

Staff Report City of Manhattan Beach

TO:

Honorable Mayor Ward and Members of the City Council

THROUGH: Geoff Dolan, City Manager

FROM:

Richard Thompson, Director of Community Development

Rosemary Lackow, Senior Planne

DATE:

October 3, 2006

SUBJECT:

Consideration of a Telecom Permit to Replace the Existing Temporary Cellular Facility with a Permanent Facility Located on City Parking Structure 3 at 12th Street and Morningside Avenue and Authorize the City Manager to Execute a Lease

Agreement with Sprint

RECOMMENDATION:

Staff recommends that the City Council **APPROVE** the subject Telecom Permit and **AUTHORIZE** the City Manager to execute the related lease agreement with Sprint.

FISCAL IMPLICATION:

The City will receive revenue through the lease. If the Telecom Permit is approved, the Council must also authorize the City Manager to execute the lease.

BACKGROUND:

In 1998 the City Council executed a lease with Cox Communications PCS to allow an 80-foot telecom monopole in the City Hall parking lot adjacent to the Fire Station. In 2003 due to the Civic Center construction, the City Council amended that lease and a new temporary facility was located on the top level of Parking Lot 3. Sprint PCS (current owner) is now seeking approval to reconstruct a permanent facility at Lot 3. On September 9, 2006 NWA Wireless filed an application on behalf of Sprint PCS for a Telecom Permit for the permanent facility.

DISCUSSION:

Project Description

The Sprint cellular network is fairly well established along Sepulveda Boulevard but is weak in the beach area (see attached map of Sprint facilities, Exhibit A). The purpose of the Lot 3 facility is to enhance cellular telephone coverage within the coastal area. In particular, as indicated on the attached color diagrams (Exhibit B) the Lot 3 facility significantly enhances service within the downtown surrounding the intersection of Manhattan Beach Boulevard and Highland Avenue and nearby along Valley/Ardmore. In these particular areas, without this site, Sprint coverage is either non-existent or marginal.

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The proposed facility consists of three antennas and two equipment cabinets which are to be located in the north west corner of the second (mid) level of the parking structure, adjacent to 12th Street. The paved area to be occupied by the antenna facility contains approximately 200 square feet. The antennas are to be mounted at the top of a new light pole within a "radome" fixture, which will be 52 feet above the adjacent sidewalk and will not exceed the height of the existing temporary facility. The antenna fixture will be approximately 15 feet higher than the existing parking lot lights. Unlike the existing temporary facility the proposed antennas would not be exposed and will look similar to parking lot light poles. (see Exhibits C and D, photo simulation and plans). From the Morningside (east) perspective, the new pole will be somewhat hidden behind two palm trees. From 12th Street the facility will be more visible but will blend with the parking structure setting. The two equipment cabinets are to be installed on the parking deck near the antennas, and the entire site would be fenced off and therefore inaccessible to the general public. The applicant proposes to install lighting on the pole that will match the other security lights on the parking lot.

The existing temporary facility occupies three striped metered parking spaces along the west side of the top level of the lot. The new location at the 2nd level will not occupy any designated parking spaces or interfere with access.

Once City Council approves the Telecom Permit, Sprint indicates it will consummate the lease and secure permits as soon as possible. Construction is expected to take approximately four weeks.

The applicant has submitted a report of the projected RF (radio frequency) emissions that would emanate from the facility, pursuant to FCC (Federal Communications Commission) standards. It concludes that the facility will be well within the range of accepted emissions for public accessed areas because the antennas will be high above the parking lot surface. The study (Exhibit E) recommends no specific general public mitigations for RF issues.

Lease Terms

The pending lease has been reviewed by the City Attorney, Director of Finance and Director of Community Development. The following are the main terms in the draft lease document:

- 1. Sprint must remove the temporary facility at the time the permanent facility is activated.
- 2. Sprint will pay the City \$137,000 concurrent with issuance of a building permit. The City shall use the proceeds for repairs or maintenance of Parking Lot 3.
- 3. Sprint shall continue to pay \$29,000 per year (annual increases). The term (with allowed renewals) will expire April 30, 2028.
- 4. Sprint must remove any telecom equipment that is not used for a period of six consecutive months.

Process/Public Notice

The application has been processed in accordance with MBMC 13.02.060 which regulates telecommunication facilities on City property. On September 22nd, Staff mailed a notice to all property owners within 500 feet of the project, informing of the pending Telecom Permit and approval process (Exhibit F). Staff has not received any comments or correspondence as of the writing of this report; however the public has been invited to attend the Council meeting and give testimony. The decision of the City Council is final.

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This item is on the "Consent Calendar" portion of the Council agenda. The Council may approve the Telecom Permit and authorize the related lease by "receiving and filing" this report. If this occurs, the Community Development Department will issue a Telecom Permit subject to conditions recommended in this report. If the Council wishes to discuss this matter, this item must be removed from the Consent Calendar and discussed with other matters towards the end of the meeting. Any members of the public, if any, would be able to address the Council at that time.

CONCLUSION:

The operation of a permanent facility is expected to significantly benefit subscribers to Sprint cellular phone service in the City. The subject location within the downtown commercial area is not expected to be negatively impacted due to the stealth design, relatively low profile and small unobtrusive footprint of the pole and equipment. The proposed location within the parking lot will not inhibit use of any existing parking spaces and will free three spaces currently occupied by the temporary facility.

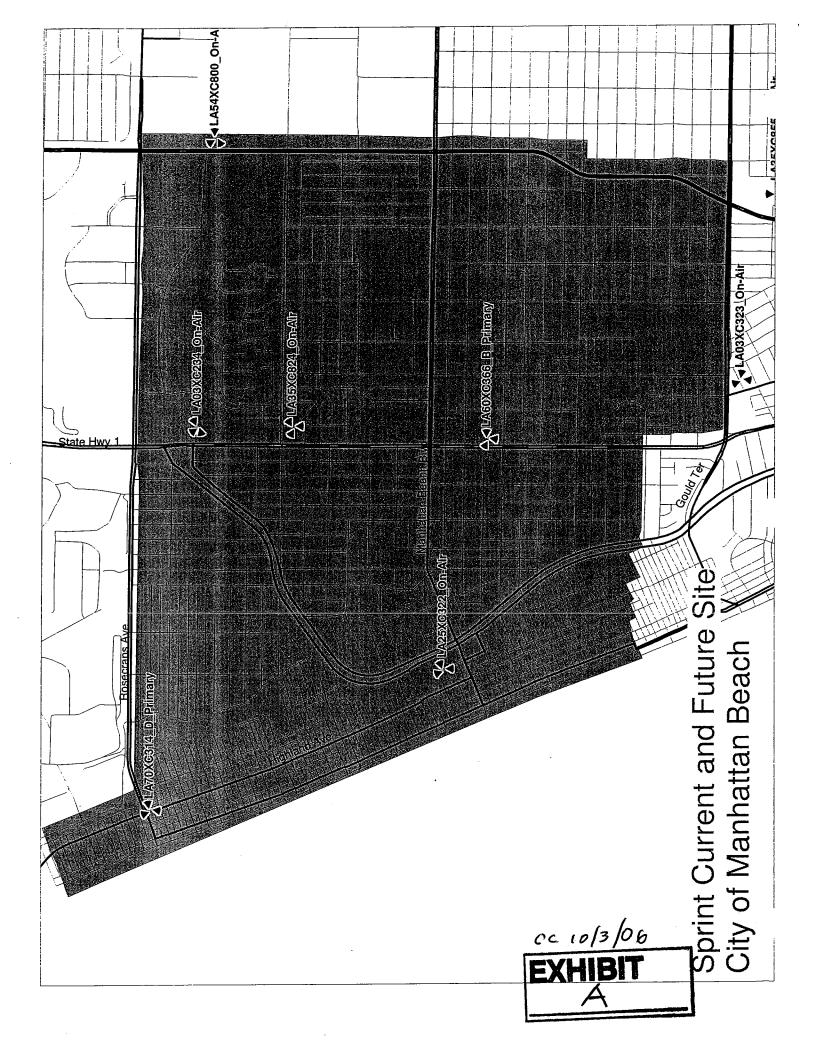
Staff recommends that the following conditions be applied to the Telecom Permit:

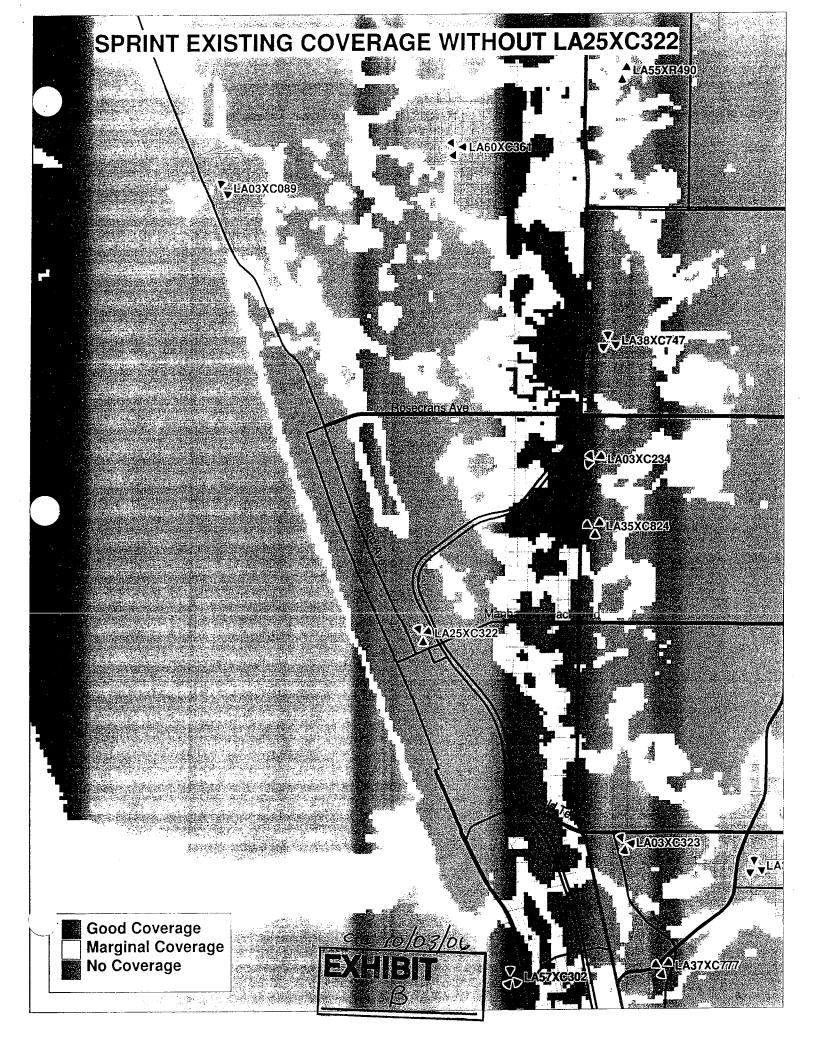
- 1. The applicant shall obtain all necessary construction permits and shall comply with all applicable building and safety code requirements. The lease payment shall be made prior to issuance of a building permit.
- 2. The maximum height of the pole shall be 52 feet 10-inches, consistent with the existing temporary cell site at this location.
- 3. The existing temporary cell site shall be removed in its entirety, upon completion of construction.
- 4. All electrical and phone service to the proposed facility shall be placed in underground conduits.
- 5. The applicant shall justify the size (to be as small as practical) and number of antennas and related equipment cabinets as being the most current technology available.
- 6. All lighting installed shall be consistent with parking lot lighting standards and shall not shine directly onto any residential property.
- 7. At any time in the future if any portion of the facility, including antennas, pole and equipment cabinets become unused, that portion shall be removed from the premises immediately.

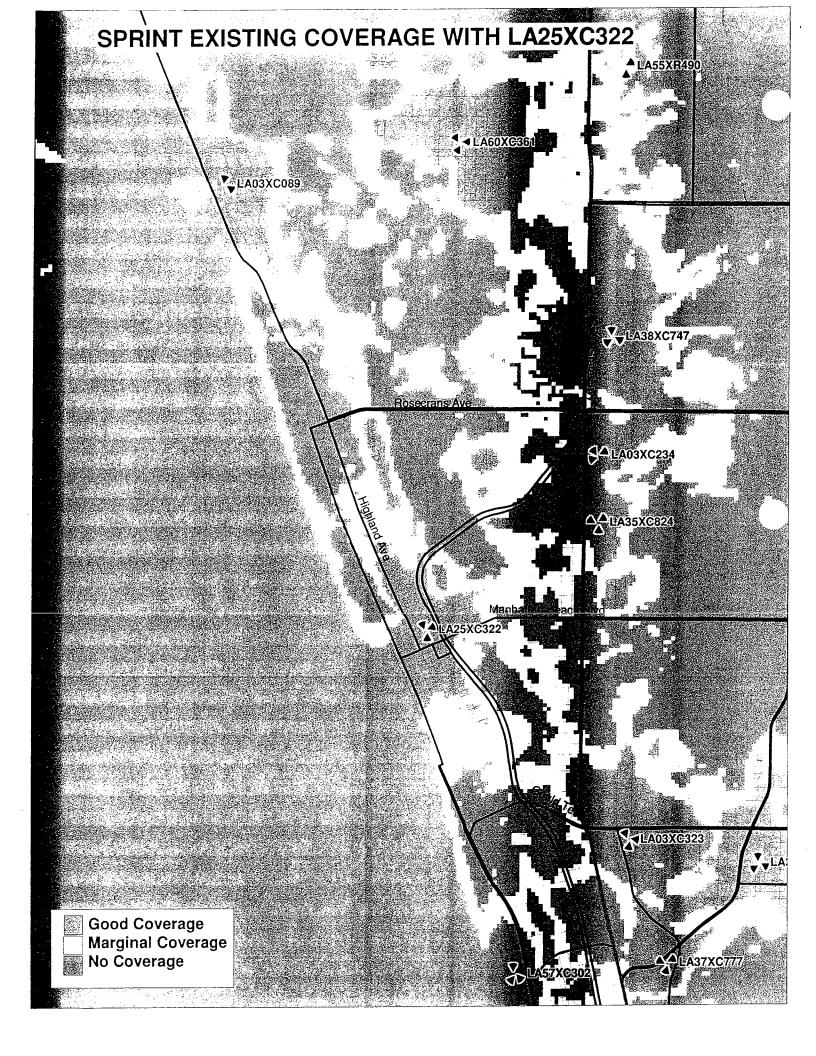
Attachments: A. Map of Sprint Facilities in Manhattan Beach

- B. Coverage diagrams
- C. Photos: Existing and proposed simulation
- D. Plans (folded)
- E. RF Report dated September 18, 2006
- F. Public Notice

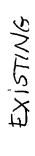
cc: Morten Munser, NSA Wireless, Inc.





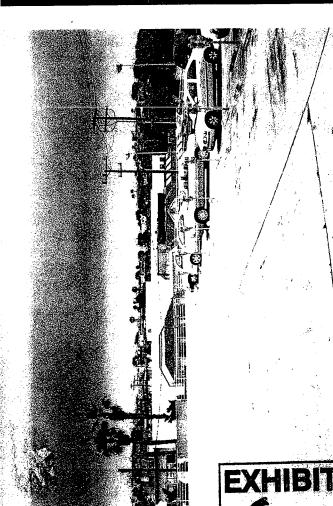


View of area proposed for new antennas at mid level





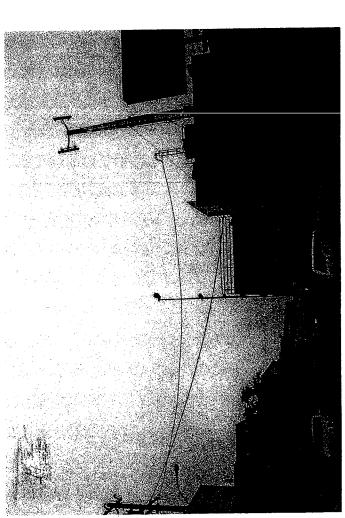
Existing antennas at top level



View towards east from existing antennas



View of Lot 3 from HIghland (existing)



View of Lot 3 from 12th Street



Vie f Lot 3 from Crest Drive



WILLIAM F. HAMMETT, P.E.
DANE E. ERICKSEN, P.E.
STANLEY SALEK, P.E.
ROBERT D. WELLER, P.E.
MARK D. NEUMANN, P.E.
ROBERT P. SMITH, JR.
RAJAT MATHUR

ROBERT L. HAMMETT, P.E. 1920-2002 EDWARD EDISON, P.E.

BY E-MAIL MORTEN.MUNSER@NSAWIRELESS.COM

September 18, 2006

Mr. Morten Munser NSA Wireless, Inc. 4685 MacArthur Court Suite 480 Newport Beach, California 92660

Dear Morten:

As you requested, we have analyzed the RF exposure conditions near the Sprint Nextel base station (Site No. LA25xc322) proposed to be located near the intersection of 12th Street and Morningside Drive in Manhattan Beach, California. An electronic copy of our report is enclosed. Fields in publicly accessible areas at the site are calculated to be well below the applicable limits.

We appreciate the opportunity to be of service and would welcome any questions on this material. Please let me know if we may be of additional assistance.

Sincerely yours,

William F. Hammett

ds

Enclosure

e-mail: US Mail: Delivery: Telephone: bhammett@h-e.com

Box 280068 • San Francisco, California 94128

: 470 Third Street West • Sonoma, California 95476

707/996-5200 San Francisco • 707/996-5280 Facsimile • 202/396-5200 D.C.



Sprint Nextel • Proposed Base Station (Site No. LA25xc322) 12th Street and Morningside Drive • Manhattan Beach, California

at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. Along with the low power of such facilities, this means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

Computer Modeling Method

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

Site and Facility Description

Based upon information provided by Sprint Nextel, including drawings by Connell Design Group, LLC, dated October 10, 2005, it is proposed to mount three EMS Model RR6518-04DPL2 directional PCS antennas on a new 54-foot light pole, to be located on the three-story municipal parking garage at the southwest corner of the intersection of 12th Street and Morningside Drive in Manhattan Beach. The antennas would be mounted at an effective height of about 60 feet above ground and would be oriented toward 70°T, 180°T, and 320°T. The maximum effective radiated power in any direction would be 1,000 watts. There are reported no other wireless telecommunications base stations installed nearby.

Study Results

For a person anywhere at ground, the maximum ambient RF exposure level due to the proposed Sprint Nextel operation is calculated to be 0.0010 mW/cm^2 , which is 0.10% of the applicable public limit. The maximum calculated level on the top floor of the parking garage is 0.099% of the public exposure limit; the maximum calculated level at the second-floor elevation of any nearby building is 0.16% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels.

Recommended Mitigation Measures

Since they are to be mounted on a tall light pole, the Sprint Nextel antennas are not accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, no access within 2 feet



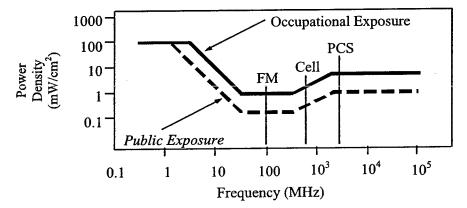
SAN FRANCISCO

FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements, which are nearly identical to the more recent Institute of Electrical and Electronics Engineers Standard C95.1-1999, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz." These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

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

Frequency_	Electromagnetic Fields (f is frequency of emission in MHz)						
Applicable Range (MHz)	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm ²)		
0.3 - 1.34	614	614	1.63	1.63	100	100	
1.34 - 3.0	614	823.8/f	1.63	2.19/f	100	180/f²	
3.0 - 30	1842/ f	823.8/f	4.89/ f	2.19/f	900/ f ²	180/f²	
30 - 300	61.4	27.5	0.163	0.0729	1.0	0.2	
300 - 1,500	3.54√f	1.59√f	√f/106	$\sqrt{f/238}$	f/300	f/1500	
1,500 - 100,000	137	61.4	0.364	0.163	5.0	1.0	



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



RFR.CALC[™] Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications cell sites. The near field zone is defined by the distance, D, from an antenna beyond which the manufacturer's published, far field antenna patterns will be fully formed; the near field may exist for increasing D until some or all of three conditions have been met:

1)
$$D > \frac{2h^2}{\lambda}$$
 2) $D > 5h$ 3) $D > 1.6\lambda$

where h = aperture height of the antenna, in meters, and $\lambda = \text{wavelength of the transmitted signal, in meters.}$

The FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives this formula for calculating power density in the near field zone about an individual RF source:

power density
$$S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$$
, in mW/cm²,

where θ_{BW} = half-power beamwidth of antenna, in degrees, and

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

The factor of 0.1 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates distances to FCC public and occupational limits.

Far Field.

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

power density
$$S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$$
, in mW/cm²,

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

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

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

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



CITY OF MANHATTAN BEACH NOTICE OF PENDING APPLICATION FOR A TELECOMMUNICATIONS FACILITY

The Department of Community Development is currently reviewing an application for a Telecom Permit for a cellular phone facility pursuant to provisions of Section 13.02.060 of the City of Manhattan Beach Municipal Code.

Applicant:

Sprint PCS /NSA Wireless

Project Location:

The subject proposed cell site location is City Public Parking Lot 3 at the south west corner of 12th Street and Morningside in the City of

Manhattan Beach.

Project Description:

The project consists of the installation and operation of three antennas and two associated equipment cabinets for Sprint Spectrum's personal communication services (PCS) wireless telecommunication network. The antennas are proposed to be mounted at the top of a new light pole and the equipment cabinets are proposed to be contained within a chain link enclosure at the northwest corner of the second (mid) level of the parking structure. The purpose of the proposed telecommunications facility is to enhance cellular telephone coverage within the City of Manhattan Beach for Sprint PCS and will replace an existing temporary cell site at approximately the same location and height. (See photo on

reverse side of this notice)

City Contact:

Rosemary Lackow, Senior Planner; (310) 802-5515;

rlackow@citymb.info

Further Information: Additional information can be obtained by reviewing the project file available at the Community Development Department, Manhattan Beach City Hall, Monday through Friday 8:00AM to 5:00PM, or by phoning or e-mailing the City contact (see above).

Public Comments & Approvai Process:

The City Council of Manhattan Beach will make a decision on this application at its regular meeting of October 3, 2006 (General Business portion of agenda). Written comments are invited and must be received in writing no later than September 27, 2006 for incorporation into the Staff Report. Comments received after this date and up to October 3rd 2006 will be forwarded directly to the City Council. Interested parties may give input to the Council at its meeting on October 3rd, 2006, when the decision will be made. Mailed comments should be sent to:

City of Manhattan Beach Attention: Richard Thompson, Director **Community Development Department** 1400 Highland Avenue

Manhattan Beach, CA 90266

E-mailed comments to: rlackow@citymb.info

TERRI ALIABADI **Acting City Clerk**

Date mailed: September 22



Sprint PCS Assets LLC

LA25XC322

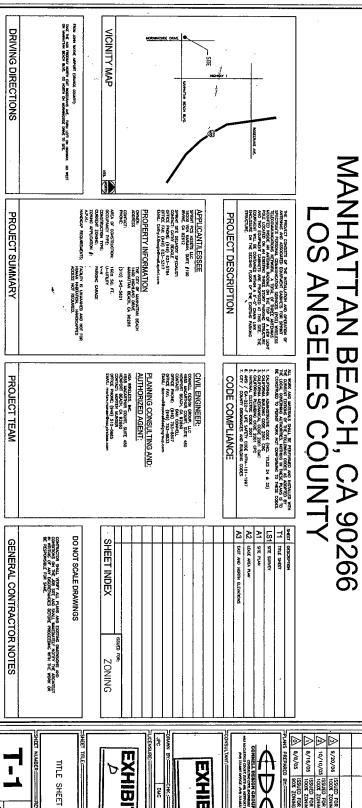
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127H STREET AND MORNIMISTOLE DR.
MANHATTAN BEACH COMMY
LOS ANGELES COMMY

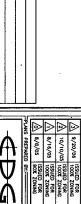
9/20/06 ZONING

ECT INFORMATION:

Sprint PCS Assets, LLC 18200 YON KARMAN, SUITE \$100

MANHATTAN BEACH PARKING STRUCTURE LA25XC322 12TH AND MORNINGSIDE







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