that does not have a residential General Plan designation.

- D. *Wireless communication facilities should avoid any unreasonable views from neighboring properties.*

The project site contains mature trees/vegetation on site that will generally help to screen the antennas from neighboring properties. The antennas will also be partially obscured from view by an existing screen/parapet on the second story of the building. The antennas will be painted to match the existing color of the parapet along the roof of the existing office building.

- E. *No facility should be installed on an exposed ridgeline, in or at a location readily visible from a public trail or other recreation area or scenic area unless it is screened to appear as a natural environmental feature.*

The proposed antennas will not be visible from a public trail or other recreation areas. Additionally, all equipment associated with the proposed antennas will be located in the basement and on the roof of the office building. The existing trees/vegetation on site will generally assist in screening the proposed wireless facility components from public view.

1. Site Location Standards:

- A. *Wireless communications facilities may be considered at the following locations, provided that other City requirements are satisfied:*

3. Commercial and Industrial Land:

*Wireless communication facilities may be installed on sites with Commercial, Industrial, and Mixed Uses General Plan designations.*

The project site is designated Co – Office in the City General Plan, which is a Commercial land use designation. The site is appropriate for installation of a wireless facility.

- A. *Wireless communication facilities are not permitted on any property with a residential General Plan land use designation unless a variance pursuant to Section 14 to this standard is granted.*

The property does not have a residential land use designation and thus no variance to this standard is required.

2. Standards for Building-Mounted Antennas:

- A. *Building-mounted antennae and any ancillary equipment shall be in scale and architecturally integrated with the building design in such a manner as to be visually unobtrusive.*

The antennas will be partially obscured from view by an existing screen/parapet on the second story of the building. The antennas will be painted to match the existing color of the parapet along the roof as conditioned. The existing trees/vegetation onsite will generally screen the proposed satellite radio facility from public view. Additionally, all equipment associated with the proposed antennas will be located in the basement and on the roof of the existing office building, out of public view.

- B. *When feasible, colors and materials shall match the existing building.*

The new antennas will be appropriately painted to blend with the existing screen/parapet on the second story of the building.

- C. *Any ancillary equipment shall be adequately screened from public view.*

As discussed above, all equipment associated with the proposed antennas will be located out of public view, within the basement and on the roof of the office building.

- D. *Building-mounted antennae and any ancillary equipment shall not extend more than 15 feet above the main structure's height limit of the zoning district within which the facility is located.*

The maximum height allowed for any building-mounted antennae and ancillary equipment is 15 feet above the main building height limit for the district. In this instance, the E-1 District allows a maximum height of 35 feet; thus the maximum height for an antenna would be 50 feet. The proposed roof-mounted elements meet the height requirements for the district.

- E. Building-mounted antennae and any ancillary equipment shall avoid any interference with public views, unless the applicant demonstrates that no other feasible location within the City is available.*

Staff believes the project will not disrupt any public views as assessed from Ralston Avenue, Pullman Avenue, and the surrounding areas.

Other conditions:

Section 25.7.5 provides authority to impose additional appropriate conditions on a project by project basis to ensure land use compatibility. The following additional conditions apply to this project and would be added to the permit:

1. The applicant may be required to correct any and all future interference problems experienced by neighbors with respect to reception problems caused by this facility.
2. The applicant shall agree to adjust, correct or remove the antennas to the satisfaction of the City of Belmont should the transmission from the antennas interfere with Belmont emergency transmission or communication facilities.
3. If the facility is abandoned in the future, the applicant will be required to remove the wireless communication antennae and equipment from the site.

**CONDITIONAL USE PERMIT & DESIGN REVIEW ANALYSIS**

The requisite Conditional Use Permit Findings (Section 11.5.1) and Design Review Principles (Section 13.5.3) are provided in the attached resolution (see Attachment II).

**CONCLUSION AND RECOMMENDATIONS**

Based on the foregoing analysis, staff recommends approval of the Conditional Use Permit and Design Review application with the conditions of approval as specified in Attachment III of this report.

**ACTION ALTERNATIVES**

1. Continue the project and direct staff to work with the applicant to redesign the wireless telecommunications facility.
2. Deny the Conditional Use Permit and Design Review application.

## ATTACHMENTS

- I. 300/500 Foot Radius Map (incorporated as Page 2 of report)
- II. Resolution approving the Conditional Use Permit and Design Review
- III. Conditions of Approval
- IV. RF Frequency Analysis by Pacific Telecom Services, March 6, 2014
- V. Neighborhood Outreach Strategy
- VI. RCC Consultants, Inc., report dated June 3, 2014
- VII. Applicant's plans and submittal materials (Commission only)
- VIII. Photo Simulation (Commission only)
- IX. Staff's Photos (Commission only)

Respectfully submitted,

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Rob D. Gill  
Associate Planner

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Carlos de Melo  
Community Development Director

CC: Applicant/Property Owner

RESOLUTION NO. 2014-

RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF BELMONT  
APPROVING A CONDITIONAL USE PERMIT AND DESIGN REVIEW TO ALLOW  
MODIFICATIONS TO AN EXISTING SIRIUS XM SATELLITE RADIO FACILITY AT  
2130 RALSTON AVENUE (PA2014-0012)

WHEREAS, Pacific Telecom Services, Inc., on behalf of Sirius XM, requests a Conditional Use Permit and Design Review to replace an existing Omni antenna, install a Very Small Aperture Terminal (VSAT) and GPS antennas, and associated equipment on the roof and within the equipment room of the subject property office building located at 2130 Ralston Avenue; and,

WHEREAS, a public hearing was duly noticed, held, and closed on June 17, 2014.

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission approves the Conditional Use Permit and Design Review to remove and install new antennas and associated equipment on the roof and within the equipment room of the subject property office building for Sirius XM at 2130 Ralston Avenue, subject to the conditions in Exhibit "A", upon finding that:

Environmental Review

The proposed project is categorically exempt from the provisions of the California Environmental Quality Act as it qualifies under Section 15303, Class 3.

*"Construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure."*

Planning Commission

The Planning Commission hereby adopts the staff report dated June 17, 2014, and the facts contained therein as its own findings of facts.

Conditional Use Permit

The Commission may grant the Conditional Use Permit subject to the following findings of BZO Section 11:

- A. *The location of the proposed use is compatible to other land uses in the general neighborhood and does not place an undue burden on existing transportation, utilities and services of the vicinity.*

The satellite radio facility as proposed is compatible with other uses in the neighborhood in that the site is designated for professional office uses. Surrounding uses include residential properties on three sides. The facility is proposed to be sited and painted to limit visual impacts to surrounding uses. Each antenna will be placed on the roof behind the parapet along the roofline of the existing office building.

The dwelling to the east is located downhill from the project site; thus, limited views of the proposed antennas on the east side would be possible. Residential uses to the south, across Ralston Avenue, are screened by dense vegetation. The residence to the west across Pullman Avenue has a limited number of windows facing the office building. Therefore, views from the residence to the west do not appear to be significantly impacted by the proposed antennas. Residences to the north of the project site would be most affected in terms of view. However, the location/placement of the proposed antennas on the building, in combination with the existing vegetation appears to help diffuse any significant visual impacts for those properties to the north.

Construction of the proposed (modified) satellite radio facility will not place an undue burden on existing transportation, utilities and services in the vicinity since the project only requires on-site visits by Sirius XM personnel for regular maintenance of this facility. This finding is affirmed.

*B. The site is of sufficient size to accommodate the proposed use together with all yards, open spaces, walls and fences, parking and loading facilities, landscaping and such other provisions required by this Ordinance.*

The site allows the proposed use to conform to conditions of development as required by the Belmont Zoning Ordinance (BZO). The proposed (modified) satellite radio facility will not infringe upon required setbacks, open space, walls and fences, parking and loading facilities, landscaping and other provisions required by the BZO. This finding is affirmed.

*C. The site will be served by streets of capacity to carry the traffic generated by the proposed use.*

The proposed use will generate minimal additional traffic in that it will generally involve only limited visits by maintenance personnel. The site is served by Ralston Avenue, a major arterial route in the City that can accommodate the traffic generated by the proposed use. This finding is affirmed.

*D. The proposed use, if it complies with all conditions upon which approval is made contingent, will not adversely affect other property in the vicinity or the general welfare of the City.*

The conditions of approval of this permit include standards in accordance with the Wireless Communication Ordinance to ensure land use compatibility. The proposed satellite radio facility, as conditioned by this permit, appears to not adversely affect other properties in the vicinity or the general welfare of the City. This finding is affirmed.

### Design Review

The project is consistent with Design Review Ordinance Principles of Section 13.5.3 of the Belmont Zoning Ordinance as follows:

- A. *Review of buildings or structures for scale, mass, proportion, use of materials, relationship to adjacent elements and relationship to the community as a whole.*

The proposed antennas have been designed to have a minimal impact on neighborhood aesthetics with the use of colors that would match the color (as conditioned) of the parapet along the roof line of the existing office building. There is adequate mature landscaping on the site and within the surrounding neighborhood that will generally help screen the wireless facility from surrounding residential properties. Additionally, all equipment associated with the proposed antennas will be located in the basement and on the roof of the building, out of public view.

- B. *Review of proposed exterior color and material application with relationship to adjacent architectural or natural elements. The intent with respect to review of color is to avoid the use of extreme color.*

The proposed antennas will be painted (as conditioned) the same color as the parapet along the roof line of the existing office building. All equipment associated with the proposed antennas will be located out of public view, within the basement and on the roof of the building.

- C. *Review of the proposed location, height, and materials of walls, fences, hedges and screen plantings to insure harmony with adjacent development or to conceal storage areas, utility installations or other surfacing to prevent dust erosion.*

Existing vegetation on site includes primarily mature shrubs and screening trees along Ralston Avenue (within the public right-of-way) and at the southwest corner of the site. Other vegetation is found on the adjacent properties to the east, north and south (across Ralston Avenue) of the site. The proposed project does not include any new fences, walls or landscaping. The mature landscaping on the subject property and surrounding the site generally provides a sufficient barrier/screen between the proposed wireless facility and the closest residence(s).

- D. Review of location, size, height, lighting and landscaping of signs as specified in the Sign Ordinance, in relation to traffic hazards and the appearance of harmony with the environment. The intent with respect to review of color is to avoid the use of extreme color.*

No signs or lighting are proposed for this project.

- E. Review of site layout considering the orientation and location of buildings and open spaces in relation to the physical characteristics of the site, the character of the neighborhood, the appearance and harmony of the buildings with adjacent development and the surrounding landscape.*

No buildings are proposed for this project.

- F. Review of the layout of the site with respect to locations and dimension of vehicular and pedestrian entrances, exits, drives and walkways.*

Vehicular and pedestrian access to the building would not be altered or changed as a result of this application.

- G. Review of site landscaping including adequacy of irrigation plans, size and location of plant materials, and protection of existing plant materials.*

No new landscaping is proposed on the site in conjunction with this application. The existing vegetation on site, which includes mature trees/vegetation, and a row of screening trees along Ralston Avenue is appropriate for the proposed use.

A Design Review approval for a final landscape/irrigation plan was approved and installed for the site in 2001. It should be noted that some pruning measures were required for these screening trees in 2006 to address traffic circulation and site visibility issues associated with turning movements from Pullman Avenue.

The Planning Commission has considered the applicant's request for Design Review and finds it generally consistent with the Design Review Ordinance Principles (Section 13.5.3). The Planning Commission reviewed the proposed wireless facility installation and landscaping and believes the proposal (as conditioned) conforms to all required standards and is generally compatible with neighboring properties.

\* \* \* \* \*

Passed and adopted at a regular meeting of the Planning Commission of the City of Belmont held on June 17, 2014 by the following vote:

AYES,  
COMMISSIONERS: \_\_\_\_\_  
NOES,  
COMMISSIONERS: \_\_\_\_\_  
ABSENT,  
COMMISSIONERS: \_\_\_\_\_  
ABSTAIN,  
COMMISSIONERS: \_\_\_\_\_  
RECUSED,  
COMMISSIONERS: \_\_\_\_\_

\_\_\_\_\_  
Carlos de Melo  
Planning Commission Secretary

## EXHIBIT "A"

### CONDITIONS OF PROJECT APPROVAL CONDITIONAL USE PERMIT & DESIGN REVIEW 2130 RALSTON AVENUE (APPL. NO.PA2014-0012)

#### I. COMPLY WITH THE FOLLOWING CONDITIONS OF THE COMMUNITY DEVELOPMENT DEPARTMENT:

- A. The following conditions shall be shown on plans submitted for a building permit and/or site development permit or otherwise met prior to issuance of the first building permit and shall be completed and/or installed prior to occupancy and remain in place at all times that the use occupies the premises except as otherwise specified in the conditions:

#### Planning Division

1. Construction shall conform to the plans on file in the Planning Division for Appl. No. 2012-0036 and date-stamped March 19, 2014. The Director of Community Development may approve minor modifications to the plans.
2. All construction and related activities which require a City building permit shall be allowed only during the hours of 8:00 a.m. to 5:00 p.m. Monday through Friday, and 10:00 a.m. to 5:00 p.m. on Saturdays. No construction activity or related activities shall be allowed outside of the aforementioned hours or on Sundays and the following holidays: New Year's Day, President's Day, Memorial Day, 4<sup>th</sup> of July, Labor Day, Thanksgiving Day and Christmas Day. All gasoline powered construction equipment shall be equipped with an operating muffler or baffling system as originally provided by the manufacturer, and no modification to these systems is permitted.
3. Prior to issuance of building permits, the property owner shall file with the Director of Community Development, on forms provided by the City, an acknowledgment that he/ she has read, understands and agrees to these conditions of approval.
4. In accordance with the Belmont Zoning Ordinance, the permit(s) granted by this approval shall expire one (1) year from the date of approval, with said approval date indicated on the accompanying Planning Commission resolution. Any request for extension of the expiration date shall be made in accordance with the applicable provisions of the Belmont Zoning Ordinance.
5. In the event that this approval is challenged by a third party, the property owner and all assignees will be responsible for defending against this challenge, and agrees to accept responsibility for defense at the request of the City. The property owner and all assignees agree to defend, indemnify and hold harmless the City of Belmont and all officials, staff, consultants and agents from any costs, claims or liabilities arising from the approval, including without limitation, any award of attorneys fees that might result from the third party challenge.

6. Signage: A sign shall be posted at the antenna mounting locations and at the building access ladder (if not already in place) instructing maintenance personnel to contact Sirius XM prior to working near an antenna. RF warning signs shall also be posted at the antenna mounting locations (for antennas transmitting RF) of the proposed Sirius XM antennas, and at the base of the building access ladder (if not already in place).
7. The applicant shall be required to correct any and all future interference problems experienced by neighbors with respect to reception problems caused by this facility.
8. The applicant shall agree to adjust, correct or remove the antennas to the satisfaction of the City of Belmont should the transmission from the antennas interfere with Belmont emergency transmission or communication facilities.
9. If the satellite radio facility ceases to be used by the current or future operators of the facility, such operators of the former facility shall be required to remove the wireless communication antennae, equipment structure, and all its contents from the site.
10. The applicant shall post these Conditions of Approval and the approved site plans for the approved wireless communications facility use such that it is permanently and clearly visible to all facility personnel. Such posting shall also include contact information/phone numbers for noise complaints associated with operation of the facility.
11. All construction activity shall be in compliance with the standards established in Section 15-102(c) of the Belmont Noise Ordinance (Maximum 65 dBA for daytime hours [8:00 AM to dusk], Maximum 55 dBA for nighttime hours [dusk to 8:00 AM]).
12. The proposed and existing antennas (including dish type) and all mounting equipment shall be painted the same color as the parapet along the roof line of the existing office building.
13. No existing trees (protected or non-protected) or vegetation shall be removed or damaged by the construction activities of this project or in association with the proposed Sirius XM facility.
14. The exterior roof access ladder shall be fitted with a climbing lock, if not already installed.
15. Sirius XM and its representatives shall not make any physical changes (i.e. new, modified or replace equipment that would either increase the emitted power density (RF – EMF), or increase the leased space of its facility without first obtaining all required approvals from the City of Belmont.

Building Division

1. Prior to any construction, the applicant or a designated representative shall obtain all of the required building permits for the project. Plans shall conform to approved plans and shall show building materials and color scheme.
2. The construction/maintenance crew shall post hours of operation and phone numbers for noise complaints during construction of the facility.
3. The applicant/owner shall require all contractors and subcontractors to make a good faith effort to contact a construction and demolition provider.
4. The project manager shall notify contractors and subcontractors of the City's expectation of maximizing diversion of solid waste.
5. The applicant/owner shall be responsible in investigating opportunities for salvaging materials for reuse.
6. The applicant shall specify on the plan that the 2013 California Building Code and all applicable City of Belmont ordinances will be employed during this project.

II. COMPLY WITH THE FOLLOWING CONDITIONS OF THE PUBLIC WORKS DEPARTMENT:

- A. The following conditions shall be met prior to the issuance of the first building permit (i.e., foundation permit) and/or site development permits except as otherwise specified in the conditions.
  1. The property owner/applicant shall apply for and obtain temporary encroachment permits from the Department of Public Works for work in the City public right-of-way, easements or property in which the City holds an interest, including driveway, sidewalk, sewer connections, sewer clean-outs, curb drains, storm drain connections, placement of a debris box.
- B. The following conditions shall be met prior to occupancy except as otherwise specified in the conditions.
  1. The owner/applicant shall ensure that applicable Best Management Practices (BMPs) from the San Mateo Stormwater Pollution Prevention Program (STOPP) are followed to prevent discharge of soil or any construction material into the gutter, stormdrain system or creek.

- C. The following conditions shall be met prior to occupancy except as otherwise specified in the conditions.
  - 1. After the City permits are approved but before beginning construction, the owner/applicant shall hold a preconstruction conference with Building and Public Works Department staff and other interested parties. The developer shall arrange for the attendance of the construction manager, contractor, and all subcontractors who are responsible for grading and erosion and sedimentation protection controls.
  - 2. The owner/applicant shall ensure that all construction personnel follow standard BMPs for stormwater quality protection during construction of project. These includes, but are not limited to, the following:
    - a. Store, handle and dispose of construction materials and wastes properly, so as to prevent their contact with stormwater.
    - b. Control and prevent the discharge of all potential pollutants, including solid wastes, paints, concrete, petroleum products, chemicals, washwater or sediment, and non-stormwater discharges to storm drains and watercourses.
    - c. Use sediment controls, filtration, or settling to remove sediment from dewatering effluent.
    - d. Do not clean, fuel, or maintain vehicles on-site, except in a designated area in which runoff is contained and treated.
    - e. Delineate clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses with field markers or fencing.
    - f. Protect adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching or other measures as appropriate.
    - g. Perform clearing and earth moving activities only during dry weather (April 15 through November 14).
    - h. Limit and time applications of pesticides and fertilizers to prevent polluted runoff.
    - i. Limit construction access routes and stabilize designated access points.
    - j. Do not track dirt or other materials off-site; clean off-site paved areas and sidewalks using dry sweeping methods.
- 2. Failure to comply with any permit condition may result in a “Stop Work” order or other penalty.

III. COMPLY WITH THE FOLLOWING CONDITIONS OF THE POLICE DEPARTMENT:

1. All activities shall be subject to the requirements of the Belmont Noise Ordinance.
2. No debris boxes or building materials shall be stored on the street.
3. Flag persons shall be positioned at both ends of blocked traffic lanes.
4. 24-hour written notice to the Police Department is required before any lane closure.

Certification of Approved Final Conditions:	
_____	_____
Rob D. Gill, Associate Planner	Date



# Non-Ionizing Electromagnetic Radiation Report

SFX009C – Belmont  
Sirius XM

2130 Ralston Ave.  
Belmont, CA 94002

March 6, 2014

Prepared by PTS



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# NON-IONIZING ELECTROMAGNETIC RADIATION REPORT

Pinnacle Wireless  
8300 Stayton Drive, Suite A  
Jessup, Maryland 20794

Carrier Name: Sirius XM  
Client Project Number: Belmont  
Client Project Name: SFX009C  
Project Street: 2130 Ralston Ave.  
Belmont, CA 94002  
Site Latitude: 37.511577  
Site Longitude: -122.696953

## PROJECT DESCRIPTION:

Sirius XM proposes the following:

1. Install (1) new SiriusXM Omni Antenna on existing rooftop
2. Remove (1) existing Omni Antenna
3. Install (1) new VSAT Dish Antenna
4. Install (1) new GPS Antenna

## PROJECT SCOPE:

The scope of this report is to determine, using the recommended prediction methods outlined in the Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01, if the radio facility in question will be in compliance with all appropriate Federal regulations in regards to Radio Frequency (RF) Exposure.

## RESULTS:

Based on our review of the proposed RF configuration and applying worst-case scenario, we have determined the proposed site will comply with current FCC and municipal guidelines for human exposure to non-ionizing electromagnetic radiation for the Uncontrolled Condition / General Population Condition.

Total Calculated Maximum Power Exposure (MPE) (mW/cm <sup>2</sup> )		
<b>West Facing Uncontrolled / General Population</b>	MPE Limits per FCC (mW/cm <sup>2</sup> )	1.0
	MPE Calculated at Site (mW/cm <sup>2</sup> )	0.1636
	% MPE	16.36%
<b>East Facing Uncontrolled / General Population</b>	MPE Limits per FCC (mW/cm <sup>2</sup> )	1.0
	MPE Calculated at Site (mW/cm <sup>2</sup> )	0.0978
	% MPE	9.78%
<b>Controlled / Occupational</b>	MPE Limits per FCC (mW/cm <sup>2</sup> )	5.0
	MPE Calculated at Site (mW/cm <sup>2</sup> )	1.164
	% MPE	23.3%

We trust this addresses your concerns. Please contact us if there are any questions.

Prepared By: David Graff, E.I.T  
Dated: March 6, 2014

## 1 Equipment Inventory

Elevation	Equipment	ERP (Watts)	Status	Owner
35.0	Omni Antenna	N/A	Removed	Sirius XM
46.0	VSAT Dish	N/A	Proposed	Sirius XM
46.0	GPS Antenna	N/A	Proposed	Sirius XM
46.0	Omni Antenna	119	Proposed	Sirius XM
40.0	(11) Panel Antennas	5,000	Existing	Other Carrier

**Note:**

The existing unknown antennas listed above are panel antennas on the rooftop not associated with the proposed site but contribute to the overall MPE of the site.

The VSAT dish antenna transmits a focused beam to a receiver and does not contribute to the overall power density. The GPS antenna does not transmit enough radiated power to contribute to the overall power density.

## 2 Documents and Data Provided or Acquired

The following data was used to figure the RF exposure for the site.

Data	Document	Author
Limits for MPE	Table 1 OET Bulletin 65 Appendix A	FCC
Equipment Frequency Range	Equipment Specification Sheet	Manufacturer
Site Information	Construction Drawings	Pinnacle Wireless

---

### 3 Calculation Comments

Section 2 of OET Bulletin 65 states that, "for a truly worst-case prediction of power density at or near the surface, such as at ground-level or on a rooftop, 100% reflection of incoming radiation can be assumed, resulting in a potential doubling of predicted field strength and a four-fold increase in (far field equivalent) power density." For this report, the worst-case of power density is used and the following equation from the OET Bulletin 65 is used.

$$\text{Equation \#6: } S = \text{EIRP}/\pi R^2$$

Where: S = power density (mW/cm<sup>2</sup>)  
EIRP = equivalent isotropically radiated power  
R = distance to the center of the radiation antenna (cm)

For this site, it appears that personnel can access the roof and lower roof at a location which is in line with the primary focus of the panel antennas. For this reason, the controlled exposure calculation is performed conservatively without a 20dB drop, and without the need for assuming reflection of the emissions as stated for the uncontrolled condition above. This shows that the RF exposure has the potential to be high given the location and direction of the mounted antennas relative to the roof access. Therefore, for this report, the following equation #4 from the OET Bulletin 65 is used

$$\text{Equation \#4: } S = \text{EIRP}/4\pi R^2$$

To complete this NIER report, a certain number of assumptions about the building and the existing panel antennas owned by other carrier's on the rooftop had to be made. They are as follows:

1. The height of the lower roof is assumed to be 20 feet AGL.
2. The height of the existing panel antennas is assumed to be 40 feet AGL.
3. From satellite imagery, there are 7 panel antennas facing west and 4 panel antennas facing east, which are not included on the plans. It is assumed that the panel antennas pointing in the separate cardinal directions will not contribute to the overall power density of the site simultaneously. Separate calculations have been completed for each set of antennas, each including the proposed Omni antenna.
4. Since each antenna is at the edge of the roof and facing away from the building, the only controlled condition is considered to be for someone standing on the lower roof. Only 2 panel antennas and the proposed Omni antenna will contribute to power density in this condition.
5. The ERP for the existing panel antennas is unavailable. ERP is conservatively assumed to be 5,000 watts per panel antenna.
6. The 2 existing panel antennas and the Omni antenna above the lower roof are assumed to have a horizontal distance of 14'-4" to the edge of the building for the uncontrolled condition. This represents the closest horizontal distance a person could get to the antennas from the ground.

---

## 4 Conclusions

### Uncontrolled / General Population

To the best of our knowledge and belief, the worst-case RF emissions of the proposed antennas, existing antennas, and antennas located nearby will be in satisfactory compliance with the requirements of the current FCC and municipal guidelines for human exposure to non-ionizing electromagnetic radiation.

The total power density was calculated as 0.1636 mW/cm<sup>2</sup> and 0.0978 mW/cm<sup>2</sup> for west and east facing antennas, respectively, which is well below the maximum power density allowed per the FCC of 1.0 mW/cm<sup>2</sup>.

### Controlled / Occupational

To the best of our knowledge and belief, the worst-case RF emissions of the proposed antennas, existing antennas, and antennas located nearby will be in satisfactory compliance with the requirements of the current FCC and municipal guidelines for human exposure to non-ionizing electromagnetic radiation.

The total power density was calculated as 1.164 mW/cm<sup>2</sup> which is well below the maximum power density allowed per the FCC of 5.0 mW/cm<sup>2</sup>.

## 5 Environmental Evaluation

Routine environmental evaluation is required if the Personal Communications Service (PCS) broadband facility is less than 10m (32.81 ft) above ground level and has a total power of all channels in any given sector greater than 2,000 W ERP as referenced in "Table 2 Transmitters, Facilities, and Operations Subject to Routine Environmental Evaluation" in Appendix A of Bulletin 65. Since the proposed antennas lowest point above ground level is above the maximum elevation of 10 m (32.81 ft), the site is categorically exempt from requirement for routine

## 6 Disclaimer

This report was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided are based solely on the information provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided so that our conclusions may be revised and modified, if necessary. The analysis for this report is considered void if the equipment mentioned in this report is changed, substituted, or installed in alternative locations.

It is the responsibility of the Client to ensure that the information provided and used in the completion of this report is correct and comprehensive. In the absence of information to the contrary, we assume that the equipment listed is a complete inventory that will provide a worst-case scenario of RF exposure.

All services are performed, results obtained, and recommendations made in accordance with generally accepted practices and principles. PTS is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

## A Appendix – MPE Calculations

	Uncontrolled / Gen. Population
Min. Antenna Frequency (MHz)	2,330
Max. Power Density (mW/cm <sup>2</sup> )	1.0

### Uncontrolled Calculations (7) panel antennas facing west with proposed Omni antenna

Radial Center AGL (ft)	Eff. Height (ft)	Horiz. Dist. (ft)	Total Dist. (ft)	Total Dist. (cm)	ERP (watts)	ERP (dBm)	Eff. ERP (dBm)	Eff. EIRP (dBm)	Eff. EIRP (mW)	Power Density, S (mW/cm <sup>2</sup> )
46.0	40.0	14.33	42	1,295	119	50.76	30.76	32.92	1960	0.000372
40.0	34.0	14.33	37	1,125	5,000	66.99	46.99	49.15	82218.59	0.020691
40.0	34.0	14.33	37	1,125	5,000	66.99	46.99	49.15	82219	0.020691
40.0	34.0	0.00	34	1,036	5,000	66.99	46.99	49.15	82218.59	0.024369
40.0	34.0	0.00	34	1,036	5,000	66.99	46.99	49.15	82219	0.024369
40.0	34.0	0.00	34	1,036	5,000	66.99	46.99	49.15	82218.59	0.024369
40.0	34.0	0.00	34	1,036	5,000	66.99	46.99	49.15	82219	0.024369
40.0	34.0	0.00	34	1,036	5,000	66.99	46.99	49.15	82218.59	0.024369

Total Power Density = 0.1636

Percentage of Uncontrolled Maximum Power Density = 16.36%

#### Notes:

1. a 20db loss of emissions to reach a location below the antenna results in EIRP/100
2. Effective Antenna ERP conservatively assumes a 20 dB vertical radiation loss for antennas

#### Assumptions:

1. Effective Height assumes an approximate head level of 6 ft.
2. ERP (dBm) = 10 \* log<sub>10</sub>[ERP (watts)] + 30
3. EIRP (dBm) = 1.64 \* ERP (dBm)
4. EIRP (mW) = 10<sup>[EIRP (dBm)/10]</sup>
5. ERP of the existing panel antennas is conservatively assumed.

**A Appendix -- MPE Calculations**

	Uncontrolled / Gen. Population
Min. Antenna Frequency (MHz)	2,330
Max. Power Density (mW/cm <sup>2</sup> )	1.0

**Uncontrolled Calculations** (4) panel antennas facing east with the proposed Omni antenna

Radial Center AGL (ft)	Eff. Height (ft)	Horiz. Dist. (ft)	Total Dist. (ft)	Total Dist. (cm)	ERP (watts)	ERP (dBm)	Eff. ERP (dBm)	Eff. EIRP (dBm)	Eff. EIRP (mW)	Power Density, S (mW/cm <sup>2</sup> )
46.0	40.0	14.33	42	1,295	119	50.76	30.76	32.92	1960	0.000372
40.0	34.0	0.00	34	1,036	5,000	66.99	46.99	49.15	82219	0.024369
40.0	34.0	0.00	34	1,036	5,000	66.99	46.99	49.15	82219	0.024369
40.0	34.0	0.00	34	1,036	5,000	66.99	46.99	49.15	82219	0.024369
40.0	34.0	0.00	34	1,036	5,000	66.99	46.99	49.15	82219	0.024369

Total Power Density = 0.0978  
 Percentage of Uncontrolled Maximum Power Density = 9.78%

Notes:

1. A 20db loss of emissions to reach a location below the antenna results in EIRP/100
2. Effective Antenna ERP conservatively assumes a 20 dB vertical radiation loss for antennas

Assumptions:

1. Effective Height assumes an approximate head level of 6 ft.
2. ERP (dBm) = 10 \* log10[ERP (watts)] + 30
3. EIRP (dBm) = 1.64 \* ERP (dBm)
4. EIRP (mW) = 10<sup>[EIRP (dBm)/10]</sup>
5. ERP of the existing panel antennas is conservatively assumed.

## A Appendix – MPE Calculations

	Controlled / Occupational
Min. Antenna Frequency (MHz)	2,330
Max. Power Density (mW/cm <sup>2</sup> )	5.0

### Controlled Calculations

Exposure on lower roof due to (2) panel antennas with the proposed Omni antenna.

Radial Center AGL (ft)	Eff. Height (ft)	Horiz. Dist. (ft)	Total Dist. (cm)	ERP (watts)	ERP (dBm)	Eff. ERP (dBm)	Eff. EIRP (dBm)	Eff. EIRP (mW)	Power Density, S (mW/cm <sup>2</sup> )
46.0	17.0	0	518	119	50.76	30.76	32.92	1.960	0.00058
40.0	11.0	0	335	5,000	66.99	56.99	59.15	822.186	0.58173
40.0	11.0	0	335	5,000	66.99	56.99	59.15	822.186	0.58203

Total Power Density = 1.164  
 Percentage of Uncontrolled Maximum Power Density = 23.3%

### Notes:

1. a 0 dB loss is assumed for effective height of 0 to 6 feet
2. a 10 dB loss is assumed for effective height of 6 to 12 feet
3. a 20 dB loss is assumed for effective height greater than 12 feet
4. Controlled condition is at roof top and the standard equation #4 is used

### Assumptions:

1. Effective Height assumes an approximate head level of 6 ft, measured from bottom of antenna.
2. ERP (dBm) = 10 \* log<sub>10</sub>[ERP (watts)] + 30
3. EIRP (dBm) = 1.64 \* ERP (dBm)
4. EIRP (mW) = 10<sup>[EIRP (dBm)/10]</sup>
5. Effective Height assumed an elevation of the Lower Roof is 20' AGL
6. ERP of the existing panel antennas is conservatively assumed.

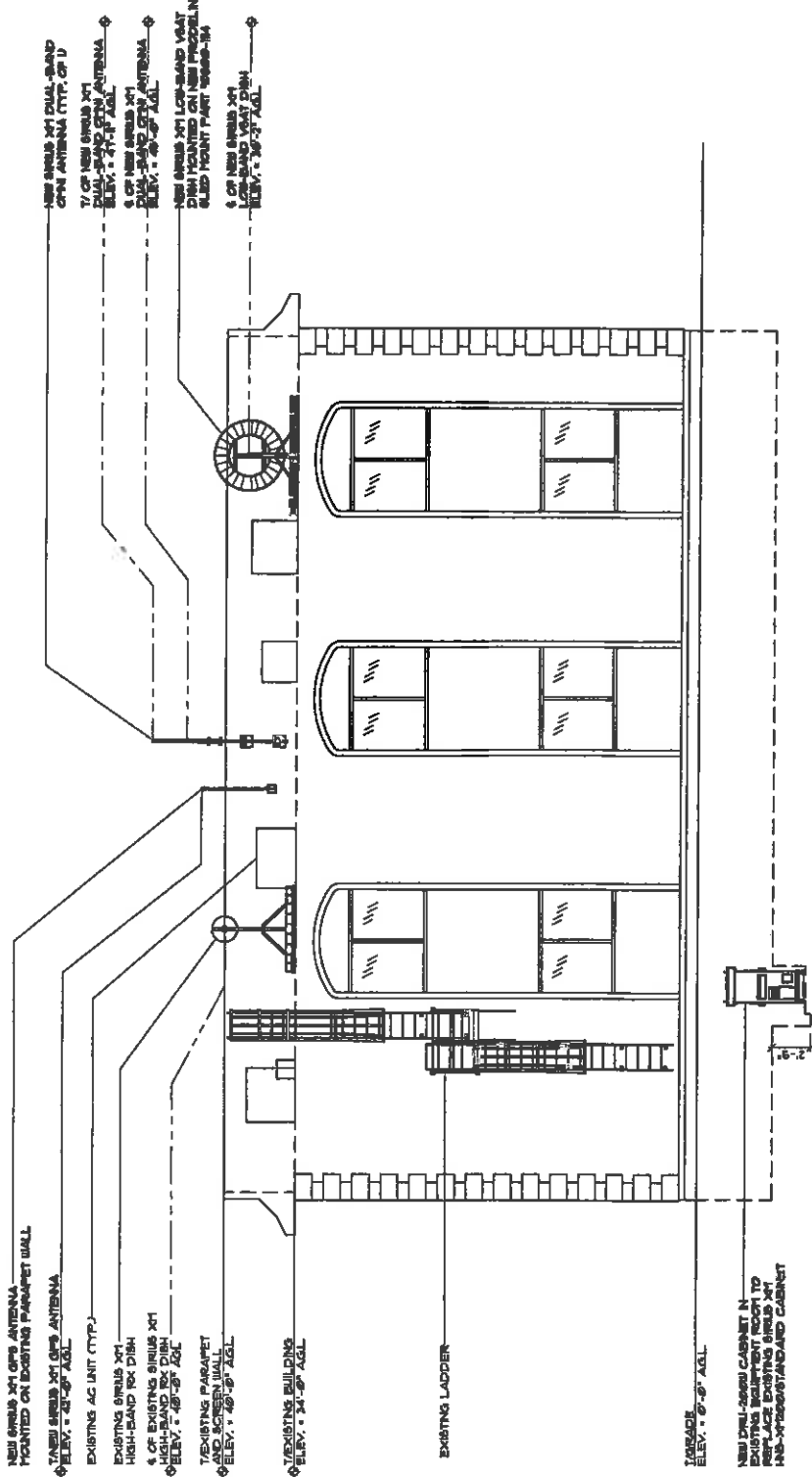
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## **B Appendix – Reference Documents**



- STRUCTURAL NOTES:**
1. STRUCTURAL CALCULATION PREPARED BY FULLERTON ENGINEERING CONSULTANTS, CONTRACTOR TO COORDINATE WITH SIRIUS XT1 REPRESENTATIVE TO OBTAIN A COPY.
  2. CONTRACTOR TO REFER TO TOWER STRUCTURAL CALCULATIONS FOR ADDITIONAL LOADS. NO ERECTION OF STRUCTURE TO BE MADE WITHOUT APPROVAL OF STRUCTURAL ENGINEER.

**B2**



**Fullerton Engineering**  
 9800 W. BROWN AVE. SUITE 200  
 ROSEMONT, ILLINOIS 60018  
 TEL: 815-375-0200  
 FAX: 815-375-0208  
 www.FullertonEngineering.com

**Fullerton Engineering**  
 8800 BRANTON DRIVE SUITE A  
 JESSUP, MARYLAND 20794  
 PHONE: 301-336-1854  
 FAX: 301-336-3322

NO.	DATE	DESCRIPTION	BY
1	08/26/2010	ISSUE FOR PERMIT	AS
2	08/26/2010	REVISED PER COMMENTS	AS
3	08/26/2010	REVISED PER COMMENTS	AS
4	08/26/2010	REVISED PER COMMENTS	AS
5	08/26/2010	REVISED PER COMMENTS	AS
6	08/26/2010	REVISED PER COMMENTS	AS
7	08/26/2010	REVISED PER COMMENTS	AS
8	08/26/2010	REVISED PER COMMENTS	AS
9	08/26/2010	REVISED PER COMMENTS	AS
10	08/26/2010	REVISED PER COMMENTS	AS
11	08/26/2010	REVISED PER COMMENTS	AS
12	08/26/2010	REVISED PER COMMENTS	AS
13	08/26/2010	REVISED PER COMMENTS	AS
14	08/26/2010	REVISED PER COMMENTS	AS
15	08/26/2010	REVISED PER COMMENTS	AS
16	08/26/2010	REVISED PER COMMENTS	AS
17	08/26/2010	REVISED PER COMMENTS	AS
18	08/26/2010	REVISED PER COMMENTS	AS
19	08/26/2010	REVISED PER COMMENTS	AS
20	08/26/2010	REVISED PER COMMENTS	AS

**Belmont**  
 200 PALMYRA AVE  
 BELMONT, CA 94002  
 SHEET NAME  
**SITE ELEVATION**  
 SHEET NUMBER  
**C-3**

**SITE ELEVATION** SCALE: NTS 1



Help



Versions

RCRF



<b>* Date:</b> 06/22/2012	Primary Site	<b>* Colocation</b>	Secondary Site		
Site ID	* SFX009C	Keep Site	SFX_40-22	SFX_40-22	2 Geo Collocation
Address	2130 Ralston Ave.				
<b>City:</b> Belmont	<b>State:</b> California	<b>Zip:</b> 94002			
Lat	37° 30' 41.677" N37.51157700				
Lon	122° 17' 49.031" W-122.29695300				
Site Type?	* <b>Type:</b> High Band	Core Site?	No	Colocation?	Yes

Existing RF Configuration



High Band	Antenna Type	Antenna Gain	Azimuth (TN)	Downtilt	AGL (ft)	Cable Type	Cable Length	EIRP (Watts)
	TA-2350-DAB-T2	10.0	0	0	35	LDF7-50	160	196
	--Not Selected--							
	--Not Selected--							
	--Not Selected--							
Low Band	Antenna Type	Antenna Gain	Azimuth	Downtilt	AGL (ft)	Cable Type	Cable Length	EIRP (Watts)
	--Not Selected--							
	--Not Selected--							
	--Not Selected--							
	--Not Selected--							

New RF Configuration



	RF Divider (2-way / 3-way)	Diplexer	Antenna Model	Antenna Gain	Azimuth (TN)	Mechanical Downtilt	RCRF Estimate AGL Rad (ft)	Cable Type	Cable Length (ft)	~ EIRP (Watts)
Sector 1 High Band	--Not Selected--	Yes	TA-2350-DAB-L-T2	10.0	0	0	46	Existing	Existing	196
Sector 1 Low Band	--Not Selected--	Yes	--Not Selected--					--Not Selected--		196
Sector 2 High Band	--Not Selected--	Unspecified	--Not Selected--					--Not Selected--		
Sector 2 Low Band	--Not Selected--	Unspecified	--Not Selected--					--Not Selected--		
Sector 3 High Band	--Not Selected--	Unspecified	--Not Selected--					--Not Selected--		
Sector 3 Low Band	--Not Selected--	Unspecified	--Not Selected--					--Not Selected--		
Sector 4 High Band	--Not Selected--	Unspecified	--Not Selected--					--Not Selected--		



Sector --Not Selected-- Unspecified --Not Selected-- --Not Selected--  
 4 Low Band  
 Low Band Equipment DRU-200W New High Band Equipment DRU-200W New  
 Type  
 POTS No  
 (telephone) required

**Divider and Diplexer Quantity**



Quantity	Type
Divider	--Not Selected--
Divider	--Not Selected--
Diplexer	1 Diplexer

**GPS**



Antenna Type	Cable Type	Cable Length
GPS Trimble (57860-10)	RG6-QS	150

**VSAT/RX Dish**



RCRFCalculations:	VSAT/Rx Antenna	New/ Existing	Orientation (approx. TN)(DEG):	Approx. look Angle (Deg)	Cable Type	Cable Length (ft)
No						
High Band	TA-2324-LHCP	Existing	129	32	Existing	Existing
Low Band	1183 without deicing	New	145	40	LMR-400	160

**Notes**



Please Make sure location found for VSAT has clearance to the sky bearings listed above.

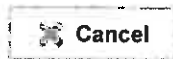
-Replace HB repeater with DRU-200 W - minimum space required (LxWxH)- 9' x 8' x 7'

-Replace existing Omni antenna with a wider band antenna.

-Will need DRU diplexer to combine both HB & LB on existing cable & one Antenna

Build to 2GEO on LB and HB  
 Diversity Antenna is not required

Rooftop





Sirius XM Radio Inc.  
1221 Avenue of Americas  
New York, New York, 10020  
T: 212-584-5100  
F: 212-584-5200  
siriusxm.com

April 21, 2014

City of Belmont Resident

RE: SiriusXM Radio  
Proposed Modification to Existing Radio Facility  
→ Site Address: 2130 Ralston Avenue, Belmont, CA

On behalf of Sirius XM Radio ("Sirius XM"), we respectfully request a modification to the existing Conditional Use permit for an existing radio communications facility at the above referenced location pursuant to Section 25 of the City of Belmont Zoning Ordinance and any other relief deemed by the Department to be required under applicable provisions of the Zoning Ordinance.

The proposed modification at this site is part of Sirius XM's nationwide effort to upgrade its legacy repeater networks to provide similar service to subscribers on the Sirius and XM networks, despite those networks' significantly different and incompatible technologies. The proposed modification is expected to maintain service delivery and ensure subscribers receive a uniform level of service from their respective networks.

#### Description of Proposed Installation

This is a modification of an existing wireless communication facility. The scope of work is to remove and replace (1) One existing antenna, install (1) One new dish antenna on existing rooftop, and (1) One new GPS antenna on existing rooftop, remove the existing equipment cabinet and install a new equipment cabinet in the existing equipment room. Please see attached enlarged site plan and photo-simulations.

The installation requires only electric and telephone utilities and, once completed, will require, on average, one to two monthly maintenance visits by qualified company technicians. No water, sewer or other municipal services are required. Please also note that no permanent backup generator is included as part of the installation.

If you have any questions regarding this proposed modification, please contact Tiffany McClurg by May 9<sup>th</sup>, 2014, at 206.719.1639, [tmcclurg@ptswa.com](mailto:tmcclurg@ptswa.com), or by mail at 506 2<sup>nd</sup> Ave #210, Seattle, WA 98104. Or you may contact Rob Gill at the City of Belmont, One Twin Pine Lanes, Belmont, CA, 94002. 650.598.4204 or [rgill@belmont.gov](mailto:rgill@belmont.gov).

Sincerely,

Agent for Sirius XM

# Wireless Facility Engineering Review

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**Sirius XM Application for Modification of Site (SFX009C/SFX\_40-22)  
2130 Ralston Avenue, Belmont, CA**



**6/3/2014**



**RCC Consultants, Inc. - Western Regional Office  
266 E. 33<sup>rd</sup> Street, San Bernardino, CA 92404  
909.881.0250 Tel, 909.881.8979 Fax**

**Sirius XM Application for Modification of Site (SFX009C/SFX\_40-22)  
2130 Ralston Avenue, Belmont, CA**

**Introduction**

RCC Consultants, Inc. has been engaged by the City of Belmont to conduct a peer review, consistent with recognized industry standard practices, of the proposal by Sirius XM to modify an existing wireless site at 2130 Ralston Avenue, Belmont, CA.

**Surrounding Environment**

The site is located on the northeast corner of Ralston Avenue and Pullman Avenue in an E-1 zone. The immediate area to the North is a single-family residential neighborhood.



**Figure 1 - Aerial View of the Vicinity**

**Background**

Sirius XM holds Federal Communications Commission (FCC) licenses in the Satellite Digital Audio Radio Service (SDARS). On July 29, 2008, Sirius Satellite Radio, Inc., acquired a competing

service operated by XM Satellite Radio Holdings, Inc. Since then, Sirius XM has undertaken efforts to technically integrate the two services, which requires operation in two distinct segments of the 2300 MHz radio band.

Although Sirius XM is primarily a satellite broadcaster, it operates terrestrial repeaters to fill in coverage gaps. A repeater station typically uses a VSAT satellite dish antenna to receive the satellite broadcast and then rebroadcasts the signal via a terrestrial-based transmitter feeding an omnidirectional dipole antenna.

### **Proposed Site Modifications**

This proposal calls for the addition of a second VSAT dish antenna to received programming from the former XM satellite network and rebroadcast the signal from the proposed site. The satellite antenna is proposed to be installed in the north-west corner of the upper roof. It has a diameter of 1.8 meters and will be installed behind the parapet with its centerline at 36'-2" above ground level.

Sirius XM is also proposing to replace the existing omnidirectional antenna with a new antenna, Model TA-2350-DAB-L-T2, mounted at 45' above ground level to the antenna centerline. The antenna is approximately 69" in length with a diameter of 2.25". It incorporates a 2 degree electrical downtilt. A new equipment cabinet will be installed inside the existing equipment room.

### **Methodology**

In conducting a peer review, RCC reviews and analyzes site application documents against wireless industry standards and best practices. In this case, RCC considered the application and supplemental application materials submitted by Sirius XM, including the construction drawing package, dated 1/15/2014 and the RF study by Pacific Telecom Services (PTS), dated 3/6/2014.

### **Justification for the Site Modifications**

As mentioned above, the site modification is driven by the need for Sirius XM to integrate technical assets of the former XM network. As justification for the site modifications, the applicant submitted six maps, attachment as Exhibits 1 through 6.

1. Exhibit 1 depicts the modeled terrestrial coverage provide by the site alone, not showing coverage from adjacent sites.
2. Exhibit 2 depicts the coverage from adjacent sites without the signal from the proposed site.
3. Exhibit 3 depicts modeled combined coverage with the subject site as well as adjacent sites.
4. Exhibit 4 is a larger scale map that depicts the modeled coverage from the subject site alone, without adjacent sites.
5. Exhibit 5 is a large scale map showing predicted coverage of the area with the subject site turned off.
6. Exhibit 6 is a large scale map showing predicted combined overage of the area with the subject site and adjacent sites turned on.

Based on our examination of the coverage maps provided, it appears that Siruis XM would have a gap in terrestrial based coverage in this area without the subject site activated.

### **Radio Frequency Emissions Safety**

RCC has reviewed the RF study by Pacific Telecom Services (PTS), dated 3/6/2014, prepared on behalf of Sirius XM and concurs with its conclusion that the proposed antenna installation will comply with the Federal Communications Commission's guidelines for radio frequency emissions exposure as detailed in their Office of Engineering & Technology Bulletin No. 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields," August 1997 ("OET Bulletin 65"). The PTS report takes into consideration the systems by other carriers present on the building in addition to its own existing and proposed equipment. Based on the OET Bulletin 65, the Maximum Permissible

Exposure ("MPE") for the general population/uncontrolled exposure is 1 mW/cm<sup>2</sup> in the SDARS spectrum utilized by Sirius XM. Permissible levels for exposure under occupational conditions, such as may be encountered by maintenance personnel, are five times higher.

### **Summary & Conclusions**

RCC Consultants, Inc. is of the opinion that:

- The proposed site modification is necessary for Sirius XM to integrate technical resources of the former XM satellite network.
- The proposed design is considered reasonable and consistent with industry best practices to augment coverage of the satellite broadcast service via terrestrial repeater signals.
- The proposed installation will meet Federal Communications Commission guidelines pertaining to radio frequency emissions exposure to the general public.

Date: June 3, 2014

*Dieter J. Preiser*

---

Dieter J. Preiser, PMP

**REPEATER COVERAGE MAPS  
EXHIBITS 1 through 6**

# Exhibit 1

## Belmont, CA- Predicted Local Coverage SFX009C



## Exhibit 2

### Belmont, CA- Predicted Local Coverage SFX009C Off



# Exhibit 3

## Belmont, CA- Predicted Local Coverage All Sites



# Exhibit 4

## Belmont, CA- Predicted Area Coverage SFX009C



## Exhibit 5

### Belmont, CA- Predicted Area Coverage SFX009C Off



## Exhibit 6

### Belmont, CA- Predicted Area Coverage All Sites

