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DATE: August 25, 2010

TO: Chairman and Members of the Community Development Commission

FROM: Economic and Community Development Department

SUBJECT: **A RESOLUTION APPROVING AN AMENDMENT TO A CONDITIONAL USE PERMIT (C-202-93) TO ADD TELECOMMUNICATION FACILITIES TO AN EXISTING COMMERCIAL OFFICE BUILDING LOCATED AT 1155 SPORTSFISHER WAY- CLEARWIRE - APPLICANT- CLEARWIRE TELECOMMUNICATIONS**

**SYNOPSIS**

The item under consideration is an amendment to Conditional Use Permit (C-202-93) for the addition of telecommunication facilities to an existing commercial office building located at 1155 Sportsfisher Way. Staff is recommending that the Commission approve the project and adopt the resolution as attached.

**BACKGROUND**

On May 26, 1981, the Commission adopted Resolution No. R-6-81 which approved the construction of a two-story, 35-foot-high, 8,600-square-foot office building situated on an 11,000 square foot site. The subject site is located at 1155 Sportsfisher Way.

On January 4, 1994, the Commission adopted Resolution No. 94-C-01, approving a conditional use permit and variation to allow for a minor multi-user telecommunication facility for transmitting and receiving antennas. The use permit allowed for a variety of telecommunications assets, including paging, two-way radio, PCS cellular and Public Safety and Governments Communications with a maximum of 22 antennas and 2 satellite dish mounts. It should be noted that the Commission also approved a variation because the applicant provided 3 feet of screening when 4 feet is required.

On January 20, 1998, the Commission adopted Resolution No. 98 C-08 allowing an additional 6 antennas for a total of 28 antennas and 2 satellite dish mounts.

**Land Use and Zoning:** The subject site is located within Subdistrict 8B of the "D" Downtown District. Subdistrict 8B is primarily intended to provide for a mix of hospital and medical uses, office development, interspersed with residential development in response to market demand.

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**Project Description:** The project proposes additional telecommunication facilities including 6 panel antennas, 3 directional antennas, 5 DAP head units, 4 GPS antennas and 1 equipment cabinet approximately 3' X 2' to be installed at ground level within the garage. Currently, the existing building has 28 antennas and 2 satellite dish mounts situated on the exterior elevations of the building and the roof. The following is a breakdown of the proposed telecommunication facilities and the locations of the building that the equipment will be mounted on:

West Elevation

2-wi max antennas and 1 directional antenna to be attached to the building behind a 8-foot X 6-foot screen box painted and textured to match the exterior of the existing building. The screen box extends approximately 3 feet away from the building. In addition a GPS antenna will be mounted on the roof and extends approximately 6" above the roof parapet.

East Elevation

2-wi max antennas and 2 DAP Head units to be attached to the building behind a 10-foot X 6-foot "screen box" painted and textured to match the exterior of the existing building. The screen box extends approximately 3 feet away from the building. In addition a GPS antenna will be mounted on the roof and extends approximately 6" above the roof parapet

South Elevation

2-wi max antennas and 2 DAP Head unit to be attached to the building behind a 6-foot X 6-foot "screen box" painted and textured to match the exterior of the existing building. The screen box extends approximately 2 feet away from the building. In addition a GPS antenna will be mounted on the roof and extends approximately 6" above the roof parapet

North Elevation

A GPS antenna will be mounted on the roof and extends approximately 6" above the roof parapet

**Conditional Use Permit:** Condition No. 11 of Resolution No. 98 C-08 requires that, "Any change in the use or any change in the structure will require a revision to the Conditional Use Permit or a new Conditional Use Permit".

**Environmental Determination:** An environmental report (radio frequency study) was prepared for this project (see attachment). Based on the analysis of the environmental report, a Certificate of Exemption has been prepared for the project (Article 19 Section 15301(e)). Under the provisions of the California Environmental Quality Act, the

Community Development Commission will consider the exemption during its hearing on the project.

### **ANALYSIS**

Staff's analysis focused on the effects the additional telecommunication facilities will have on the aesthetics of the existing building in addition to the surrounding neighborhood and the consistency with the underlying Redevelopment Plan and Zoning Ordinance.

**Section 301 Redevelopment Plan:** Requires eliminating blight and/or ensuring as far as possible that the causes of blighting conditions will be eliminated. The proposed locations of the additional communications facilities on the existing commercial office building, do not increase nor cause to increase blight in that area and/or the surrounding neighborhood.

Staff believes the project as designed, with the "screen box" painted and texture to match the exterior of the existing building, adequately screens the telecommunication facilities from public view. The proposed telecommunication facilities as designed, are not detrimental to the aesthetics of either the existing commercial office building nor to the surrounding neighborhood. It should be noted that the project has been conditioned to remove the existing non-utilized telecommunication facilities.

### **COMMISSION OR COMMITTEE REPORTS**

The Redevelopment Advisory Committee (RAC) reviewed the project at its July 7, 2010, meeting and approved the project unanimously with one added condition which is as follows:

The applicant shall submit a field testing report after installation of the telecommunication facilities to demonstrate that the project will not jeopardize the public safety from exposure to excessive radio frequency energy.

This condition has been added to the resolution.

### **FISCAL IMPACT**

Not applicable.

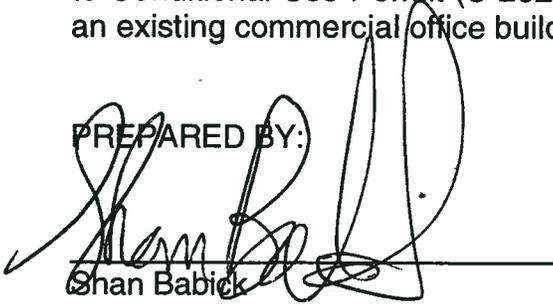
### **CITY ATTORNEY'S ANALYSIS**

Pursuant to Oceanside Zoning Ordinance Article 41, Section 4102 the Community Development Commission is authorized to hold a public hearing on this project's applications. Consideration of the project should be based on the evidence presented at the public hearing. After conducting the public hearing, the Commission shall approve, conditionally approve, or disapprove the project. The resolution has been reviewed and approved as to form by the City Attorney.

**RECOMMENDATION**

Staff recommends that the Commission adopt the resolution approving an amendment to Conditional Use Permit (C-202-93) for the addition of telecommunication facilities on an existing commercial office building located at 1155 Sportsfisher Way.

PREPARED BY:



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Shan Babick  
Associate Planner

SUBMITTED BY:



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Peter A. Weiss  
Executive Director

REVIEWED BY:

Michelle Skaggs Lawrence, Deputy City Manager  
Jane McVey, Economic and Community Development Director  
Kathy Baker, Redevelopment Manager



**EXHIBITS/ATTACHMENTS**

1. Resolution
2. Site Plan/Elevations
3. Notice of Exemption
4. Report Dated January 20, 1998
5. Environmental Report

1 RESOLUTION NO. 10-

2 A RESOLUTION OF THE COMMUNITY DEVELOPMENT  
3 COMMISSION OF THE CITY OF OCEANSIDE APPROVING  
4 AN AMENDMENT TO CONDITIONAL USE PERMIT (C-202-  
5 93) TO ADD TELECOMMUNICATION FACILITIES TO AN  
6 EXISTING COMMERCIAL OFFICE BUILDING LOCATED AT  
7 1155 SPORTSFISHER WAY - APPLICANT: CLEARWIRE  
8 TELECOMMUNICATIONS

9 WHEREAS, on August 25, 2010, the Community Development Commission held its  
10 duly noticed public hearing for an application for an amendment to Conditional Use Permit (C-  
11 202-93) for the installation of a telecommunications facility on an existing commercial office  
12 building located at 1155 Sportsfisher Way;

13 WHEREAS, the Redevelopment Advisory Committee (RAC) of the City of Oceanside  
14 did, on July 7, 2010, review and recommend approval of an amendment to Conditional Use  
15 Permit (C-202-93);

16 WHEREAS, a Categorical Exemption was prepared by the Resource Officer of the City  
17 of Oceanside for this application pursuant to the California Environmental Quality Act of 1970  
18 (CEQA) and the State Guidelines implementing the Act. The project is considered an infill  
19 development and will not have a detrimental effect on the environment based on Article 19  
20 Section 15301(e) of CEQA;

21 WHEREAS, pursuant to Government Code §66020(d)(1), NOTICE IS FURTHER  
22 GIVEN that the 90-day period to protest the imposition of any fee, dedication, reservation, or  
23 other exaction described in this resolution begins on the effective date of this resolution and any  
24 such protest must be in a manner that complies with Section 66020; and

25 WHEREAS, pursuant to Oceanside Zoning Ordinance §4603, this resolution becomes  
26 effective upon its adoption.

27 NOW, THEREFORE, the Community Development Commission of the City of  
28 Oceanside does resolve as follows:

FINDINGS:

For the Conditional Use Permit:

1. The proposed telecommunication facility is consistent with the land use objectives  
for the Subdistrict 8B commercial land use district in that the operation of a telecommunication

1 facility coupled with the conditions of the Use Permit will not be detrimental to the surrounding  
2 neighborhood.

3 2. The proposed restrictions for the conditional use are consistent with the General  
4 Plan and Redevelopment Plan in that they have been written to restrict the telecommunication  
5 operation to ensure neighborhood compatibility. In addition, the operation of the conditional  
6 use will not be detrimental to the public health, safety or welfare of persons residing or working  
7 in or adjacent to the subject site.

8 3. The conditional use is subject to and must comply with all local conditions and  
9 conditions listed within this resolution as well as all state, federal and any other applicable  
10 regulatory agencies or permit authorities.

11 The amendment to Conditional Use Permit (C-202-93) is hereby approved subject to the  
12 following conditions:

13 **Building:**

- 14 1. Applicable Building Codes and Ordinances shall be based on the date of submittal for  
15 Building Division plan check. (Currently the 2007 California Building Code and 2007  
16 California Electrical Code)
- 17 2. The granting of approval under this action shall in no way relieve the applicant from  
18 compliance with all State and local building codes.
- 19 3. All electrical, communication, CATV, etc. service lines within the exterior lines of the  
20 property shall be underground (City Code Sec. 6.30).
- 21 4. The building plans for this project are required by State law to be prepared by a licensed  
22 architect or engineer and must be in compliance with this requirement prior to submittal for  
23 building plan review.
- 24 5. The developer shall monitor, supervise and control all building construction and supporting  
25 activities so as to prevent these activities from causing a public nuisance, including, but not  
26 limited to, strict adherence to the following:
  - 27 a) Building construction work hours shall be limited to between 7:00 a.m. and 6:00  
28 p.m. Monday through Friday, and on Saturday from 7:00 a.m. to 6:00 p.m. for  
work that is not inherently noise-producing. Examples of work not permitted on  
Saturday are concrete and grout pours, roof nailing and activities of similar

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noise-producing nature. No work shall be permitted on Sundays and Federal Holidays (New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, Christmas Day) except as allowed for emergency work under the provisions of the Oceanside City Code Chapter 38 (Noise Ordinance).

b) The construction site shall be kept reasonably free of construction debris as specified in Section 13.17 of the Oceanside City Code. Storage of debris in approved solid waste containers shall be considered compliance with this requirement. Small amounts of construction debris may be stored on-site in a neat, safe manner for short periods of time pending disposal.

6. A complete structural analysis of the existing buildings vertical and lateral load bearing systems is required to verify that the new equipment loads will not overstress the existing structure(s).

**Fire:**

7. Stationary storage battery systems having an electrolyte capacity of more than 50 gallons for flooded lead acid, nickel cadmium and valve regulated lead acid, or 1,000 pounds for lithium-ion, used for facility standby power, emergency power or uninterrupted power supplies, shall comply with Section 608 of the CDC current edition and Table 608.1.

8. Cell sites are required to have a final inspection by the Fire Department.

9. If quantity of electrolyte solution is 10 gallons or greater, visible hazard identification signs as specified in NFPA 704 shall be placed at the entrance to the battery storage room.

10. The Fire Department will require the quantity of lead acid batteries proposed. In addition, the electrolyte volume will need to be provided for the batteries. Please indicate the amount on the plan.

**Planning:**

11. This amendment to Conditional Use Permit (C-202-93) shall expire on August 25, 2013, unless implemented as required by the Zoning Ordinance.

12. This amended Conditional Use Permit approves telecommunication facilities as depicted on the plans and exhibits presented to the Community Development Commission for review and approval. No deviation from these approved plans and exhibits shall occur without Economic and Community Development Department approval.

- 1 13. The applicant, permittee or any successor-in-interest shall defend, indemnify and hold  
2 harmless the City of Oceanside, its agents, officers or employees from any claim, action  
3 or proceeding against the City, its agents, officers, or employees to attack, set aside, void  
4 or annul an approval of the City, concerning amended Conditional Use Permit (C-202-  
5 93). The City will promptly notify the applicant of any such claim, action or  
6 proceeding against the City and will cooperate fully in the defense. If the City fails to  
7 promptly notify the applicant of any such claim, action or proceeding or fails to  
8 cooperate fully in the defense, the applicant shall not, thereafter, be responsible to  
9 defend, indemnify or hold harmless the City.
- 10 14. A covenant or other recordable document approved by the City Attorney shall be  
11 prepared by the applicant developer and recorded prior to the issuance of building  
12 permits. The covenant shall provide that the property is subject to this resolution, and  
13 shall generally list the conditions of approval.
- 14 18. Prior to the issuance of building permits, compliance with the applicable provisions of  
15 the City's anti-graffiti Ordinance (Ordinance No. 93-19/Section 20.25 of the City Code)  
16 shall be reviewed and approved by the Economic and Redevelopment Department.  
17 These requirements, including the obligation to remove or cover with matching paint all  
18 graffiti within 24 hours, shall be recorded in the form of a covenant affecting the subject  
19 property.
- 20 19. Prior to the transfer of ownership and/or operation of the site, the owner shall provide a  
21 written copy of the applications, staff report and resolutions for the project to the new  
22 owner and/or operator. This notification's provision shall run with the life of the project  
23 and shall be recorded as a covenant on the property.
- 24 20. Failure to meet any conditions of approval for this development shall constitute a  
25 violation of the amended Conditional Use Permit (C-202-93).
- 26 21. This Conditional Use Permit shall be called for review by the Community Development  
27 Commission if complaints are filed and verified as valid by the Code Enforcement Office  
28 concerning the violation of any of the approved conditions.
22. Upon one year of facility operation, and upon any change-out of facility equipment, the  
permittee(s) shall provide to the Economic Development Director a statement of radio-

- 1 frequency radiation output and output compliance with the limitations of governing  
2 licensing authorities.
- 3 23. The permittee(s) shall exercise a good-faith effort to incorporate the best available  
4 equipment technology to effect a reduction in the visual presence of the approved  
5 antenna and facility equipment. The change-out and retrofit of equipment shall be  
6 conducted by the permittee(s) after such equipment becomes available and exhibits  
7 common use at similar facilities. Upon the City's request and discretion, the  
8 permittee(s) shall be required to provide an independently prepared technical analysis  
9 demonstrating compliance with this condition. The permittee(s) inability to demonstrate  
10 the use of current technologies may be grounds for the revocation of the Conditional Use  
11 Permit.
- 12 24. The permittee(s) shall exercise a good-faith effort to cooperate with other  
13 communication providers and services in the operation of a co-user facility, provided  
14 such shared usage does not impair the operation of the approved facility. Upon the  
15 City's request and discretion, the permittee(s) shall provide an independently prepared  
16 technical analysis to substantiate the existence of any practical technical prohibitions  
17 against the operation of a co-use facility. The permittee(s)' non-compliance with this  
18 requirement may be grounds for the revocation of the Conditional Use Permit.
- 19 25. The approved communication facility shall be subject to, and governed by, any and all  
20 licensing authority by any governmental agency having jurisdiction. The City's local  
21 approval of a communication facility shall not exempt the permittee(s) from any such  
22 pre-emptive regulations.
- 23 26. The final design, aesthetic devices, and construction of the facility shall be in accordance  
24 with the plans representing the approved project and the conditions of approval. In  
25 addition, the final construction plans shall demonstrate consistency with the plans and  
26 other exhibit materials approved by the Community Development Commission. These  
27 requirements shall be shown and demonstrated on the plans submitted for building  
28 permits and shall be reviewed and approved by the Economic and Community  
Development Director prior to the issuance of building permits.

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27. Any apparent inconsistency resulting from the construction of the approved facility shall be a basis for a call for the review of the Conditional Use Permit.

28. Upon termination of the approved facility use, the permittee shall be responsible to remove the entire facility from the premises.

29. No metallic and/or reflective paints or surfaces shall be permitted.

30. All existing non-functioning and/or non-utilized exterior telecommunications equipment shall be removed prior to issuance of building permit.

31. The applicant shall submit a field testing report after installation of the telecommunication facilities to demonstrate that the project will not jeopardize the public safety from exposure to excessive radio frequency energy.

PASSED AND ADOPTED by the Oceanside Community Development Commission of the City of Oceanside this \_\_\_\_\_ day of \_\_\_\_\_ 2010 by the following votes:

AYES:

NAYS:

ABSENT:

ABSTAIN:

\_\_\_\_\_  
Chairman

ATTEST:

\_\_\_\_\_  
Secretary

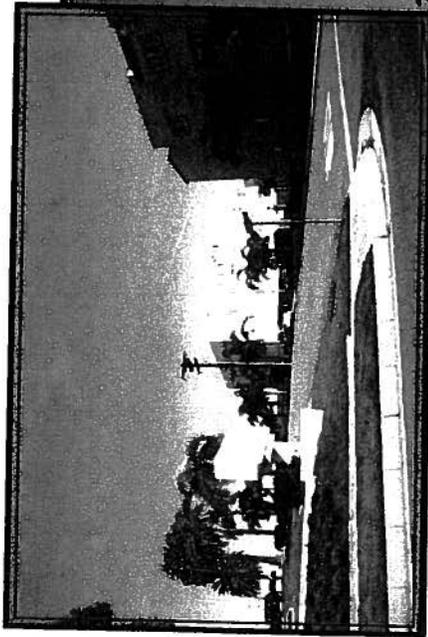
APPROVED AS TO FORM:  
OFFICE OF THE CITY ATTORNEY

by Bart D. Hamilton, ASST.  
General Counsel

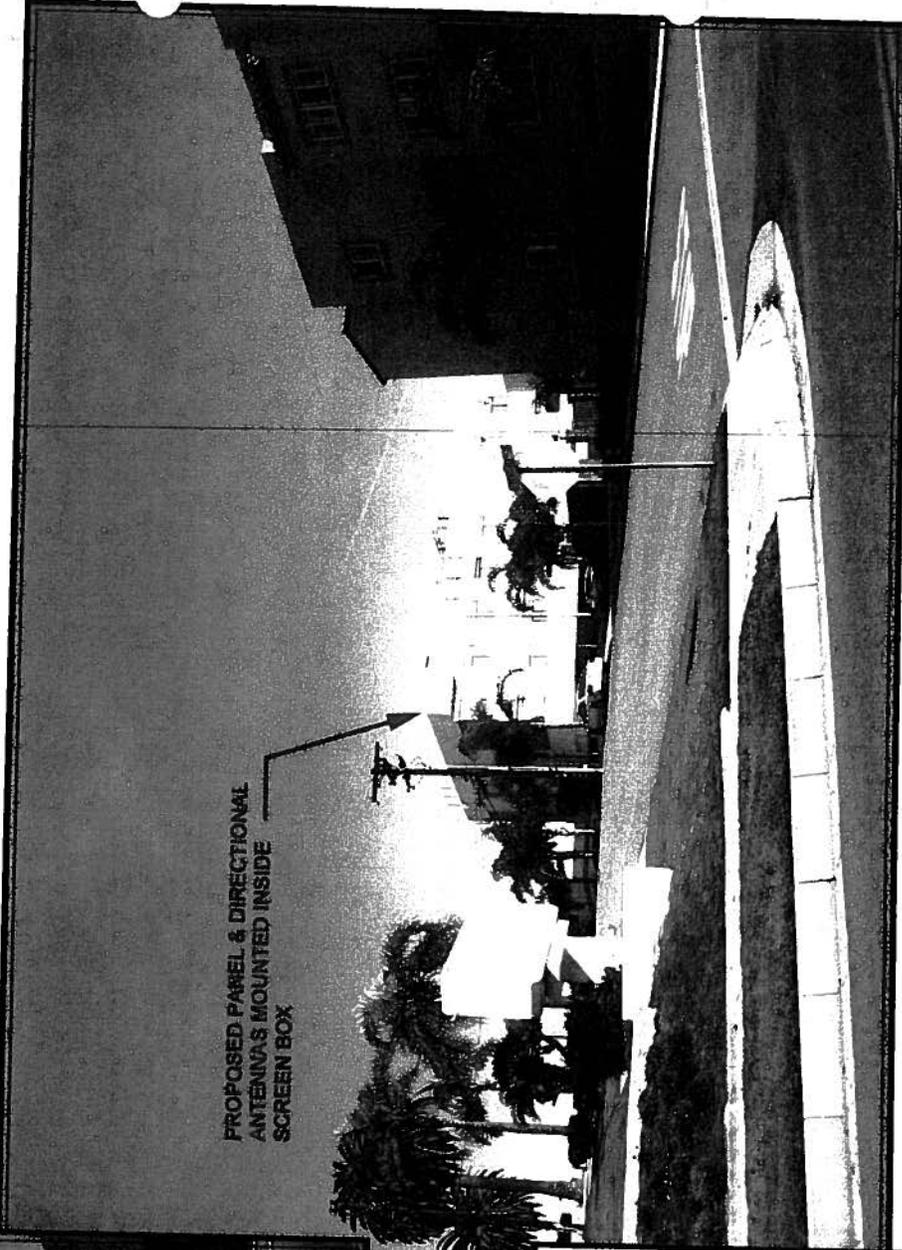
1155 Sportfisher Drive  
Oceanside, CA 92054

CA-SDG5162-C

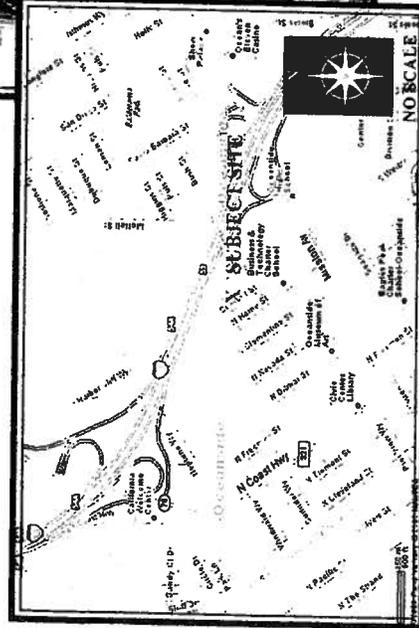
INSTALLATION AS SEEN LOOKING NORTHEAST FROM HORNE & SPORTFISHER



SITE PRIOR TO INSTALLATION



PROPOSED PANEL & DIRECTIONAL ANTENNAS MOUNTED INSIDE SCREEN BOX



VICINITY RECEIVED

SITE AFTER INSTALLATION

RECEIVED

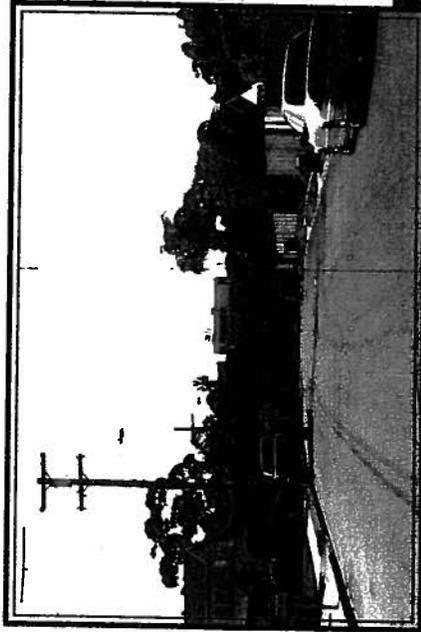
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OCEANSIDE  
REDEVELOPMENT

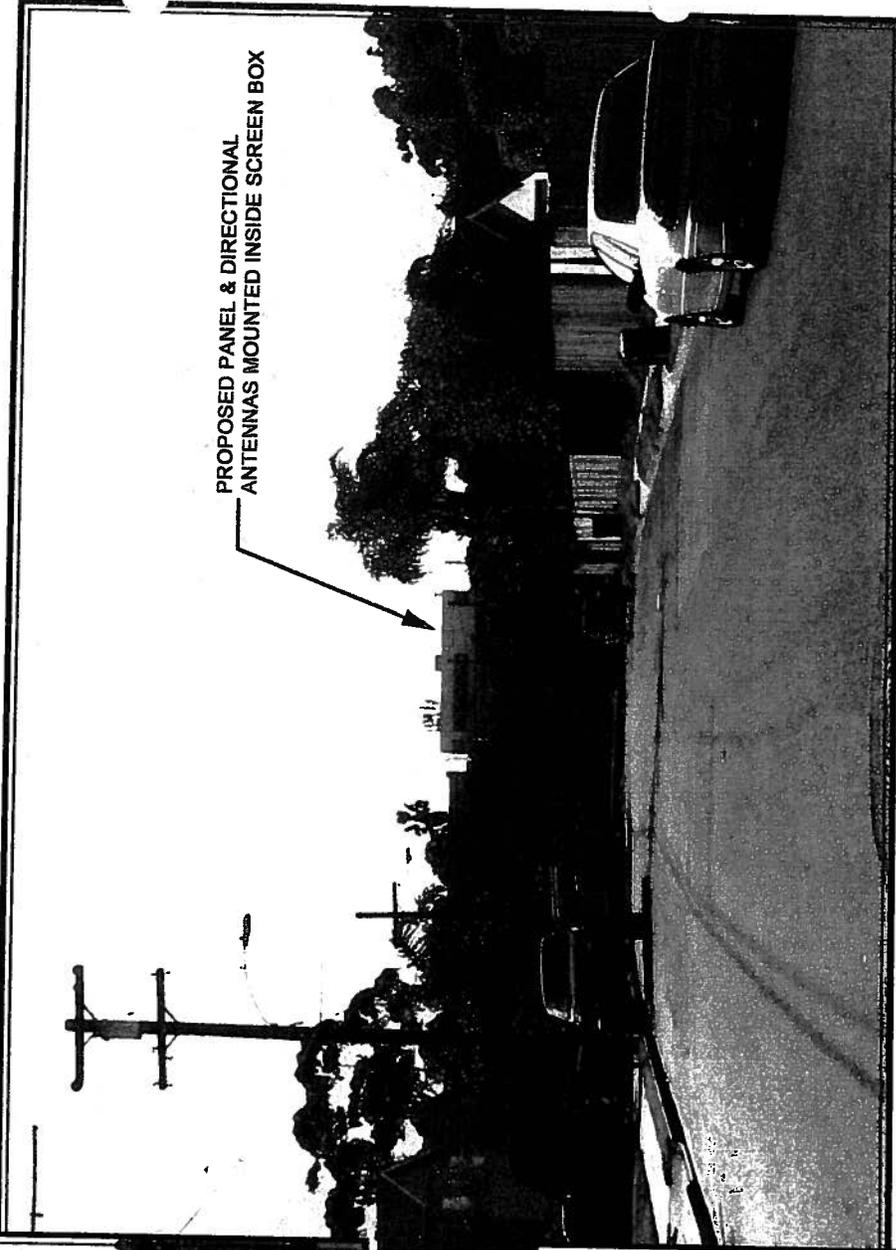
1155 Sportfisher Drive  
Oceanside, CA 92054

CA-SDG5162-C

INSTALLATION AS SEEN LOOKING SOUTHWEST FROM W. PULS STREET

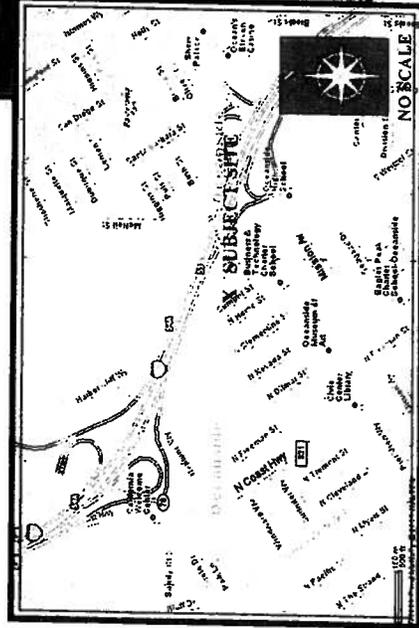


SITE PRIOR TO INSTALLATION



PROPOSED PANEL & DIRECTIONAL  
ANTENNAS MOUNTED INSIDE SCREEN BOX

SITE AFTER INSTALLATION



VICINITY MAP

CITY OF OCEANSIDE  
PLANNING DEPARTMENT

## NOTICE OF EXEMPTION

TO:  RECORDER/COUNTY CLERK  
COUNTY OF SAN DIEGO  
P.O. BOX 1750  
SAN DIEGO, CA 92112-4147

**PROJECT TITLE AND FILE NUMBER:**

AMENDMENT TO CONDITIONAL USE PERMIT (C-202-93) FOR THE ADDITION OF TELECOMMUNICATION FACILITIES TO AN EXISTING COMMERCIAL OFFICE BUILDING LOCATED AT 1155 SPORTSFISHER WAY

**PROJECT LOCATION - SPECIFIC:**  
1155 Sporsfisher Way

**PROJECT LOCATION - GENERAL:**  
Mission and Home Streets

AMENDMENT TO CONDITIONAL USE PERMIT (C-202-93)

**DESCRIPTION OF NATURE, PURPOSE AND BENEFICIARIES OF PROJECT:**

Addition of telecommunication facilities to an existing commercial office building located at 1155 Sportsfisher Way

**NAME OF PUBLIC AGENCY APPROVING PROJECT:**

City of Oceanside

**NAME OF PERSON(S) OR AGENCY CARRYING OUT PROJECT:**

Clearwire

Mike Morganson

7578 Gibraltar Street #3

Carlsbad, CA 92009

(760) 585-5104

Exempt Status per the Guidelines to Implement the California Environmental Quality Act (CEQA)  
(Public Resources Code Section 21000 et. al.):

NOT SUBJECT TO CEQA PER THE GENERAL RULE, SECTION 15061(B)(3)

STATUTORY EXEMPTION PER ARTICLE 18, SECTION(S)

CATEGORICAL EXEMPTION PER ARTICLE 19, SECTION 15301(e)

**REASONS WHY PROJECT IS EXEMPT:**

The proposed project is an amendment to a Conditional Use Permit located at 1155 Sportsfisher Way. The subject site is less than 5-acres in size, and is an telecommunication equipment addition therefore, it is exempt from environmental review.

Contact Person: Shan Babick, Associate Planner

SIGNATURE

For: Jerry Hittleman, Planning Director

June 22, 2010

DATE

CITY HALL, 300 NORTH COAST HIGHWAY, OCEANSIDE CA 92054, TELEPHONE (760) 435-3354, FAX (760) 722-1057



# STAFF REPORT



**ITEM NO. 8**  
**CITY OF OCEANSIDE**

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DATE: January 20, 1998

TO: Chairman and Members, Community Development Commission

FROM: Redevelopment Department

SUBJECT: **ADOPTION OF A RESOLUTION APPROVING AN AMENDMENT TO AN EXISTING CONDITIONAL USE PERMIT (C-202-93) TO ALLOW FOR ADDITIONAL TRANSMITTING AND RECEIVING ANTENNAS, LOCATED AT 424 SUMMIT STREET, NEXTEL, APPLICANT (V-204-97)**

## **SYNOPSIS:**

The applicant is requesting an amendment to an existing conditional use permit to allow for additional transmitting and receiving antennas to be placed on the north, east and west sides of the building. Staff recommends that the Commission adopt a resolution approving the proposed amendment to the conditional use permit.

## **BACKGROUND:**

On May 26, 1981, the Commission adopted Resolution No. R-6-81 approving the construction of an 8,600 s.f. office building located at 424 Summit Street. The original development plan required a variance due to the lack of five parking spaces and to allow for nine compact parking spaces. The existing 8,600 s.f. office building is situated on an 11,000 s.f. site. The existing two-story building is 35 feet high over at grade parking, with 23 onsite parking spaces.

The surrounding area consists of the Escondido Youth Encounter building located immediately north of the site, commercial uses located south of the site, a proposed fire station located southeast of the site, Interstate 5 located east of the site and single and multi-family residential located mainly west of the site.

The building is located within Subdistrict 8B, which provides for a mix of hospital and medical uses, and office development, interspersed with residential development in response to market demand.

On January 4, 1994, the Commission adopted Resolution No. 94-C-01 approving a conditional use permit and variations to allow for a minor multi-user telecommunications facility for transmitting and receiving antennas. The use permit allowed for a variety of telecommunications assets, including paging, two-way radio, PCS cellular and Public

Safety and Government Communications and a maximum of 22 antenna and satellite dish mounts. Condition No. 6 of Resolution No. 94-C-01 states the following:

"This Conditional Use Permit is granted for the following use only: placement on the roof of a maximum of 22 antenna and dish antenna mounts and the construction of a 94 s.f. equipment room. Any change in the use or any change in the structure will require a revision to the Conditional Use Permit or a new Conditional Use Permit."

It should be noted that the Commission also approved a variation because the applicant provided three feet of screening when four feet is required.

Staff has determined that the project will not have a significant adverse environmental impact. The project will be issued a Certificate of Exemption in accordance with the State Guidelines of the California Environmental Quality Act. The project is located within the coastal zone and is subject to the Local Coastal Program.

### **ANALYSIS:**

The proposed communications facility is designed with a total of nine antennas, three on the east and west sides of the existing building and three antenna to be located on the roof of the building. The antennas are four feet high, one foot wide and about four inches thick. The antennas will be attached to the building façade with mounting hardware or brackets, on the east and west facades. Three antennas will be mounted on the roof and will project a total of four feet above the building parapet (antenna is a total of 7 feet high). The antennas will be painted to match the exterior of the building. The associated radio equipment for the site will be located in an existing office space located on the third floor within the building. The proposed facility will be unmanned, operating 24 hours a day.

The existing conditional use permit for this site allows 22 antennas to be mounted on the rooftop. Presently, there are 19 antennas on the building rooftop. The applicant is proposing to add 9 antennas for a total of 28 antennas.

The height of the building is 35 feet and the Zoning Ordinance limits the height of an antenna to 15 feet. The three will be mounted on the base of the roof where the antenna bracing appurtenances will be screened by the existing 3-foot parapet. Section 3025 D. 3. of the Zoning Ordinance states the following:

"Screening: The structural base of a satellite antenna, including all bracing and appurtenances, but excluding the dish itself, shall be screened from public rights-of-way and adjoining properties by walls, fences, buildings, landscape, or combinations thereof not less than 4 feet high so that the base and support

structure are not visible from beyond the boundaries of the site at a height-of-eye 6 feet or below.”

As noted above, the three foot high parapet adequately screens all of the bracing and appurtenances; however, it is less than the required four foot high screening required as stipulated in Section 3025 D. 3.; therefore a variation is required.

The project has been conditioned that the applicant is required to paint the exterior of the antennas mounted at the side of the building and the roof to match the exterior color of the building.

Staff supports the proposed increase of antennas because the new antennas will be designed to blend in with the building. In addition, although the parapet is only three feet tall, its height is adequate enough to screen the base support structure for the 3 roof mounted antennas. The building's location (adjacent to public facilities, commercial development and I-5 Freeway) is unique in that other existing commercial or potential new development does not have as advantageous a location as this facility.

**COMMISSION OR COMMITTEE REPORTS:**

The Redevelopment Design Review Committee reviewed the project on January 15, 1998, and the result of its review will be presented orally by staff.

The Redevelopment Advisory Committee reviewed the project on January 16, 1998, and its recommendations will be presented orally by staff before the Commission.

**FISCAL IMPACT:**

Does not apply.

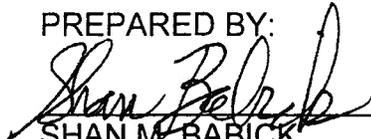
**CITY ATTORNEY'S ANALYSIS:**

The resolution has been reviewed and approved as to form by the City Attorney.

**RECOMMENDATION:**

Staff recommends that the Commission adopt a resolution approving the amendment to Conditional Use Permit (C-202-93) and Variation (V-204-97).

PREPARED BY:

  
SHAN M. BABICK  
Redevelopment Specialist III

SUBMITTED BY:

  
THOMAS J. WILSON  
Executive Director

REVIEWED BY:

Dana Hield Whitson, Assistant City Manager  
Elias Sanchez, Redevelopment Director


**EXHIBITS/ATTACHMENTS:**

1. Resolution
2. Certificate of Exemption
3. Map
4. Elevations

OCEANSIDE COMMUNITY DEVELOPMENT COMMISSION  
RESOLUTION NO. 98 C-08

A RESOLUTION OF THE OCEANSIDE COMMUNITY DEVELOPMENT COMMISSION APPROVING AN AMENDMENT TO AN EXISTING CONDITIONAL USE PERMIT (C-202-93) TO ALLOW FOR ADDITIONAL TRANSMITTING AND RECEIVING ANTENNAS, LOCATED AT 424 SUMMIT STREET, NEXTEL COMPANY, APPLICANT (V-204-97)

WHEREAS, the Community Development Commission at its duly noticed public hearing held on January 20, 1998, considered an amendment to an existing conditional use permit (C-202-93) to allow for additional transmitting and receiving antennas to be placed on the roof and sides of the existing building located at 424 Summit Street; and

WHEREAS, the applicant is Nextel Company; and

WHEREAS, the Community Development Commission, after giving the required notice, did on the 20<sup>th</sup> day of January, 1998, conduct a duly advertised public hearing as prescribed by law to consider said application; and

WHEREAS, studies and investigations made by the Community Development Commission reveal the following facts:

FINDINGS:

**For the Conditional Use Permit:**

1. That the proposed location of the use is in accord with the objectives of the Zoning Ordinance and purposes of the district in which the site is located.

1 The project is located within Subdistrict 8B of the Redevelopment  
2 Area as identified by Zoning Ordinance 095-006, and is designated  
3 Office Professional by the Zoning Ordinance. The purpose of  
4 Subdistrict 8B is to provide a mix of hospital and medical uses,  
5 offices development, interspersed with residential development in  
6 response to market demand. The proposed amendment to the  
7 conditional use permit is compatible with the existing use of the  
8 building and is consistent with the Zoning Ordinance.  
9

- 10 2. That the proposed location of the conditional use and the proposed  
11 conditions under which it would be operated or maintained will be  
12 consistent with the Redevelopment Plan; and will not be detrimental to the  
13 public health, safety or welfare of persons residing or working in or  
14 adjacent to the neighborhood of such use; and will not be detrimental to  
15 properties or improvements in the vicinity or to the general welfare of the  
16 City.  
17

18 The proposed use will be operated or maintained in a manner that  
19 will be consistent with the General Plan and the Redevelopment  
20 Plan. In addition, the project has been conditioned to comply with  
21 all applicable standards to assure that it does not constitute a hazard  
22 or become a detriment to property or improvements or the general  
23 welfare of the City.  
24  
25  
26  
27  
28

1 3. That the proposed conditional use will comply with the provisions of the  
2 Zoning Ordinance, including any specific conditions required for the  
3 proposed conditional use in the district in which it would be located.

4 The development of the project as being proposed has been  
5 adequately conditioned such that it complies with the provisions of  
6 the Zoning Ordinance.  
7

8 **For the Variation:**

9 1. The application of certain regulations and/or standards would result in  
10 practical difficulties or unnecessary hardships inconsistent with the general  
11 purpose and intent of the Redevelopment Plan.

12 The strict application of the regulations and/or standards would  
13 result in practical difficulties in the proposed Conditional Use Permit  
14 in that the Zoning Ordinance calls for screening the base of the  
15 telecommunication facilities by not less than four feet where the  
16 applicant is providing three feet. The existing three foot parapet  
17 located on the roof of the building effectively screens from view all  
18 of the antenna bracing and appurtenances thereby meeting the  
19 intent of the Zoning Ordinance.  
20

21  
22 2. There are exceptional circumstances or conditions applicable to the  
23 property or to the intended development of the property, which do not  
24 apply generally to other properties having the same requirements, limits  
25  
26  
27  
28

1 restrictions, and controls.

2 There is an exceptional circumstances that exist on this particular  
3 site due to the fact that the existing building provides a three foot  
4 high parapet which effectively screens all of the antenna bracing  
5 and appurtenances thereby meeting the intent of the Zoning  
6 Ordinance. This is an exceptional circumstance that would not  
7 apply to other undeveloped property.  
8

- 9 3. Permitting a variation will not be materially detrimental to the public  
10 welfare or injurious to property or improvements in the area.

11 The installation of telecommunications on the roof of the building  
12 will not be injurious to the surrounding neighborhood nor be  
13 materially detrimental to the public welfare or injurious to property  
14 or improvements to the area.  
15

- 16 4. Permitting a variation will not be contrary to the objective of the  
17 Redevelopment Plan.

18 The application is consistent with the policies of the Zoning  
19 Ordinance and does not constitute the granting of a special  
20 privilege.  
21

22 WHEREAS, the Community Development Commission finds that the  
23 project was determined to have no major significant adverse effects upon the  
24 environment per compliance with conditions, and therefore, has been issued a  
25  
26  
27  
28

1 Certificate of Exemption pursuant to the California Environmental Quality Act.

2 NOW, THEREFORE, the Community Development Commission of  
3 the City of Oceanside DOES RESOLVE that an amendment to Conditional Use  
4 Permit C-202-93 is hereby APPROVED subject to the following conditions:  
5

6 **Building:**

- 7 1. Applicable Building Codes and Ordinances shall be based on the date of  
8 submittal for Building Department plan check.
- 9 2. The granting of approval under this action shall in no way relieve the  
10 applicant/project from compliance with all State and local building codes.
- 11 3. Site development, parking, access into buildings and building interiors shall  
12 comply with C.A.C. Title 24, Part 2 (Handicapped Access - Nonresidential  
13 buildings - O.S.A
- 14 4. Application for Building Permit will not be accepted for this project until  
15 plans indicate that they have been prepared by a licensed design  
16 professional (Architect or Engineer). The design professional's name,  
17 address, phone number; State license number and expiration date shall be  
18 printed in the title block of the plans.

19 **Engineering:**

20 None.

21 **Fire:**

22 None.

23 **Redevelopment:**

- 24 5. This Conditional Use Permit shall expire on January 20, 2000 unless  
25 implemented as required by the Zoning Ordinance.
- 26 6. Prior to the transfer of ownership and/or operation of the site the owner  
27 shall provide a written copy of the applications, staff report and resolution  
28

1 for the project to the new owner and or operator. This notification's  
2 provision shall run with the life of the project.

3 7. Failure to meet any conditions of approval for this development shall  
4 constitute a violation of the Conditional Use Permit and Development Plan.

5 8. Unless expressly waived, all current zoning standards and City ordinances  
6 and policies in effect at the time building permits are issued are required to  
7 be met by this project. The approval of this project constitutes the  
8 applicant's agreement with all statements in the Description and  
9 Justification, Management Plan and other materials and information  
10 submitted with this application, unless specifically waived by an adopted  
11 condition of approval.

12 9. This Conditional Use Permit shall be called for review by the Community  
13 Development Commission if complaints are filed and verified as valid by  
14 the Code Enforcement Office concerning the violation of any of the  
15 approved conditions or assumptions made by the application.

16 10. The applicant shall be responsible for trash abatement on the site, and  
17 shall keep the site free of litter, trash and other nuisances.

18 11. This Conditional Use Permit is granted for the following use only:  
19 telecommunications facility, which will allow for a total of 28 antennas.  
20 Any change in the use or any change in the structure will require a revision  
21 to the Conditional Use Permit or a new Conditional Use Permit.

22 12. A covenant or other recordable document approved by the City Attorney  
23 shall be prepared by the applicant and recorded prior to issuance of the  
24 building permit. The covenant shall provide that the property is subject to  
25 this Resolution, and shall generally list the conditions of approval.

26 13. The exterior of the antennas shall be painted to match the exterior color of  
27 the building.

28 14. NOTICE TO APPLICANT: Pursuant to Government Code Section 66020,  
you are hereby notified that the 90-day period to protest the imposition of  
the fees, dedications, reservations or other exactions described in this  
resolution commences on the effective date of this resolution. To protest  
the imposition of any fee, dedications, reservations or other exactions  
described in this resolution you must comply with the provisions of  
Government Code Section 66020. Generally the resolution is effective

1 upon expiration of the tenth day following the date of adoption of this  
2 resolution, unless the resolution is appeal or called for review as provided  
3 in the Oceanside Zoning Ordinance.

3 Water Utilities:

4 15. The developer shall be responsible for developing all water and sewer  
5 facilities necessary to this property. Any relocation of water or sewer lines  
6 is the responsibility of the developer.

7 16. The developer shall construct a water reclamation water system that will  
8 serve this proposed project in accordance with the City's Water  
9 Conservation Ordinance No. 91-15.

9 17. A separate water meter for irrigation purposes shall be installed.

10 PASSED AND ADOPTED by the Oceanside Community Development Commission  
11 of the City of Oceanside this 20th day of January, 1998 by the  
12 following vote:

13 AYES: LYON, JOHNSON, HARDING, McCAULEY, O'HARRA

14 NAYS: NONE

15 ABSENT: NONE

16 ABSTAIN: NONE

17 ATTEST:

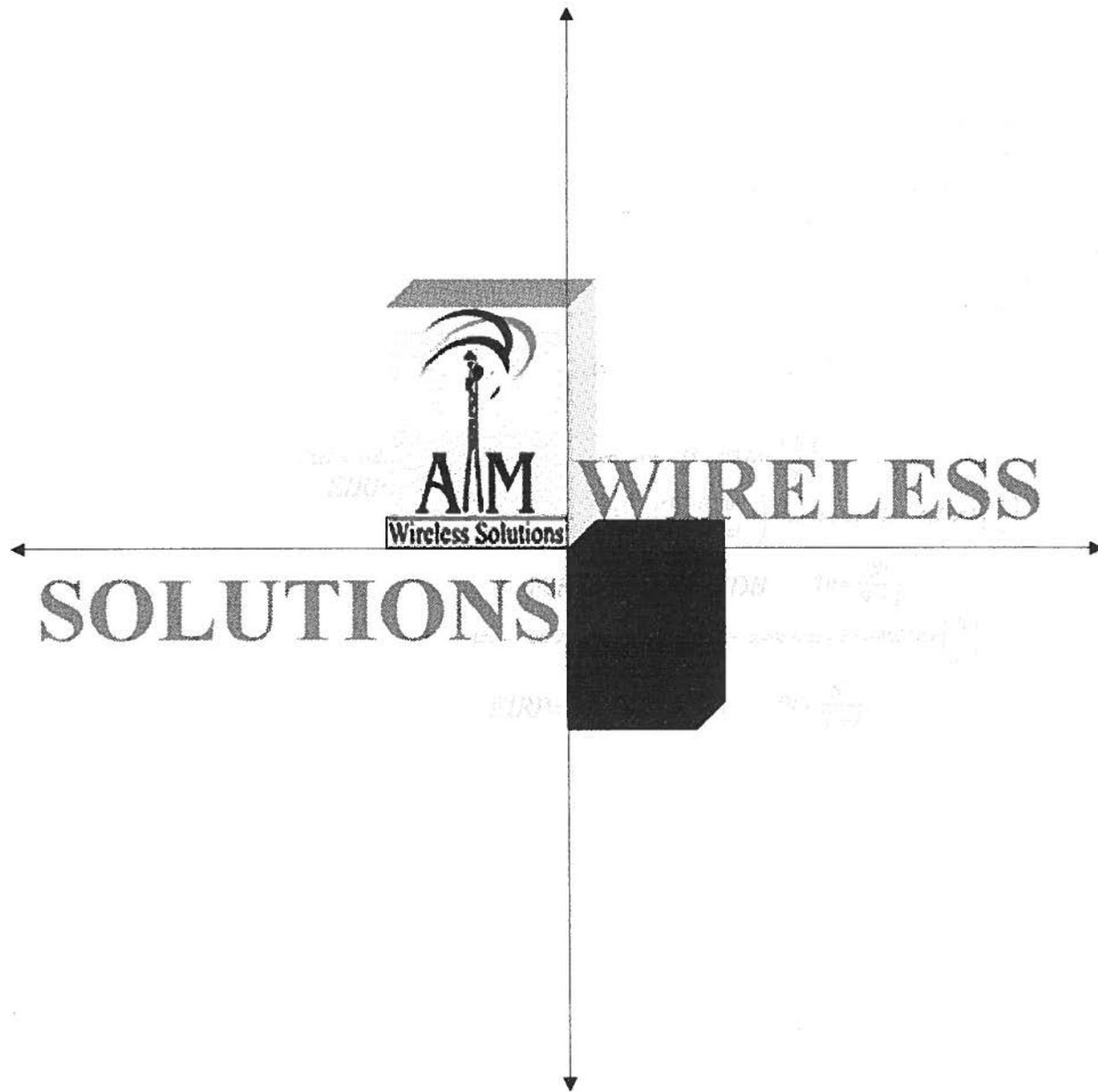
18  
19  
20  
21 Barbara Siegel Payne  
Secretary

22  
23  
24  
25  
26  
27  
28 Richard Lyon  
Chairman

22 APPROVED AS TO FORM:  
23 OFFICE OF THE CITY ATTORNEY

24 by [Signature]  
25 General Counsel





**MPE Report**  
Client: Sprint-WIMAX  
Site: Sportfisher Building, (CA-SDG5162)  
Date: Wednesday, February 03, 2010

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# 1. Objective

This report has been prepared on behalf of Sprint-WIMAX. Sprint-WIMAX is proposing communication equipment at Sportfisher Building located at 1155 Sportfisher Drive, Oceanside, CA 92054. The study will evaluate the effect of the base station for compliance with the appropriate limiting human exposure to radio frequency (RF) electromagnetic fields. The study took the following criteria into consideration:

Analysis	Description
Antenna Patterns	Yes
Measured Antenna Isolation Data	No, Empirical data used

# 2. Introduction

The Federal Communication Commission (FCC) requires the evaluation of RF emissions for possible significant impact on the environment. In 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 Radio frequency Electromagnetic Fields", published in 1986, and in

OET Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", published in 1997.

Separate limits apply for occupational and public exposure conditions. Generally, the public limits are five times more restrictive than occupational limits. The table below shows the summary for the exposure limits.

Table 1 Human exposure summary

Band	Frequency (MHz)	Occupation/Controlled (mW/cm <sup>2</sup> )	Population/Uncontrolled (mW/cm <sup>2</sup> )
Cellular	870	2.9	0.58
SMR	851	2.84	0.567
PCS	1930	5	1
WIMAX	>2400	5	1

# 3. Evaluation & Computer Modeling

The MPE analysis consists of evaluating the RF transmitter power being emitted from each active antenna at the communications site. Power density calculations are performed based on where a human (observer) would be located at the site. The power density values are then converted to MPE percentages and each antenna's MPE percentages are summed together to provide a composite MPE percentage for each observer location. Refer to Appendix I for detailed calculations.

AIM MPE software was used to predict the limits of exposure. Figure 1 below shows the methodology AIM MPE followed to generate the final output depicts the Occupational or Controlled Environment MPE analysis. The color zones in figures 2 and 3 indicate the maximum permissible exposure percentage a person would experience while in these zones.

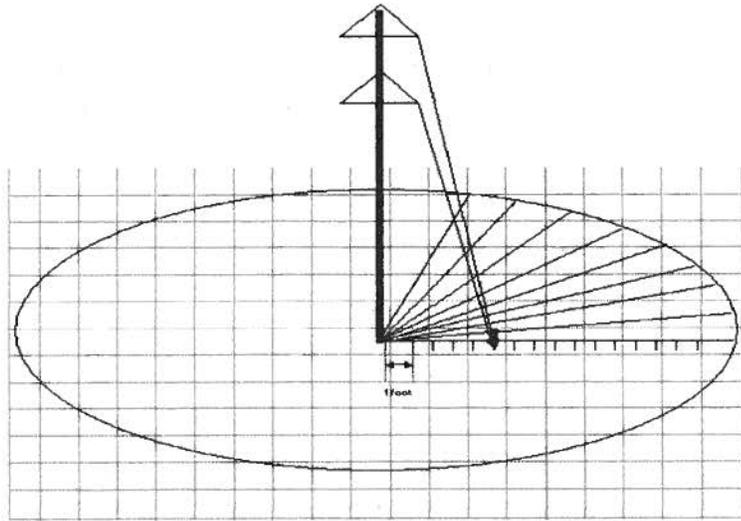


Figure 1. AIM Wireless methodology in calculating MPE

### 3.1. Site Description

Site name: Sportfisher Building (CA-SDG5162)  
 Site description: Maximum Permissible Emission for a Rooftop structure  
 Address: 1155 Sportfisher Drive, Oceanside, CA 92054  
 Latitude: 33-12-03.26 N  
 Longitude: 117-22-37.23 W

### 3.2. Antenna System

Carrier	Antenna Manufacturer	Antenna Model	Height-AGL (ft)	Azimuth-TN	Antenna Length (ft)	Power at Antenna (W)
Sprint-WIMAX	Kathrein	840 10054	36 ft	0, 120, 240	3.5 ft	10 W
Sprint-iDEN	Kathrein	741 984	39 ft	30,125,315	20 ft	50 W
T-Mobile	Andrew	844G90VTA-SX_0	36 ft	30,125,315	4 ft and 6 in	50 W
Existing Carrier1	Power Wave	RA 21.7770.00	48 ft	0, 120, 240	6 ft	50 W
Sprint-Microwave	Andrew	VHKP_2	48 ft	0, 120, 240	2 ft	1 W

### 3.3. Carrier Frequency Information

Carrier	Frequency Ranges (MHz)
Sprint-WIMAX	2496-2502, 2602-2614, 2618-2673.5
Sprint-iDEN	806-824, 851-869
T-Mobile	1950-1965, 1870-1985
Existing Carrier1	870 - 894, 1945 - 1965
Sprint-Microwave	23 GHz

#### 4. General Population/Uncontrolled Exposure Results:

The analysis represents exposure limits to an individual who does not know that there is a potential for RF energy exposure and does not know how to control or limit this exposure. For FCC purposes, this applies to human exposure to RF fields where general public is exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public always fall under this category when exposure is not employment-related. Figure 2 below shows the percentage of total power limits for maximum permissible exposure. Areas that exceed the limits are thematically shown. Refer to the Appendix-I for the detailed limits.

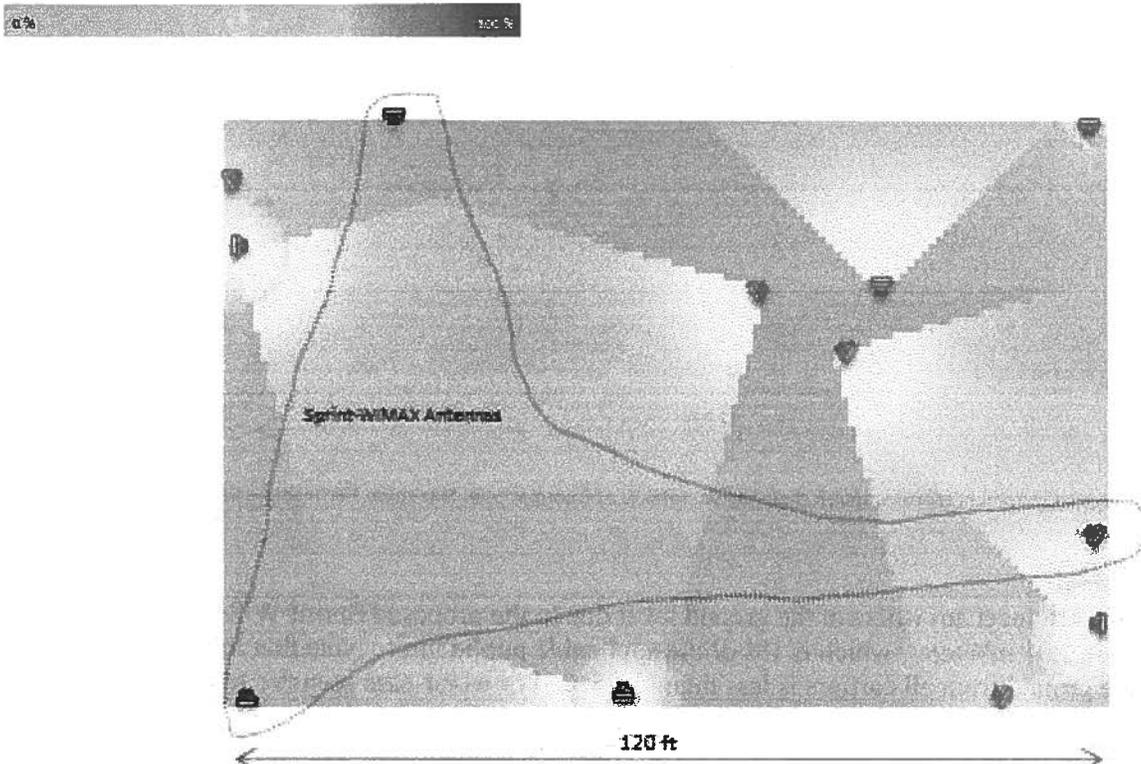


Figure 2 General public graphical representation distance vs. total % of Public Maximum Permissible Exposure

#### 5. Occupational/Controlled Exposure Results:

The analysis represents exposure limits to an individual who should know that there is a potential for RF energy exposure and knows how to control or limit this exposure. For FCC purposes, this applies to human exposure to RF fields where a person is exposed as a consequence of his/her employment and in which the person who is exposed has been made fully aware of the potential for exposure and can exercise control over his/her exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled

limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Figure 3 below shows the percentage of total power for maximum permissible exposure. Areas that exceed the limits are thematically shown. Refer to Appendix-I for the detailed limits.

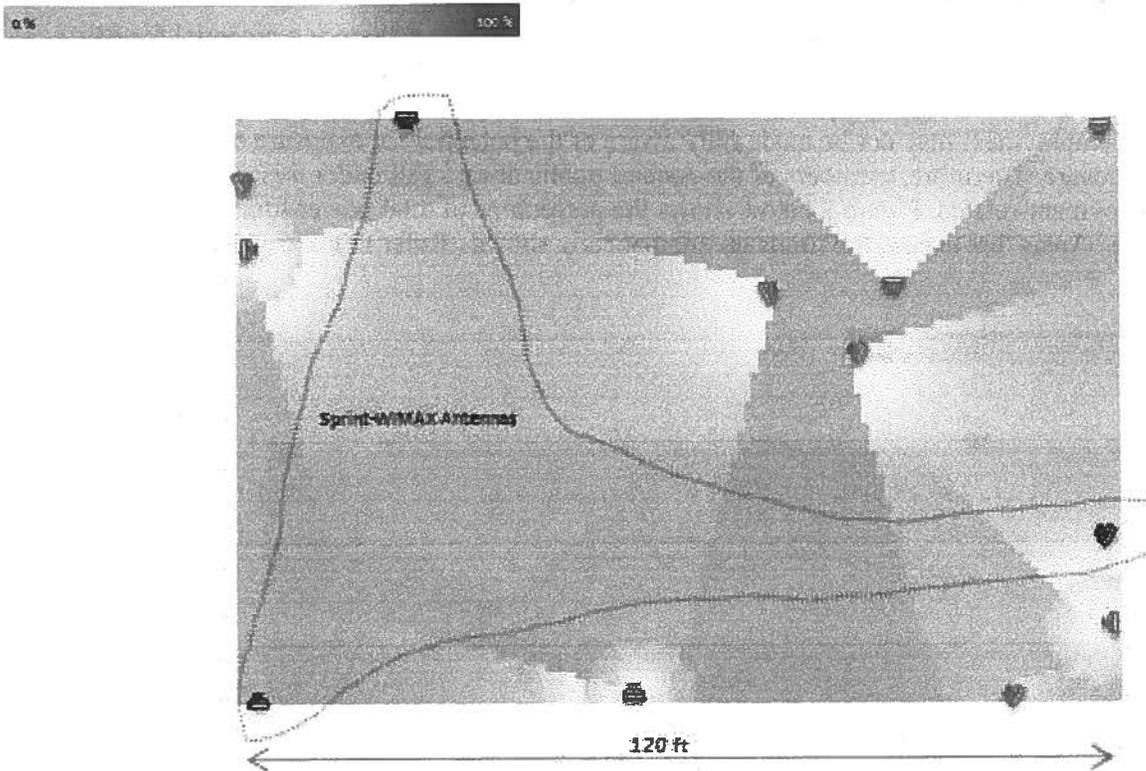


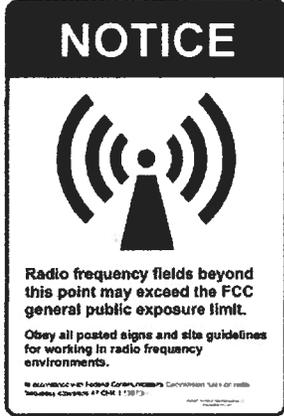
Figure 3 Occupational/controlled graphical representation distance vs. total % of Occupational Maximum Permissible Exposure

## 6. Study Findings

The maximum ambient RF level anywhere at the ground level due to the proposed Sprint-WiMAX operation by itself is calculated to be  $0.01 \text{ mW/cm}^2$ , which is 1% of the applicable public limit. Note that the maximum received power on the ground from all carriers is less than 13.25%. For worst-case scenario analysis, a reflection factor of (2.56) is used for the analysis.

### 6.1. Sign Display

The following signs may be placed at the base of the Monopalm and/or at the site's entrance.



**Sign 1 Placement at Site entrance and/or base of Monopalm**

## **7. Conclusion**

Based on the information and analysis above, it is our professional opinion that the base station proposed by Sprint-WIMAX at 1155 Sportfisher Drive, Oceanside, CA 92054 will comply with the prevailing standards of limiting public exposure to radio frequency energy, and therefore, will not cause an impact on the environment. The highest calculated level in publicly accessible areas does not exceed the prevailing standards allow for exposure of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations.

## 8. Appendix I: Methods of calculations based on OET 65 document

### Exposure Limits:

Table 2 Limits of Occupational Exposure

Limits of Occupation/Controlled Exposure (mw/cm <sup>2</sup> )		
Frequency (f)	Power density (S <sub>m1</sub> )	Time (minutes)
.3-3	100	6
3-30	900/f <sup>2</sup>	6
30-300	1.0	6
300-1500	F /300	6
1500-100000	5	6

Table 3 Limits of General Public Exposure

Limits of General Population/Uncontrolled Exposure (mw/cm <sup>2</sup> )		
Frequency (f)	Power density (S <sub>m2</sub> )	Time (minutes)
.3-1.34	100	30
1.34-30	180/f <sup>2</sup>	30
30-300	0.2	30
300-1500	F /1500	30
1500-100000	1	30

### Power Density Calculations:

#### 1. Towers

Determine if near field, transitional field or far field:

$$R < R_{nf} = \frac{D^2}{4\lambda}$$

Where: R<sub>nf</sub> = extent of near-field (ft)  
 D = maximum dimension of antenna (diameter if circular) in ft  
 λ = wavelength (ft) = 186,000 x 5280/frequency (MHz)  
 R = distance from antenna (ft)

$$R > R_{ff} = \frac{0.6D^2}{\lambda}$$

Where: R<sub>ff</sub> = extent of far-field (ft)  
 D = maximum dimension of antenna (diameter if circular) in ft  
 λ = wavelength (ft)  
 R = distance from antenna

$$R_{nf} < R_{tt} < R_{ff}$$

Where:  $R_{tt}$  = transitional field  
 $R_{ff}$  = extent of far-field  
 $R_{nf}$  = extent of near-field

### Near Field:

#### Equation 1

$$S_{nf} = \left( \frac{180}{\phi_{bw}} \right) \frac{P_{net}}{\pi R h} \times 1000mw \quad (\text{no reflection factor})$$

#### Equation 2

$$S_{nf} = \left( \frac{180}{\phi_{bw}} \right) \frac{P_{net}}{\pi R h} \times 1000mw \times F1 \quad (\text{with reflection factor})$$

Where:  $S_{nf}$  = near field power density (mW/cm<sup>2</sup>)  
 $P_{net}$  = net power input to the antenna after losses (mW)

$$P_{net} = P \times 10^{\frac{coaxloss}{10}} \times 10^{\frac{insertionloss}{10}}$$

$\phi_{bw}$  = beam width of the antenna in degrees

R = distance from antenna (ft)

h = aperture height of the antenna (ft)

Rfact = Reflection factor, if indicated it is 2.56. If not indicated, it is 1

### Far Field

#### Equation 3

$$S_{ff} = \frac{P \times 10^{\frac{G}{10}}}{4\pi R^2} \times 1000mw \quad (\text{no reflection})$$

#### Equation 4

$$S_{ff} = \frac{P \times 10^{\frac{G}{10}}}{4\pi R^2} \times F1 \times 1000mw \quad (\text{with reflection})$$

Where:  $S_{ff}$  = far field power density  
 $P_{net}$  = net power input to the antenna after losses

$$P_{net} = P \times 10^{\frac{coaxloss}{10}} \times 10^{\frac{insertionloss}{10}}$$

R = distance from antenna (ft)

G = Antenna gain

F1 = reflection factor (2.56)

### Transitional Field

Equation 5

$$S_t = \frac{S_{nf} R_{nf}}{R}$$

Where:  $S_{nf}$  = Near field power (mW)  
 $S_t$  = power density (mW/cm<sup>2</sup>)  
 $R_{nf}$  = extent of near-field, calculated above (ft)  
 $R$  = distance to point of interest (ft)

### Power Summation

For  $S_1, S_2, \dots, S_n$

Perform power density excluding the new carrier. If results exceed the maximum by 5% or more, site is not previously in compliance with FCC. If not, then perform the study with the new located carrier and compare the results with the specified limits in the above table.

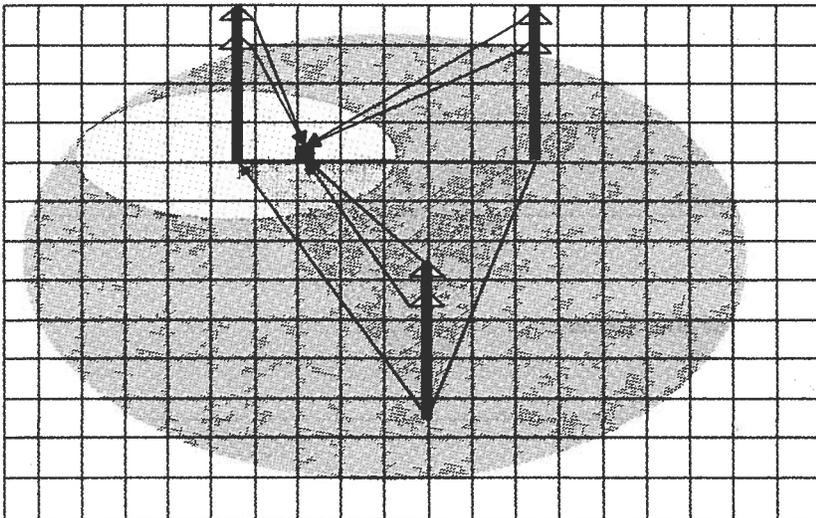
Equation 6

$$\text{Total Power density Occupational/Controlled} = P_{STC} = \sum \left( \frac{S_1}{S_{m1}} + \frac{S_2}{S_{m1}} + \dots + \frac{S_n}{S_{m1}} \right) \times 100$$

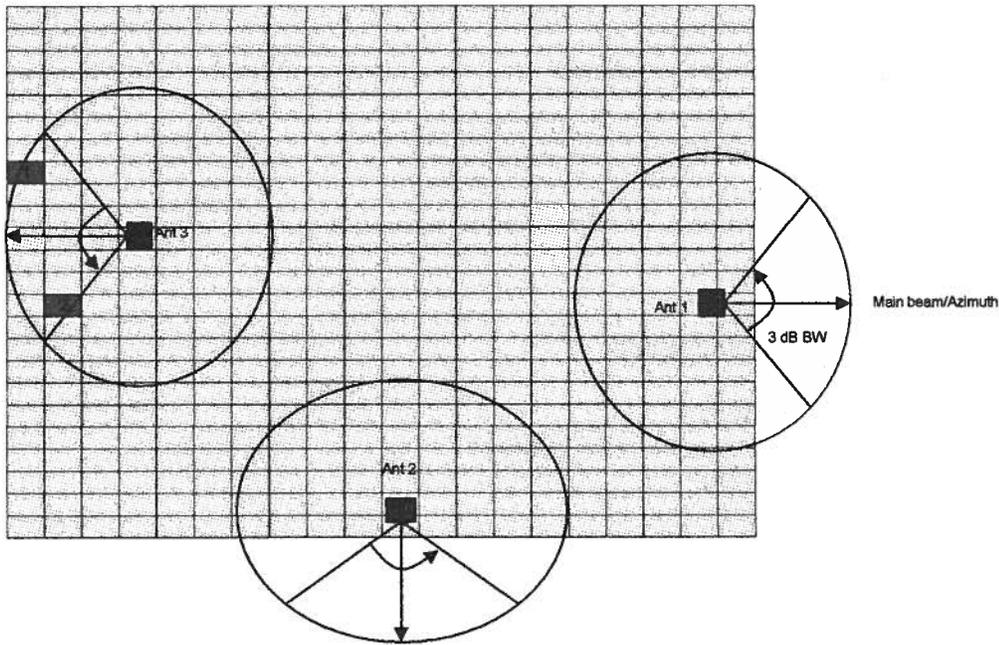
Equation 7

$$\text{Total Power density General/uncontrolled} = P_{STU} = \sum \left( \frac{S_1}{S_{m2}} + \frac{S_2}{S_{m2}} + \dots + \frac{S_n}{S_{m2}} \right) \times 100$$

Where:  $S_1, S_2, \dots, S_n$  = calculated power density  
 $S_{m1}$  = Occupational/controlled limits specified in table 2  
 $S_{m2}$  = General/unoccupational limits specified in table 3



## 2. Roof tops



Determine if near field, transitional field or far field:

$$R < R_{nf} = \frac{D^2}{4\lambda}$$

Where:  $R_{nf}$  = extent of near-field  
 $D$  = maximum dimension of antenna (diameter if circular)  
 $\lambda$  = wavelength  
 $R$  = distance from antenna

$$R > R_{ff} = \frac{0.6D^2}{\lambda}$$

Where:  $R_{ff}$  = extent of far-field  
 $D$  = maximum dimension of antenna (diameter if circular)  
 $\lambda$  = wavelength  
 $R$  = distance from antenna

$$R_{nf} < R_{tt} < R_{ff}$$

Where:  $R_{tt}$  = transitional field  
 $R_{ff}$  = extent of far-field

Figure 1 Rooftop grid for calculations

$R_{nf}$  = extent of near-field

## Near Field:

### 1) Within the 3dB Beamwidth (BW)

If the bin (square for calculations) is partially within the 3dB BW, then the square is within the 3dB BW.

Equation 8

$$S_{nf} = \left( \frac{180}{\phi_{bw}} \right) \frac{P_{net}}{\pi R h} \times 1000mw \quad (\text{no reflection factor})$$

Equation 9

$$S_{nf} = \left( \frac{180}{\phi_{bw}} \right) \frac{P_{net}}{\pi R h} \times 1000mw \times F1 \quad (\text{with reflection factor})$$

Where:  $S_{nf}$  = near field power density (mW/cm<sup>2</sup>)  
 $P_{net}$  = net power input to the antenna after losses (dBm)

$$P_{net} = P \times 10^{\frac{coaxloss}{10}} \times 10^{\frac{insertionloss}{10}}$$

$\phi_{bw}$  = beam width of the antenna in degrees  
R = distance from antenna (ft)  
h = aperture height of the antenna (ft)  
F1 = reflection factor (2.56)

### 2) Outside the 3dB BW

Equation 10

$$S_{nf} = \left( \frac{180}{\phi_{bw}} \right) \frac{P_{net}}{\pi R h} \times 1000mw \times CF_{MPE} \times 10^{\frac{G-FTB}{10}} \quad (\text{no reflection factor})$$

Equation 11

$$S_{nf} = \left( \frac{180}{\phi_{bw}} \right) \frac{P_{net}}{\pi R h} \times 1000mw \times CF_{MPE} \times F1 \times 10^{\frac{G-FTB}{10}} \quad (\text{with reflection factor})$$

Where:  $S_{nf}$  = near field power density (mW/cm<sup>2</sup>)  
 $P_{net}$  = net power input to the antenna after losses. (mW)

$$P_{net} = P \times 10^{\frac{coaxloss}{10}} \times 10^{\frac{insertionloss}{10}}$$

$\phi_{bw}$  = beam width of the antenna in degrees  
FTB = Front to back ratio (dB)  
R = distance from antenna (ft)  
h = aperture height of the antenna (ft)  
F1 = reflection factor (2.56)

## Far Field

### 1) Within the 3dB BW:

If the bin (square for calculations) is partially within the 3dB BW, then the square is within the 3dB BW.

#### Equation 12

$$S_{ff} = \frac{P \times 10^{\frac{G}{10}}}{4\pi R^2} \times 1000mw \times CF_{MPE} \quad (\text{no reflection})$$

#### Equation 13

$$S_{ff} = \frac{P \times 10^{\frac{G}{10}}}{4\pi R^2} \times F1 \times 1000mw \times CF_{MPE} \quad (\text{with reflection})$$

Where:  $S_{ff}$  = far field power density (mW/cm<sup>2</sup>)  
 $P_{net}$  = net power input to the antenna after losses (mW)

$$P_{net} = P \times 10^{\frac{\text{coaxloss}}{10}} \times 10^{\frac{\text{insertionloss}}{10}}$$

R = distance from antenna (ft)  
G = Maximum antenna gain (dB)  
F1 = reflection factor (2.56)  
CF<sub>MPE</sub> = MPE correction factor and set to 0.7

### Outside the 3dB BW:

#### Equation 14

$$S_{ff} = \frac{P \times 10^{\frac{G-FTB}{10}}}{4\pi R^2} \times 1000mw \times CF_{MPE} \quad (\text{no reflection})$$

#### Equation 15

$$S_{ff} = \frac{P \times 10^{\frac{G-FTB}{10}}}{4\pi R^2} \times F1 \times 1000mw \times CF_{MPE} \quad (\text{with reflection})$$

Where:  $S_{ff}$  = far field power density (mW/cm<sup>2</sup>)  
 $P_{net}$  = net power input to the antenna after losses

$$P_{net} = P \times 10^{\frac{\text{coaxloss}}{10}} \times 10^{\frac{\text{insertionloss}}{10}}$$

R = distance from antenna (ft)  
FTB = Front to back ratio (dB)  
G = Maximum antenna gain (dB)  
F1 = reflection factor (2.56)  
CF<sub>MPE</sub> = MPE correction factor and set to 0.7

### **Transitional Field**

#### **Equation 16**

$$S_t = \frac{S_{nf} R_{nf}}{R}$$

Where:  $S_{nf}$  = Near filed power (mW)  
 $S_t$  = power density (mW/cm<sup>2</sup>)  
 $R_{nf}$  = extent of near-field, calculated above (ft)  
 $R$  = distance from antenna (ft)

### **Power Summation**

For S1, S2.....Sn

Perform power density excluding the new carrier. If results exceed the maximum by 5% or more, site is not in compliance with FCC, if not, then perform the study with the new located carrier and compare the results with the specified limits in the above table.

#### **Equation 17**

$$\text{Total Power density Occupational/Controlled} = P_{STC} = \sum \left( \frac{S_1}{S_{m1}} + \frac{S_2}{S_{m1}} + \dots + \frac{S_n}{S_{m1}} \right) \times 100$$

#### **Equation 18**

$$\text{Total Power density General/uncontrolled} = P_{STU} = \sum \left( \frac{S_1}{S_{m2}} + \frac{S_2}{S_{m2}} + \dots + \frac{S_n}{S_{m2}} \right) \times 100$$

Where:  $S_1, S_2 \dots S_n$  = calculated power density (mW/cm<sup>2</sup>)  
 $S_{m1}$  = Occupational/controlled limits specified in the above table (mW/cm<sup>2</sup>)  
 $S_{m2}$  = General/unoccupational limits specified in the table above (mW/cm<sup>2</sup>)

## 9. Contact Information

Engineer	Ahmad Malkawi <i>Ahmad Malkawi</i>
Contact Phone number	847-874-3003
Email Address	<u><a href="mailto:amalkawi@aimws.com">amalkawi@aimws.com</a></u>
Fax	847-307-8312

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