



## Staff Report to the Zoning Administrator

Application Number: **06-0701**

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**Applicant:** Evan Shepherd Reiff for Peacock Associates

**AGENDA DATE:** SEPT. 7, 2007

**AGENDA ITEM #:** 0.1

**Owner:** Ledyard Properties

**TIME:** 8:30 A.M.

**APN:** 026-311-65

**Project Description:** Proposal to construct a new wireless communications facility on a site with a cold storage building and an operations building. Includes three equipment cabinets on a new concrete slab, three antennas within a 50-foot tall "flagpole" monopole with power and telco services to the equipment, and a GPS antenna.

**Location:** Property located on the west side of 17<sup>th</sup> Avenue approximately 450 feet south of the intersection with Brommer Street, at 1053 17<sup>th</sup> Avenue.

**Supervisory District:** First District (District Supervisor: Janet K. Beautz)

**Permits Required:** Commercial Development Permit and a waiver of the requirement that the tower be set back 300' from residentially zoned parcels, to approximately 140 feet to the residentially zoned property and approximately 380 feet to the nearest residence.

### Staff Recommendation:

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application 06-0701, based on the attached findings and conditions.

### Exhibits

- |   |  |
|---|--|
| A. Project plans                              | F. Location, Zoning and General Plan   |
| B. Findings                                   | Maps                                   |
| C. Conditions                                 | G. NEIR Study by Hammet & Edison       |
| D. Categorical Exemption (CEQA determination) | H. Aerial Photos and photo-simulations |
| E. Assessor's parcel map                      | I. Comments & Correspondence           |

### Parcel Information

Parcel Size:	2.5 acres
Existing Land Use - Parcel:	Warehouse

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County of Santa Cruz Planning Department  
701 Ocean Street, 4<sup>th</sup> Floor, Santa Cruz CA 95060

Existing Land Use - Surrounding: Warehouse & light industry  
Project Access: 17" Avenue & Kinsley Street  
Planning Area: Live Oak  
Land Use Designation: C-S (Service Commercial)  
Zone District: C-4 (Commercial Service) and M-1 (Light Industrial)  
Coastal Zone: ☐ Inside ☒ Outside

### Environmental Information

Geologic Hazards: Not mapped/no physical evidence on site  
Soils: Soils report not required  
Fire Hazard: Not a mapped constraint  
Slopes: No slopes over 30% at project site or access roads  
Env. Sen. Habitat: Not mapped/no physical evidence on site  
Grading: No grading proposed  
Tree Removal: No trees proposed to be removed  
Scenic: Not a mapped resource  
Drainage: Existing drainage adequate  
Archeology: Not mapped/no physical evidence on site

### Services Information

Urban/Rural Services Line: ☒ Inside ☐ Outside  
Water Supply: None required  
Sewage Disposal: None required  
Fire District: Central Fire Protection  
Drainage District: Zone 5 – no additional impervious area

### History

The project site is one parcel that is a part of the Ledyard food services campus. The subject parcel includes a cold storage building and a plant operations building. The current cold storage building was originally constructed in 1977 (permit 50707) as a one-story warehouse and was remodeled in 1982 (permit 72652) for its current purpose. The operations building was originally permitted in 1978 (78-1687-PD) as a storage and office building. What had been two parcels have been combined into one to consolidate the Ledyard operations. Another application, 05-0439, is currently in process to establish a Master Occupancy Program (MOP) for the three parcels that make up the campus. The requested permit will not affect the MOP as the proposed use is appurtenant and accessory to the main storage, warehouse and shipping use, and accessory structures and uses will be allowed under the MOP.

### Project Setting

The project site is a 2.5-acre parcel located approximately 575 feet west from 17" Avenue. Surrounding uses in the immediate vicinity include other warehouse and storage facilities,

manufacturing, auto repair, a landscape maintenance business, offices, and a mini-storage. Further to the north and west are single-family dwellings and there is a rail line, Shoreline Middle School, the Simpkins Swim Center and Schwan Lake Park to the south and southwest. There is a variety of zoning designations in the area that reflect the different uses. Zoning and General Plan maps are included as Exhibit F.

The monopole and equipment cabinets are proposed to be located between the cold storage building and the operations building, in an area that is currently paved, where equipment will be screened by the existing buildings and fencing.

### Proposed Project

The applicant proposed to install an unmanned telecommunications facility within a lease area of approximately 125 square feet with a concrete pad (approximately 96 square feet) on an existing paved area. The proposed equipment would consist of three, 56-inch antennas inside a 50-foot flagpole monopole, three associated equipment cabinets, two power/telco boxes and a GPS antenna. The equipment cabinets and telco boxes will be ground-mounted on the concrete pad and the GPS antenna will be mounted to the warehouse building. Because the existing area is currently paved, no trees or vegetation are proposed to be removed and no grading is necessary.

### Zoning Issues

The property is an approximately 2.5 acre parcel, with a “split” zoning of Commercial Service (C-4) and Light Industrial (M-1), and a Service Commercial (C-S) General Plan designation (see Exhibit F). The proposed wireless communication facility is an allowed use in the C-4 and M-1 zone districts, as neither of those designations are considered to be “prohibited” or “restricted” per County Code Section 13.10.661(b) and (c).

County Code Section 13.10.661(g) requires co-location when technically feasible. There is an existing Sprint/Nextel monopole approximately 650 feet southeast of the proposed facility, on Assessor’s Parcel Number (APN) 026-311-57. However, the design of this monopole precludes additional co-locations as the conditions of approval require all antennas to be maintained within a “Radome” structure and not mounted to the exterior of the pole. While there is additional capacity on this monopole, it will only accommodate three additional antennas within an extension of the “Radome” structure which are intended to provide added capacity to Sprint/Nextel if needed in the future.

The proposed facility meets all site standards for the C-4 zone district as it would be located a minimum of 94-feet from the nearest property line. The maximum height allowed for a free-standing tower in the C-4 zone district would be 85-feet (reference Planning Department Policy/Ordinance Interpretation WCF-01) and the proposed height is 50-feet.

County Code Section 13.10.663(a)(9) requires that the base of any new freestanding telecommunications tower be set back a minimum of 300-feet from residentially zoned parcels to minimize visual impacts that may result from a tower structure. This requirement may be waived by the decision making body, however, if it is determined that the tower will not be readily visible from neighboring residential structures or that service could not be provided to a

significant area without construction of the tower. The proposed project is unique in that the area where it is proposed to be located is within 300-feet of two residentially zoned (RM-6) parcels, the closest one of which is located approximately 140 feet away and contains a service commercial use (026-311-13). The other parcel does contain a single-family dwelling (026-311-12) and that dwelling is located approximately 380-feet from the base of the proposed tower See Exhibit F). The project is also unique in that the “tower” has been camouflaged and all antennas are completely contained within a flagpole/monopole. A flagpole such as the one proposed could be installed on the subject parcel with, at most, a minor administrative permit for which the fee would be waived. Flagpoles displaying the American flag are commonly found in large service commercial or industrial developments and will appear to be part of a common built environment. So, while the flagpole will be visible it will not be perceived as a freestanding tower and the wireless communication facility, consisting of antennas and equipment cabinets and other ancillary equipment, will not itself be visible.

### **Alternative Site Analysis**

An alternatives analysis was not required for this proposal as the parcel is not within a restricted or prohibited zone district. The applicant, did, however, identify several possible alternative locations that would have potentially allowed a building-mounted or co-located facility, either of which is preferable to a monopole that is not a “stealth” installation. Other parcels identified included the Central Fire Protection District station at 930-17<sup>th</sup> Avenue, with no interest in leasing; Brommer Street Storage at 1300 Brommer Street, the owners of which were only interested in a short term lease; Paradise Landscape at 1358 Brommer Street, where Code Compliance issues prevent the location of a wireless communication facility; a light industrial complex at 992 17<sup>th</sup> Avenue, the owners of which were not interested in a lease; and the Sprint/Nextel facility discussed above. The proposed facility is intended to serve the businesses and residences in the area surrounding Brommer Street and 17<sup>th</sup> Avenue, to the yacht harbor. Because the other nearby sites and one potential co-location were found not to be viable, this site was chosen as it is not in a restricted or prohibited area and the tower base could be located a minimum of 300-feet from all but one small portion of residentially zoned properties.

### **Visual Impacts/Design Review**

Although the proposed flagpole/monopole will be visible from the surrounding area, it is located in an area that is not a designated visual resource area. The base of the proposed monopole is located more than 300-feet from all but one small portion of residentially zoned area to reduce visual impacts to surrounding residences. Please refer to the section above (Zoning Issues) for a discussion about the 300-foot separation requirement. Additionally, the structure has been designed such that the three antennas are internally mounted and are not visible, and the proposal utilizes a stealth-type design that mimics structures normally found in the built environment where the facility is located. Flagpoles displaying the American flag are commonly found in large service commercial or industrial developments and will appear to be part of a common built environment. The support facilities will be located between two existing buildings on site and will not be visible off-site.

To reduce any potential visual impacts, conditions of approval have been included to eliminate 24-hour lighting, such that the flag will be lowered and raised daily, and to limit the size of the

flag to the smallest possible given the size and height of the pole.

To ensure that this project's long-term visual impact is minimized, several conditions of approval are proposed including allowing only manual lighting, requiring that the pole be maintained in good condition throughout its life (including painting as needed), and maintaining the flag in good condition

### **Radio Frequency (RF) Exposure**

The applicant has submitted a study by Hammett and Edison, Inc. consulting engineers that describes the proposed installation and the maximum RF exposure levels for surrounding land uses. The applicant proposes to install three Jaybeam Wireless directional panel PCS antennas inside the top of the flagpole/monopole. The antennas would be mounted at an effective height of about 47 feet above ground and would be oriented at 120° spacing to provide service in all directions. The maximum effective radiated power in any direction would be 1,890 watts, representing six channels operating simultaneously at 315 watts each.

The maximum ambient RF exposure anywhere on the ground, for the proposed Metro PCS operation alone, will be 0.31% of the applicable public exposure limit established by the Federal Communications Commission (FCC). The maximum calculated cumulative level on the ground for the simultaneous operation of both carriers (including the Sprint/Nextel facility to the southeast) would be 0.39% of the public exposure limit. The maximum calculated cumulative level on the second floor elevation of any nearby building would be **0.63%** of the public exposure limit, and the maximum calculated cumulative level at the second-floor elevation of Shoreline Middle School would be 0.25% of the public exposure limit. According to the study findings, the projected exposure limits include "worst-case" assumptions and are expected to overstate actual power density levels.

Due to the mounting location, in the interior of a flagpole/monopole approximately 47 feet off the ground, the antennas are not accessible to the general public and no mitigation measures are needed to comply with FCC guidelines. No access within two feet directly in front of the antennas themselves, such as might occur during maintenance activities, should be allowed while the site is in operation. Explanatory warning signs are required to be posted on the pole below the antennas, such that the signs are readily visible from any angle of approach to persons who might be conducting maintenance, to meet FCC-adopted guidelines.

Section 47 USC 322(c)(7)(iv) of the Telecommunications Act of **1996** forbids jurisdictions from regulating the placement, construction, or modification of Wireless Communications Facilities based on the environmental effects of RF emissions if these emissions comply with FCC standards. The RF emissions of the proposed facility, and the cumulative emissions of the facility and the nearby facility to the southeast, comply with FCC standards.

### **Conclusion**

As proposed and conditioned, the project is consistent with all applicable codes and policies of the Zoning Ordinance and General Plan/LCP. Please see Exhibit "B" ("Findings") for a complete listing of findings and evidence related to the above discussion.

### Staff Recommendation

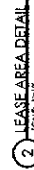
- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- APPROVAL of Application Number **06-0701**, based on the attached findings and conditions.

Supplementary reports and information referred to in this report are on file and available for viewing at the Santa Cruz County Planning Department, and are hereby made a part of the administrative record for the proposed project.

The County Code and General Plan, as well as hearing agendas and additional information are available online at: [www.co.santa-cruz.ca.us](http://www.co.santa-cruz.ca.us)

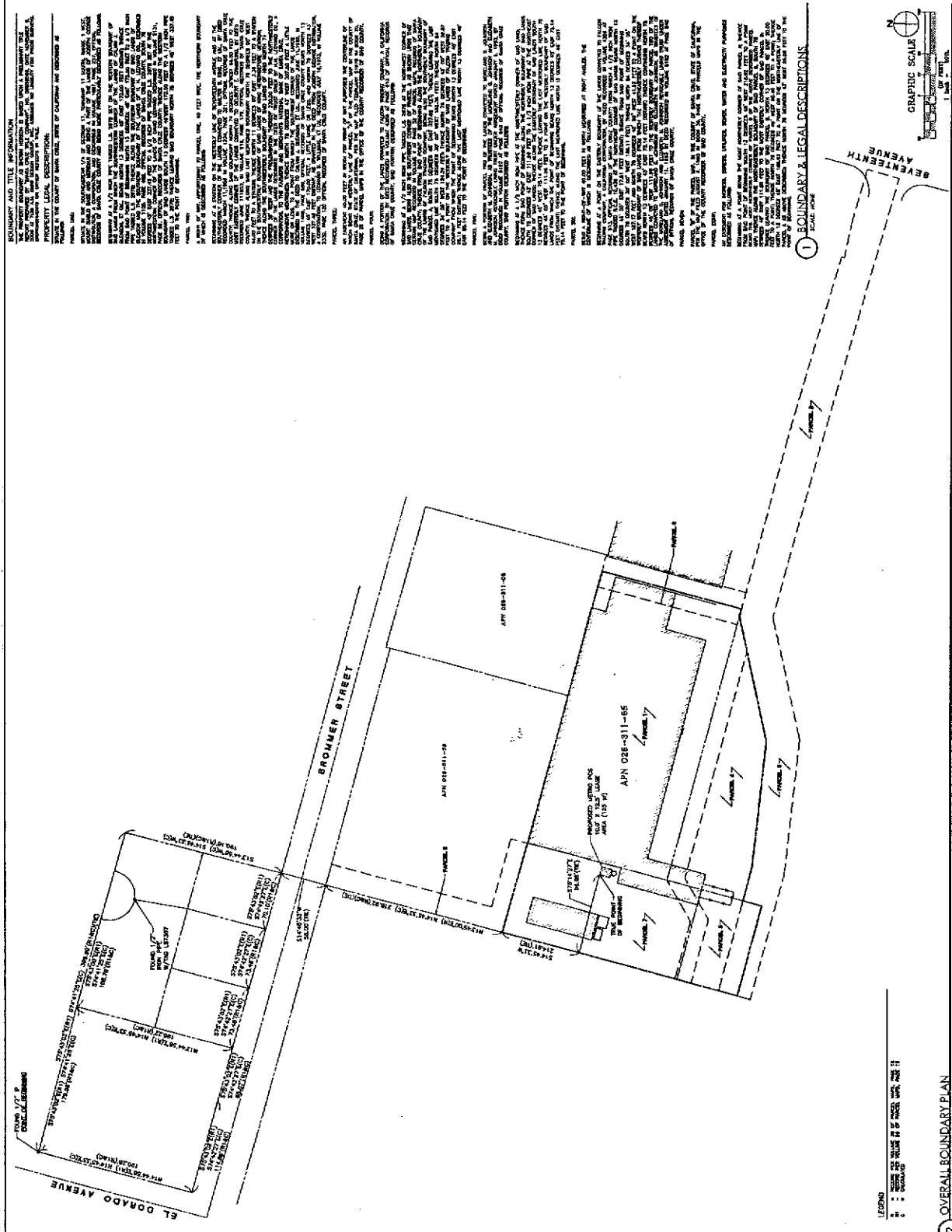
Report Prepared By: Cathy Graves  
Santa Cruz County **Planning** Department  
701 Ocean Street, ~~4th~~ Floor  
Santa Cruz CA 95060  
Phone Number: (831) 454-3141  
E-mail: [cathy.graves@co.santa-cruz.ca.us](mailto:cathy.graves@co.santa-cruz.ca.us)







## OVERALL BOUNDARY PLAN

[illegible]

REV.	DATE	DESCRIPTION	BY
	11/17/04	ISSUED FOR WORK ORDER	JMP
	11/20/06	CHANGED TO: NO. 00000000	JMP

DRAWN BY:	CHK:	APV:
DKN		DM

CURRENT ISSUE DATE: 11/30/06

ISSUED FOR: 100% ABOL

**PROJECT INFORMATION:**

**LEDYARD PROPERTIES**  
**SF16711-D**  
1053 17TH AVE.  
SANTA CRUZ, CA 95062  
APN NO. 026-311-65  
COUNTY OF SANTA CRUZ

SHEET TITLE:  
OVERALL BOUNDARY PLAN

SHEET NUMBER: \_\_\_\_\_ REVISION: \_\_\_\_\_

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**ACE-PCA**

## CONTENTS

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CONSULTANT:

SEAL:

REV.	DATE	DESCRIPTION
1	11/30/06	ISSUED FOR PERMIT
2	11/30/06	REVISIONS
3	11/30/06	REVISIONS
4	11/30/06	REVISIONS
5	11/30/06	REVISIONS
6	11/30/06	REVISIONS
7	11/30/06	REVISIONS
8	11/30/06	REVISIONS
9	11/30/06	REVISIONS
10	11/30/06	REVISIONS

DRAWN BY: JWP  
 CHECKED: JWP  
 APPROVED: JWP

CURRENT ISSUE DATE:  
 11/30/06

ISSUED FOR:  
 100% ZD's

PROJECT INFORMATION:  
**LEDYARD PROPERTIES**  
**SP16711-0**  
 1053 17TH AVE  
 SANTA CRUZ, CA 95062  
 APN NO. 028-311-65  
 COUNTY OF SANTA CRUZ

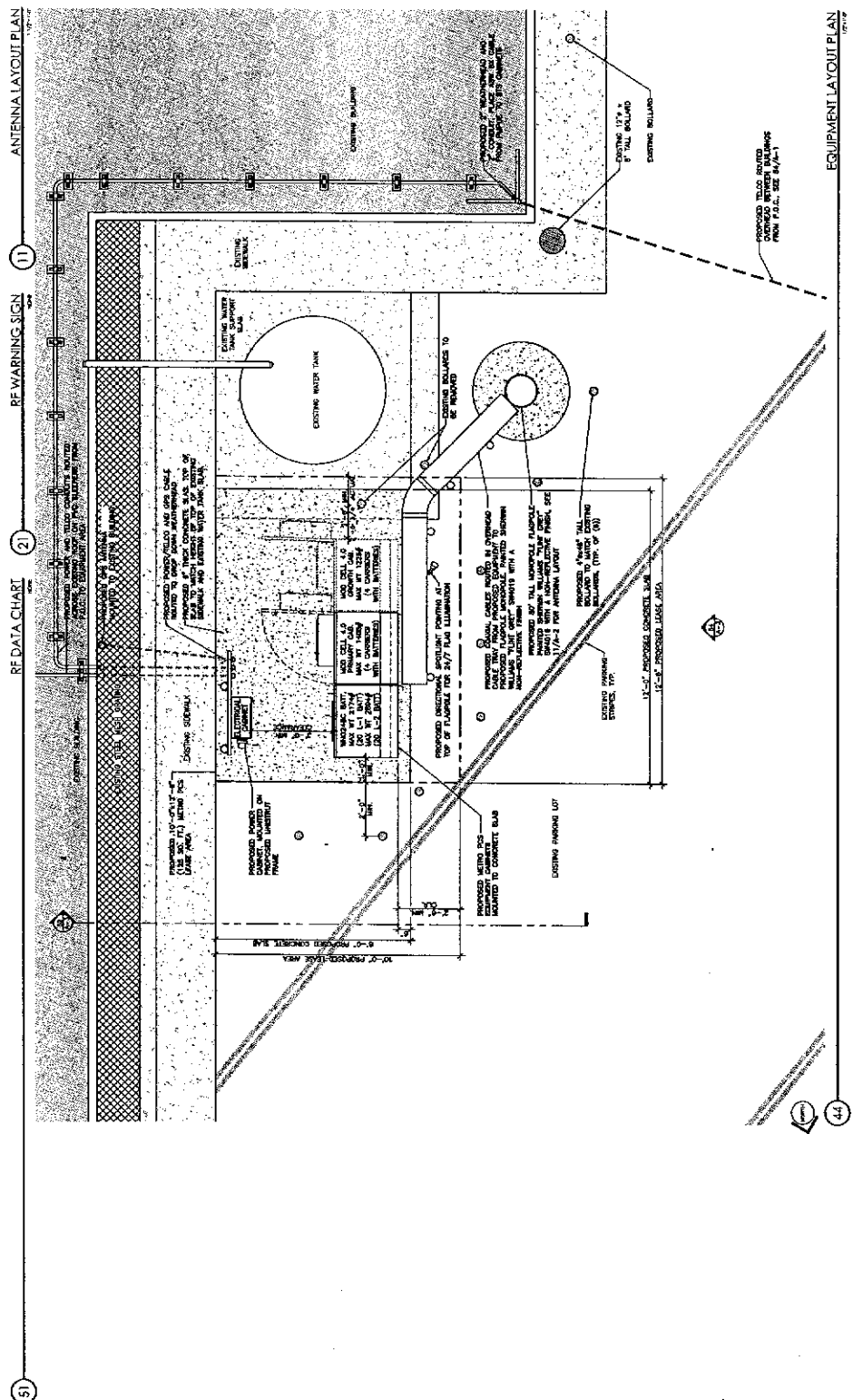
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**EQUIPMENT AND ANTENNA LAYOUT PLANS**  
 SHEET NUMBER:  
**A-2**  
 REVISION:

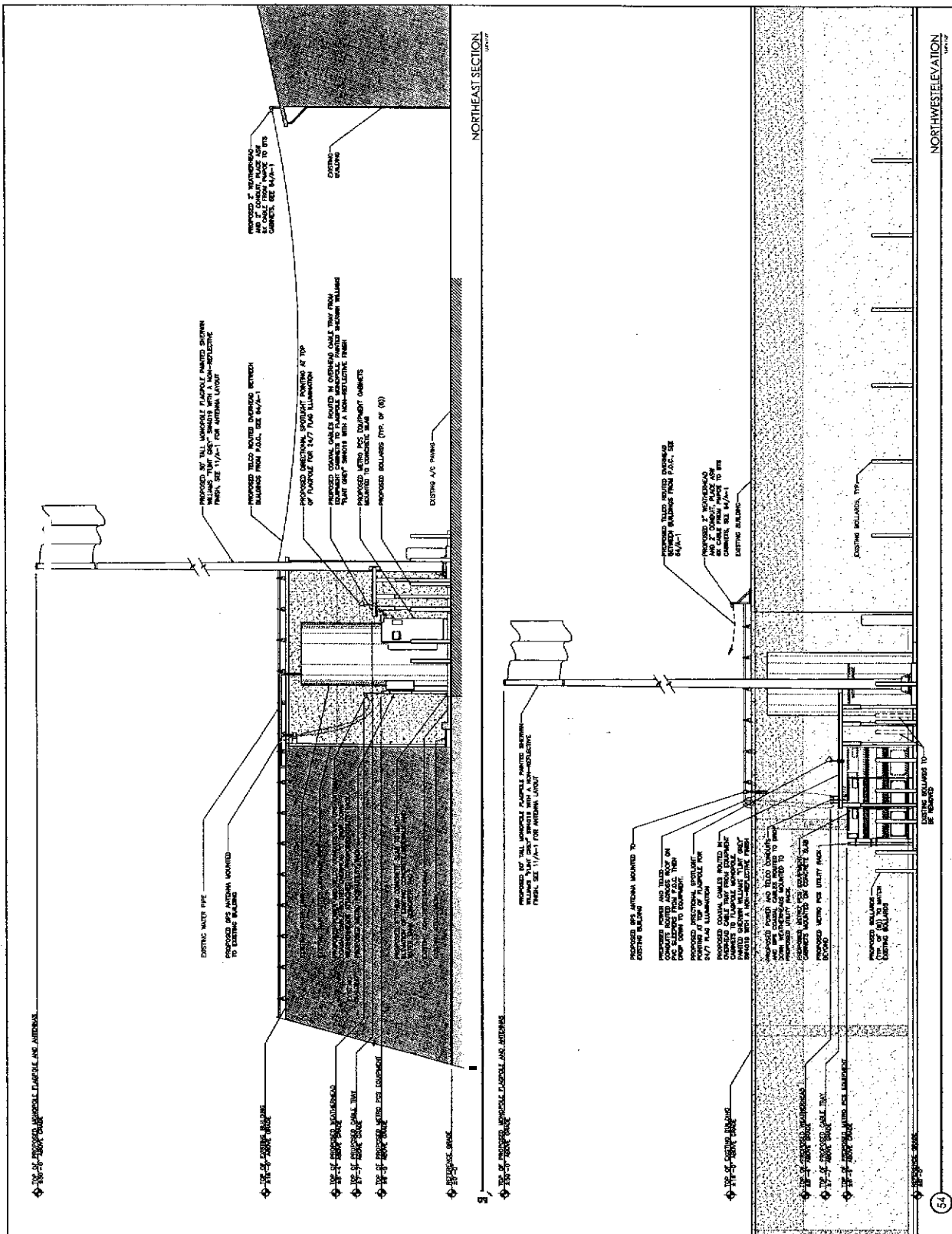
155-444

**NOTICE**  
 RF Controlled Area Beyond This Point  
 Radio Frequency (RF) emissions may exceed FCC standards for general public exposure. Only authorized workers are permitted to enter.  
 For further information, please call 1-800-843-4882 and reference Site number: 155-444.

Antenna Sector	# of Antennas	Antenna Model	Antenna Make	Antenna Make Length	Cable # and Port #	Cable Size	Main Cable Length	Cable # and Port #	Cable Size	Bottom Jumper Length	Top Jumper Length	Comments
ALPHA	1	147	147-01	147-01	147-01	147-01	147-01	147-01	147-01	147-01	147-01	Red White/Red
BETA	1	147	147-01	147-01	147-01	147-01	147-01	147-01	147-01	147-01	147-01	Red White/Red
CHARLIE	1	147	147-01	147-01	147-01	147-01	147-01	147-01	147-01	147-01	147-01	Red White/Red
DELTA	1	147	147-01	147-01	147-01	147-01	147-01	147-01	147-01	147-01	147-01	Red White/Red
GPS	1	147	147-01	147-01	147-01	147-01	147-01	147-01	147-01	147-01	147-01	Green White/Green

NOTE: ANTENNA MAKE LENGTH IS DOWN POSITIVE VALUE & DOWN ELECTRICAL TILT IS DOWN POSITIVE VALUE & DOWN





**metroPCS**  
 1000 PCH, INC.  
 100 ALABAMA VILLAGE PARKWAY  
 ALABAMA, CA 94501  
 PHONE: 916.253.2400  
 FAX: 916.461.1855

ARCHITECT:



CONSULTANT:

SEAL:

REV.	DATE	DESCRIPTION	BY
1	11/30/06	ISSUED FOR PERMITS	JAN
2	11/30/06	ISSUED FOR PERMITS	JAN

DRAWN BY	CHECKED	APPROVED
JAN	SH	

CURRENT ISSUE DATE:  
 11/30/06

SUBJECT:  
 100% ZD's

PROJECT INFORMATION:  
**LEDYARD PROPERTIES**  
**SF16711-D**  
 1053 177th AVE  
 SAN JOSE, CA 95135  
 APN NO. 026-311-65  
 COUNTY OF SANTA CRUZ

SHEET TITLE:  
 TOPOGRAPHIC/AREA  
 MAP

SHEET NUMBER:  
 REVISION:  
**Z-1**

155-461



TOPOGRAPHIC/AREA MAP  
 11/30/06  
 155-461

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SHEET NUMBER: **Z-2** REVISION:

## Wireless Communication Facility Use Permit Findings

1. The development of the proposed wireless communications facility as conditioned will not significantly affect any designated visual resources, environmentally sensitive habitat resources (as defined in the Santa Cruz County General Plan/LCP Sections 5.1, 5.10, and 8.6.6.), and/or other significant County resources, including agricultural, open space, and community character resources; or there are no other environmentally equivalent and/or superior and technically feasible alternatives to the proposed wireless communications facility as conditioned (including alternative locations and/or designs) with less visual and/or other resource impacts and the proposed facility has been modified by condition and/or project design to minimize and mitigate its visual and other resource impacts.

This finding can be made, in that the proposed facility would be located in an area that is not a designated visual resource area. The base of the proposed monopole is located more than 300 feet from all but one small portion of residentially zoned area to reduce visual impacts to surrounding residences. Additionally, the structure has been designed such that the three antennas are internally mounted and are not visible, and the proposal utilizes a stealth-type design that mimics structures normally found in the built environment where the facility is located. The support facilities will be located between two existing buildings and will not be visible off-site.

County Code Section 13.10.663(a)(9) requires that the base of any new freestanding telecommunications tower be set back a minimum of 300-feet from residentially zoned parcels to minimize visual impacts that may result from a tower structure. This requirement may be waived by the decision making body, however, if it is determined that the tower will not be readily visible from neighboring residential structures or that service could not be provided to a significant area without construction of the tower. The proposed project is unique in that the area where it is proposed to be located is within 300-feet of two residentially zoned (RM-6) parcels, the closest one of which is located approximately 140 feet away and contains a service commercial use (026-311-13). The other parcel does contain a single-family dwelling (026-311-12) and that dwelling is located approximately 380-feet from the base of the proposed tower. The project is also unique in that the "tower" has been camouflaged and all antennas are completely contained within a flagpole/monopole. A flagpole such as the one proposed could be installed on the subject parcel with, at most, a minor administrative permit for which the fee would be waived. Flagpoles displaying the American flag are commonly found in large service commercial or industrial developments and will appear to be part of a common built environment. So, while the flagpole will be visible it will not be perceived as a freestanding tower and the wireless communication facility, consisting of antennas and equipment cabinets and other ancillary equipment, will not itself be visible,

To reduce any potential visual impacts, conditions of approval have been included to eliminate 24-hour lighting, such that the flag will be lowered and raised daily, and to limit the size of the flag to the smallest possible given the size and height of the pole.

To ensure that this project's long-term visual impact is minimized, several conditions of approval are proposed including allowing only manual lighting, requiring that the pole be

maintained in good condition throughout it's life (including painting as needed), and maintaining the flag in good condition.

An alternatives analysis was not required for this proposal as the parcel is not within a restricted or prohibited zone district. The applicant, did, however, identify several possible alternative locations that would have potentially allowed a building-mounted or co-located facility, either of which is preferable to a monopole that is not a "stealth" installation. Other parcels identified included the Central Fire Protection District station at 930-17<sup>th</sup> Avenue, with no interest in leasing; Brommer Street Storage at 1300 Brommer Street, the owners of which were only interested in a short term lease; Paradise Landscape at 1358 Brommer Street, where Code Compliance issues prevent the location of a wireless communication facility; a light industrial complex at 992 17<sup>th</sup> Avenue, the owners of which were not interested in a lease; and the Sprint/Nextel facility discussed above. Because the other nearby sites and one potential co-location were found not to be viable, this site was chosen as it is not in a restricted or prohibited area and the tower base could be located a minimum of 300-feet from all but one small portion of residentially zoned properties.

2. The site is adequate for the development of the proposed wireless communications facility and, for sites located in one of the prohibited and/or restricted areas set forth in Sections 13.10.661(b) and 13.10.661 (c), that the applicant has demonstrated that there are not environmentally equivalent or superior and technically feasible: (1) alternative sites outside the prohibited and restricted areas; and/or (2) alternative designs for the proposed facility as conditioned.

This finding can be made, in that the proposed facility meets all site standards for the C-4 zone district as it would be located a minimum of 94-feet from the nearest property line. The maximum height allowed for a free-standing tower in the C-4 zone district would be 85-feet (reference Planning Department Policy/Ordinance Interpretation WCF-01) and the proposed height is 50-feet. Because the existing area is currently paved, no trees or vegetation are proposed to be removed and no grading is necessary. The proposed site is not located on one of the prohibited and/or restricted areas set forth in Sections 13.10.661(b) and 13.10.661 (c), so an alternatives analysis was not required.

The applicant, did, however, identify five possible alternative locations that would have potentially allowed a building-mounted or co-located facility, either of which is preferable to a monopole that is not a "stealth" installation. For a variety of reasons (see finding above) none of those sites proved to be viable. Because the other nearby sites and one potential co-location were found not to be viable, this site was chosen as it is not in a restricted or prohibited area and the tower base could be located a minimum of all but one small portion of residentially zoned area.

3. The subject property upon which the wireless communications facility is to be built is in compliance with all rules and regulations pertaining to zoning uses, subdivisions and any other applicable provisions of this title (County Code 13.10.660) and that all zoning violation abatement costs, if any, have been paid.

This finding can be made, in that the existing commercial use of the subject property is in compliance with the requirements of the zone district and General Plan designation, in which it is



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Owner: Ledyard properties

located. Another application, 05-0439, is currently in process to establish a Master Occupancy Program (MOP) for the three parcels that make up the campus. The requested permit will not affect the MOP as the proposed use is appurtenant and accessory to the main storage, warehouse and shipping use, and accessory structures and uses will be allowed as part of the MOP.

No zoning violation abatement fees are applicable to the subject parcel.

4. The proposed wireless communication facility as conditioned will not create a hazard for aircraft in flight.

This finding can be made, in that the proposed wireless communications facility will be located on a flagpole/monopole, which will be approximately 50-feet in height, and this elevation is too low to interfere with an aircraft in flight.

5. The proposed wireless communication facility as conditioned is in compliance with all FCC and California PUC standards and requirements.

This finding can be made, in that the maximum ambient RF exposure anywhere on the ground, for the proposed Metro PCS operation alone, will be 0.31% of the applicable public exposure limit established by the Federal Communications Commission (FCC). The maximum calculated cumulative level on the ground for the simultaneous operation of both carriers (including the Sprint/Nextel facility to the southeast) would be 0.39% of the public exposure limit. The maximum calculated cumulative level on the second floor elevation of any nearby building would be **0.63%** of the public exposure limit, and the maximum calculated cumulative level at the second-floor elevation of Shoreline Middle School would be 0.25% of the public exposure limit. According to the study findings, the projected exposure limits include “worst-case” assumptions and are expected to overstate actual power density levels.

6. For wireless communication facilities in the coastal zone, the proposed wireless communication facility as conditioned is consistent with the all applicable requirements of the Local Coastal Program.

This finding can be made, in that the proposed project site is not located within the coastal zone.

## Development Permit Findings

1. That the proposed location of the project and the conditions under which it would be operated or maintained will not be detrimental to the health, safety, or welfare of persons residing or working in the neighborhood or the general public, and will not result in inefficient or wasteful use of energy, and will not be materially injurious to properties or improvements in the vicinity.

This finding can be made, as the proposed wireless facility and associated equipment will be required to comply with all applicable building and electrical codes, and the standards of the California Public Utilities Commission (PUC) and the Federal Communications Commission (FCC). The maximum ambient RF exposure anywhere on the ground, for the proposed Metro PCS operation alone, will be 0.31% of the applicable public exposure limit established by the Federal Communications Commission (FCC). The maximum calculated cumulative level on the ground for the simultaneous operation of both carriers (including the Sprint/Nextel facility to the southeast) would be 0.39% of the public exposure limit. The maximum calculated cumulative level on the second floor elevation of any nearby building would be 0.63% of the public exposure limit, and the maximum calculated cumulative level at the second-floor elevation of Shoreline Middle School would be 0.25% of the public exposure limit.

Condition of Approval IV.H. requires that the most recent and efficient technology will be used and upgrades to more efficient and effective technologies will be required to occur as new technologies are developed.

The project will not be materially injurious to properties or improvements in the vicinity in that the structure has been designed such that the three antennas are internally mounted and are not visible, and the proposal utilizes a stealth-type design that mimics structures normally found in the built environment where the facility is located. Flagpoles displaying the American flag are commonly found in large service commercial or industrial developments and will appear to be part of a common built environment. The support facilities will be located between two existing buildings on site and will not be visible off-site.

To reduce any potential visual impacts, conditions of approval have been included to eliminate 24-hour lighting, such that the flag will be lowered and raised daily, and to limit the size of the flag to the smallest possible given the size and height of the pole. To ensure that this project's long-term visual impact is minimized, several conditions of approval are proposed including allowing only manual lighting, requiring that the pole be maintained in good condition throughout its life (including painting as needed), and maintaining the flag in good condition.

Noise levels produced by the associated equipment are less than that of a residential air conditioning unit, and will be less than those currently generated by the refrigeration compressors on site.

2. That the proposed location of the project and the conditions under which it would be operated or maintained will be consistent with all pertinent County ordinances and the purpose of the zone district in which the site is located.

This finding can be made, in that the proposed location of the wireless communications facility and the conditions under which it would be operated or maintained will be consistent with all pertinent County ordinances and the purpose of the C-4 (Commercial Service) zone district in that the primary use of the property will remain a warehouse and storage facility and the wireless communications facility, that meets all current site standards for the zone district, will be an accessory and ancillary use. The proposed wireless communication facility is an allowed use in the C-4 and M-1 zone districts, as neither of those designations are considered to be “prohibited” or “restricted” per County Code Section 13.10.661(b) and (c), and complies with all applicable provisions of the County’s Wireless Communications Facility Ordinance (Sections 13.10.660 through 13.10.668) as the proposal utilizes a stealth-type design that mimics structures normally found in the built environment where the facility is located. The support facilities will be located between two existing buildings and will not be visible off-site.

County Code Section 13.10.663(a)(9) requires that the base of any new freestanding telecommunications tower be set back a minimum of 300-feet from residentially zoned parcels to minimize visual impacts that may result from a tower structure. This requirement may be waived by the decision making body, however, if it is determined that the tower will not be readily visible from neighboring residential structures or that service could not be provided to a significant area without construction of the tower. The proposed project is unique in that the area where it is proposed to be located is within 300-feet of two residentially zoned (RM-6) parcels, the closest one of which is located approximately 140 feet away and contains a service commercial use (026-311-13). The other parcel does contain a single-family dwelling (026-311-12) and that dwelling is located approximately 380-feet from the base of the proposed tower. The project is also unique in that the “tower” has been camouflaged and all antennas are completely contained within a flagpole/honopole. A flagpole such as the one proposed could be installed on the subject parcel with, at most, a minor administrative permit for which the fee would be waived. Flagpoles displaying the American flag are commonly found in large service commercial or industrial developments and will appear to be part of a common built environment. So, while the flagpole will be visible it will not be perceived as a freestanding tower and the wireless communication facility, consisting of antennas and equipment cabinets and other ancillary equipment, will not itself be visible,

3. That the proposed use is consistent with all elements of the County General Plan and with any specific plan which has been adopted for the area.

This finding can be made, in that the proposed commercial use is consistent with the use and density requirements specified for the Service Commercial (C-S) land use designation in the County General Plan. The proposed facility will not adversely impact the light, solar opportunities, air and/or open space available to other structures or properties since the proposed flagpole/honopole meets all setbacks and site standards for the C-4 zone district as specified in Objective 8.1.3 of the General Plan. The proposed development is a conditionally allowed use in the C-4 and M-1 zone districts.

The proposed wireless communications facility will not adversely impact the light, solar opportunities, air, and/or open space available to other structures or properties, and meets all current site, design, and development standards for the zone district as specified in Policy 8.5.2

(Commercial Compatibility with Other Uses), in that the wireless communications facility has been reviewed by the County's Urban Designer and found to be in compliance with the Site, Architectural and Design Review Ordinance.

The proposed wireless communications facility will not be improperly proportioned to the parcel size or the character of the neighborhood as specified in General Plan Policy 8.6.1 (Maintaining a Relationship Between Structure and Parcel Sizes), in that the proposed wireless communications facility will comply with the site standards for the C-4 zone district (including setbacks and height) and will result in a structure consistent with a design that could be approved on any other commercial parcel that meets the criteria of the County's Wireless Communications Facility Ordinance.

A specific plan has not been adopted for this portion of the County.

4. That the proposed use will not overload utilities and will not generate more than the acceptable level of traffic on the streets in the vicinity.

This finding can be made, in that the proposed wireless communications facility is to be constructed on an existing developed lot. The construction of the flagpole/monopole and the associated equipment will not overload utilities since no water or sewer service will be used and adequate electricity is available to the site. The project will not generate traffic on the streets in the vicinity in that the facilities are planned for unattended operation. Maintenance personnel will visit the site once per month to ensure that equipment is operating within regulated guidelines and the safety, efficiency and general traffic movement in the area will be unaffected. Parking for maintenance is provided on site. All access to the proposed facility will be provided on existing public streets and driveways.

5. That the proposed project will complement and harmonize with the existing and proposed land uses in the vicinity and will be compatible with the physical design aspects, land use intensities, and dwelling unit densities of the neighborhood.

This finding can be made, as the proposed facility will consist of internally mounted antennas inside a flagpole/monopole similar to those commonly found in large service commercial or industrial developments and will appear to be part of a common built environment. Equipment will be screened from public view by existing buildings and fences. Noise levels are less than that of a residential air conditioning unit, and will be less than those currently generated by the refrigeration compressors on site.

6. The proposed development project is consistent with the Design Standards and Guidelines (sections 13.11.070 through 13.11.076), and any other applicable requirements of this chapter.

This finding can be made, in that the proposed wireless communications facility has been designed such that the three antennas are internally mounted and are not visible, and the proposal utilizes a stealth-type design that mimics structures normally found in the built environment where the facility is located. Flagpoles displaying the American flag are commonly found in large service commercial or industrial developments and will appear to be part of a common built

**Application#:** 06-0701  
**APN:** 026-311-65  
**Owner:** Ledyard properties

environment. The support facilities will be located between two existing buildings on site and will not be visible off-site.

To reduce any potential visual impacts, conditions of approval have been included to eliminate 24-hour lighting, such that the flag will be lowered and raised daily, and to limit the size of the flag to the smallest possible given the size and height of the pole. To ensure that this project's long-term visual impact is minimized, several conditions of approval are proposed including allowing only manual lighting, requiring that the pole be maintained in good condition throughout its life (including painting as needed), and maintaining the flag in good condition.

## Conditions of Approval

Exhibit A: Project plans prepared by Omni Design Group, 8 sheet, dated 11/30/06

- I. This permit authorizes the construction of a new wireless communications facility including three, 56-inch antennas inside a 50-foot flagpole monopole, three associated equipment cabinets, two power/telco boxes and a GPS antenna. Prior to exercising any rights granted by this permit including, without limitation, any construction or site disturbance, the applicant/owner shall:
  - A. Sign, date, and return to the Planning Department one copy of the approval to indicate acceptance and agreement with the conditions thereof.
  - B. Obtain a Building Permit from the Santa Cruz County Building Official.
  - C. The applicant shall obtain approval from the California Public Utilities Commission and the Federal Communications Commission to install and operate this facility.
- II. Prior to issuance of a Building Permit the applicant/owner shall:
  - A. Submit proof that these conditions have been recorded in the official records of the County of Santa Cruz (Office of the County Recorder).
  - B. Submit final architectural plans for review and approval by the Planning Department. The final plans shall be in substantial compliance with the plans marked Exhibit "A" on file with the Planning Department. Any changes from the approved Exhibit "A" for this development permit on the plans submitted for the Building Permit must be clearly called out and labeled by standard architectural methods to indicate such changes. Any changes that are not properly called out and labeled will not be authorized by any Building Permit that is issued for the proposed development. The final plans shall include the following additional information:
    1. Identify color and finish of exterior materials for Planning Department approval. All colors and materials must be non-reflective and blend with the existing infrastructure and/or provide camouflage. All roof-mounted equipment must be painted to match the existing buildings. All color boards must be no larger than 8.5" w x 11" h x 1/16"
    2. Identify the height and material of fencing surrounding the lease area for Planning Department approval.
    3. Identify the size of the flag proposed to be flown from the flagpole. The flag shall not be so large as to create visual impacts. The size of the flag and the relationship to the size of the flagpole shall be reviewed and approved by the County's Urban Designer.

4. All antennas shall be located within the flagpole/monopole. No exterior antennas are permitted.
  5. All new electric and telecommunications lines shall be placed underground, with the exception of one overhead telco cable routed overhead between existing buildings.
  6. Details showing compliance with fire department requirements.
  7. A lighting plan. All lighting must be manual and must not be visible from neighboring properties. No 24-hour lighting is permitted for the flag. The flag must be raised and lowered daily.
- C. To ensure that the storage of hazardous materials on the site does not result in adverse environmental impacts, the applicant shall submit a Hazardous Materials Management Plan for review and approval by the County Department of Environmental Health Services, if required.
- D. To guarantee that the flagpole/monopole remains in good visual condition **and** to ensure the continued provision of mitigation of the visual impact of the wireless communications facility, the applicant shall submit a maintenance program prior to building permit issuance which includes the following:
1. A signed contract for maintenance with the company that provides the exterior paint, for annual visual inspection and follow up repair, painting, and resurfacing as necessary.
  2. A signed contract for maintenance of the flag that includes raising and lowering the flag daily and as required for weather conditions, and replacement of the flag as needed.
- E. Submit four copies of the approved Discretionary Permit with the Conditions of Approval attached. The Conditions of Approval shall be recorded prior to submittal, if applicable.
- F. Obtain an Environmental Health Clearance for this project from the County Department of Environmental Health Services.
- G. Meet all requirements and pay any applicable plan check fee of the Central Fire Protection District.
- H. Submit proof of approval from the Federal Aviation Administration (FAA) for the proposed tower. Any modifications to the tower required by the FAA, such as required lights or painting, may require an amendment to this permit.
- III. All construction shall be performed according to the approved plans for the Building Permit. Prior to final building inspection, the applicant/owner must meet the following conditions:

- A. All site improvements shown on the final approved Building Permit plans shall be installed.
  - B. All inspections required by the building permit shall be completed to the satisfaction of the County Building Official.
  - C. The Hazardous Materials Management Plan, if required, shall be approved by the County Department of Environmental Health Services.
  - D. Pursuant to Sections 16.40.040 and 16.42.100 of the County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this development, any artifact or other evidence of an historic archaeological resource or a Native American cultural site is discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner if the discovery contains human remains, or the Planning Director if the discovery contains no human remains. The procedures established in Sections 16.40.040 and 16.42.100, shall be observed.
- N. Operational Conditions
- A. In the event that future County inspections of the subject property disclose noncompliance with any Conditions of this approval or any violation of the County Code, the owner shall pay to the County the full cost of such County inspections, including any follow-up inspections and/or necessary enforcement actions, up to and including permit revocation.
  - B. The exterior finish and materials of the wireless communication facility must be maintained on an annual basis to continue to blend with the existing utilities infrastructure. Additional paint and/or replacement materials shall be installed as necessary to blend the wireless communication facility with the existing utilities infrastructure.
  - C. The flag shall be maintained and replaced as necessary. It shall be raised and lowered daily and as required by weather conditions. No 24-hour lighting is allowed.
  - D. The operator of the wireless communication facility must submit within 90 days of commencement of normal operations (or within 90 days of any major modification of power output of the facility) a written report to the Santa Cruz County Planning Department documenting the measurements and findings with respect to compliance with the established Federal Communications Commission (FCC) Non-Ionizing Electromagnetic Radiation (NEIR) exposure standard. The wireless communication facility must remain in continued compliance with the NEIR standard established by the FCC at all times. Failure to submit required reports or to remain in continued compliance with the NEIR standard established by the FCC will be a violation of the terms of this permit.



- E. All noise generated from the approved use shall comply with the standards of the County General Plan and shall not exceed the existing noise level on the site.
- F. If, in the future, the pole based utilities are relocated underground at this location, the operator of the wireless communication facility must abandon the facility and be responsible for the removal of all permanent structures and the restoration of the site as needed to re-establish the area consistent with the character of the surrounding development.
- G. If, as a result of future scientific studies and alterations of industry-wide standards resulting from those studies, substantial evidence is presented to Santa Cruz County that radio frequency transmissions may pose a hazard to human health and/or safety, the Santa Cruz County Planning Department shall set a public hearing and in its sole discretion, may revoke or modify the conditions of this permit.
- H. If future technological advances would allow for reduced visual impacts resulting from the proposed telecommunication facility, the operator of the wireless communication facility must make those modifications which would allow for reduced visual impact of the proposed facility as part of the normal replacement schedule. If, in the future, the facility is no longer needed, the operator of the wireless communication facility must abandon the facility and be responsible for the removal of all permanent structures and the restoration of the site as needed to re-establish the area consistent with the character of the surrounding natural landscape.
- I. Any modification in the type of equipment shall be reviewed and acted on by the Planning Department staff. The County may deny or modify the conditions at this time, or the Planning Director may refer it for public hearing before the Zoning Administrator.
- J. A Planning Department review that includes a public hearing shall be required for any future co-location at this wireless communications facility.
- K. The access road shall be permanently maintained to allow access to emergency vehicles at all times. Any obstruction of the access road, as a result of neglect or lack of maintenance, will be in violation of the conditions of this permit.
- L. The equipment cabinet area must be locked at all times except when authorized personnel are present. The antennas must not be accessible to the public.
- M. All site, building, security and landscape lighting shall be directed onto the lease site and away from adjacent properties. Light sources shall not be visible from adjacent properties. Building and security lighting shall be integrated into the building design and shall be operated with a manual on/off switch. The site shall be unlit except when authorized personnel are present at night.

- N. No person shall come within 2-feet of the antennas when the site is in operation. The NEIR hazard zone shall be posted with bilingual NEIR hazard warning signage, such that the signs are clearly visible from any angle of approach to persons who may need to work within that distance, including the roof of the nearby buildings on site. The signs shall indicate the facility operator and a 24-hour emergency contact who is authorized by the applicant to act on behalf of the applicant regarding an emergency situation.
- V. As a condition of this development approval, the holder of this development approval ("Development Approval Holder"), is required to defend, indemnify, and hold harmless the COUNTY, its officers, employees, **and** agents, from and against any claim (including attorneys' fees), against the COUNTY, its officers, employees, and agents to attack, set aside, void, or annul this development approval of the COUNTY or any subsequent amendment of this development approval which is requested by the Development Approval Holder.
- COUNTY shall promptly notify the Development Approval Holder of any claim, action, or proceeding against which the COUNTY seeks to be defended, indemnified, or held harmless. COUNTY shall cooperate fully in such defense. If COUNTY fails to notify the Development Approval Holder within sixty (60) days of any such claim, action, or proceeding, or fails to cooperate fully in the defense thereof, the Development Approval Holder shall not thereafter be responsible to defend, indemnify, or hold harmless the COUNTY if such failure to notify or cooperate was significantly prejudicial to the Development Approval Holder.
- Nothing contained herein shall prohibit the COUNTY from participating in the defense of any claim, action, or proceeding if both of the following occur:
1. COUNTY bears its own attorney's fees and costs; and
  2. COUNTY defends the action in good faith.
- C. Settlement. The Development Approval Holder shall not be required to pay or perform **any** settlement unless such Development Approval Holder has approved the settlement. When representing the County, the Development Approval Holder shall not enter into any stipulation or settlement modifying or affecting the interpretation or validity of any of the terms or conditions of the development approval without the prior written consent of the County.
- D. Successors Bound. "Development Approval Holder" shall include the applicant and the successor(s) in interest, transferee(s), and assign(s) of the applicant.
- E. Within 30 days of the issuance of this development approval, the Development Approval Holder shall record in the office of the Santa Cruz County Recorder an agreement which incorporates the provisions of this condition, or this development approval shall become null and void.

Application # 06-0701  
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Owner: Ledyard properties

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Minor variations to this permit which do not affect the overall concept or density may be approved by **the Planning Director** at the request of the applicant or **staff** in accordance with Chapter 18.10 of the County Code.

**Please note: This permit expires two years from the effective date on the expiration date listed below unless you obtain the required permits and commence construction.**

**Approval Date:** \_\_\_\_\_

**Effective Date:** \_\_\_\_\_

**Expiration Date:** \_\_\_\_\_

\_\_\_\_\_  
**Don Bussey**  
**Deputy Zoning Administrator**

\_\_\_\_\_  
**Cathy Graves**  
**Project Planner**

---

Appeals: Any property owner, or other person aggrieved, or any other person whose interests are adversely affected by any act or determination **of the Zoning Administrator**, may appeal **the** act or determination to the Planning Commission in accordance with chapter 18.10 of the **Santa** Cruz County Code.

# CALIFORNIA ENVIRONMENTAL QUALITY ACT

## NOTICE OF EXEMPTION

The Santa Cruz County Planning Department has reviewed the project described below and has determined that it is exempt from the provisions of CEQA as specified in Sections 15061 - 15332 of CEQA for the reason(s) which have been specified in this document.

Application Number: 06-0701

Assessor Parcel Number: 026-311-65

Project Location: 1053 17th Avenue, Santa Cruz

**Project Description: Proposal to construct a wireless communications facility**

**Person or Agency Proposing Project: Evan Shepherd Reiff for Peacock Associates**

**Contact Phone Number: (510) 420-5701**

- A. ☐ The proposed activity is not a project under CEQA Guidelines Section 15378.  
B. ☐ The proposed activity is not subject to CEQA as specified under CEQA Guidelines Section 15060 (c).  
C. ☐ **Ministerial Project** involving only the use of fixed standards or objective measurements without personal judgment.  
D. ☐ **Statutory Exemption** other than a Ministerial Project (CEQA Guidelines Section 15260 to 15285).

Specify type:

- E. ☒ **Categorical Exemption**

Specify type: Class 3 - New Construction of Small Structures (Section 15303)

**F. Reasons why the project is exempt:**

Proposal to construct wireless communications facility and site improvements at an existing commercial development in an area designated for service commercial uses.

In addition, none of the conditions described in Section 15300.2 apply to this project.

\_\_\_\_\_  
Cathy Graves, Project Planner

Date: \_\_\_\_\_

Electronically Redrawn 7/22/98 rw  
 Rev 11/15/98 CB (9-0038714 & 15, LBA 1-63 & 64)  
 Rev 3/19/03 rvm (parcel 61 accepted to all)  
 Rev 3/1/05 rvm (4-0050122, comb. 1-65)  
 Rev. 10/28/05 mid (st. removed)

# FOR TAX PURPOSES ONLY

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POR. OF S.E. 1/4 SEC. 17,  
 T.11S, R.1W, M.D.B. & M.

76RS25  
 12/22/80

Tax Area Code  
 82-040

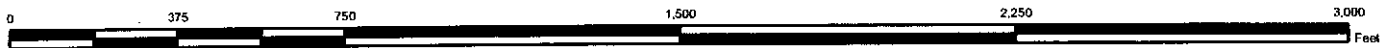
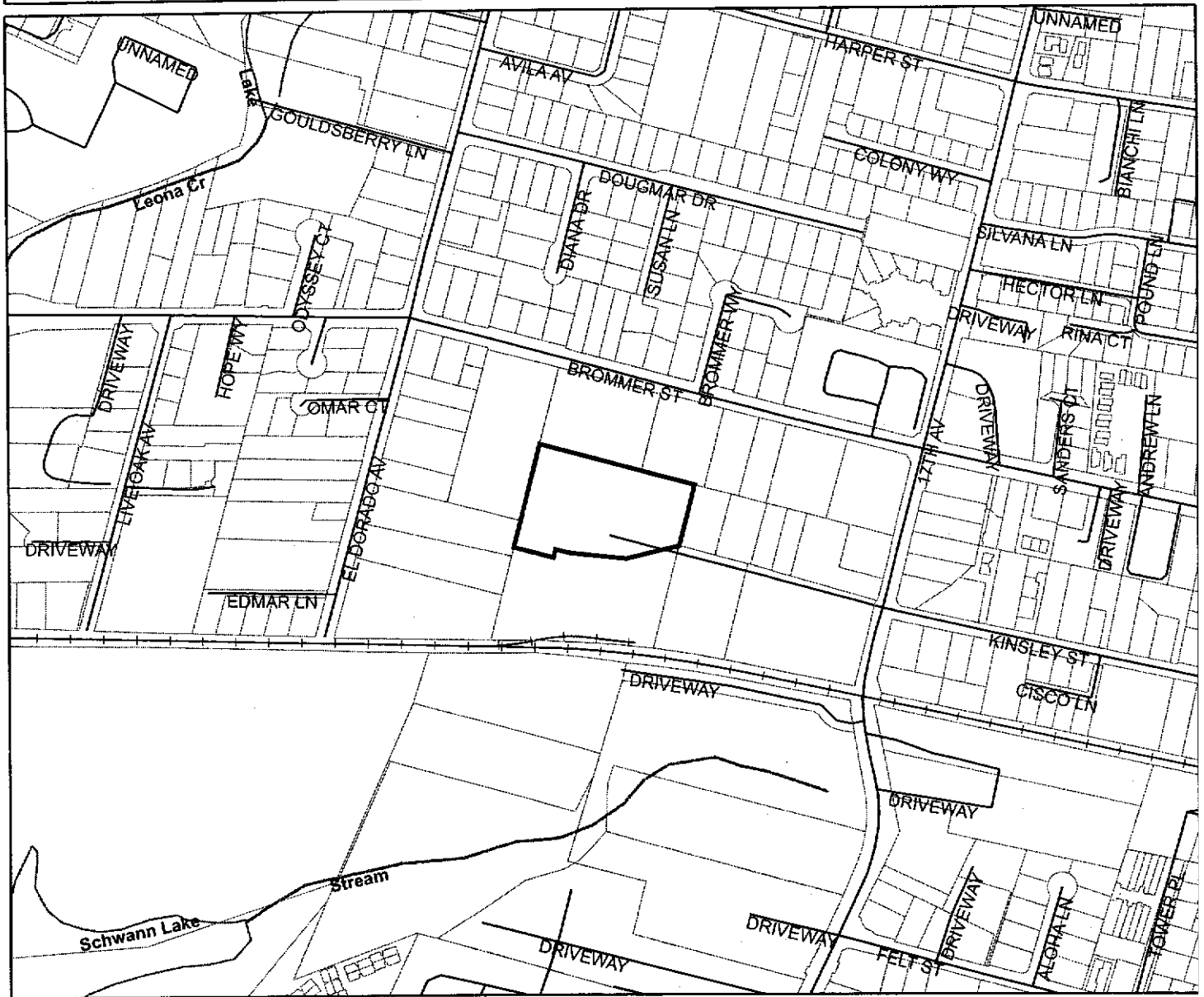
26-31

Note - Assessor's Parcel & Block







Assessor's Map No. 26-31  
 County of Santa Cruz, Calif.

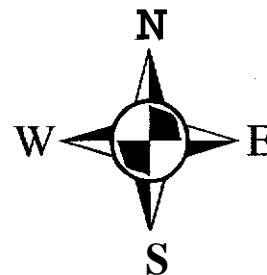


# Location Map



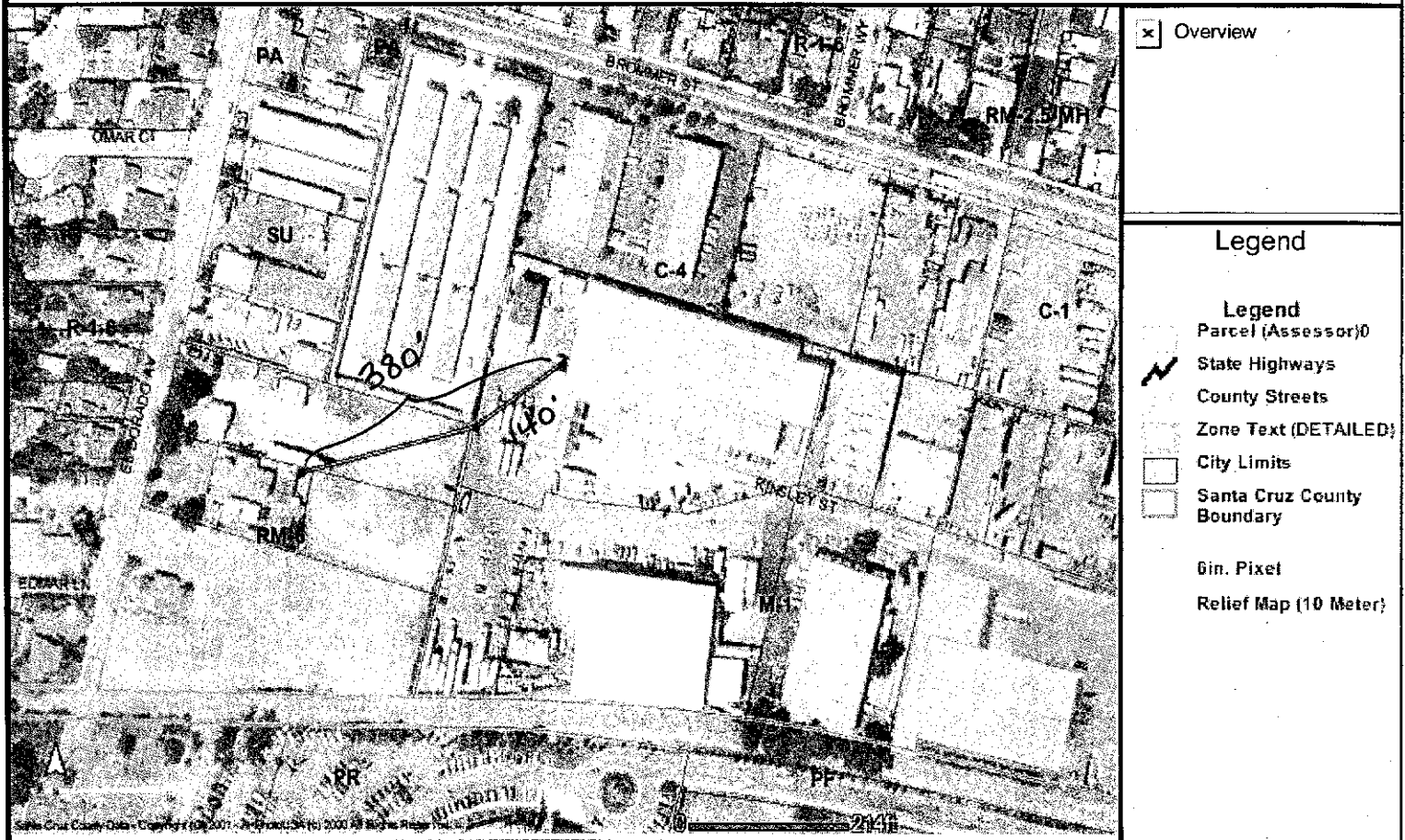
## Legend

-  APN 026-311-65
-  Assessors Parcels
-  Streets
-  INTERMITTENT STREAM
-  PERENNIAL STREAM
-  Railroads



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County of Santa Cruz  
Planning Department  
December 2006

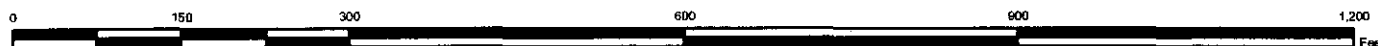
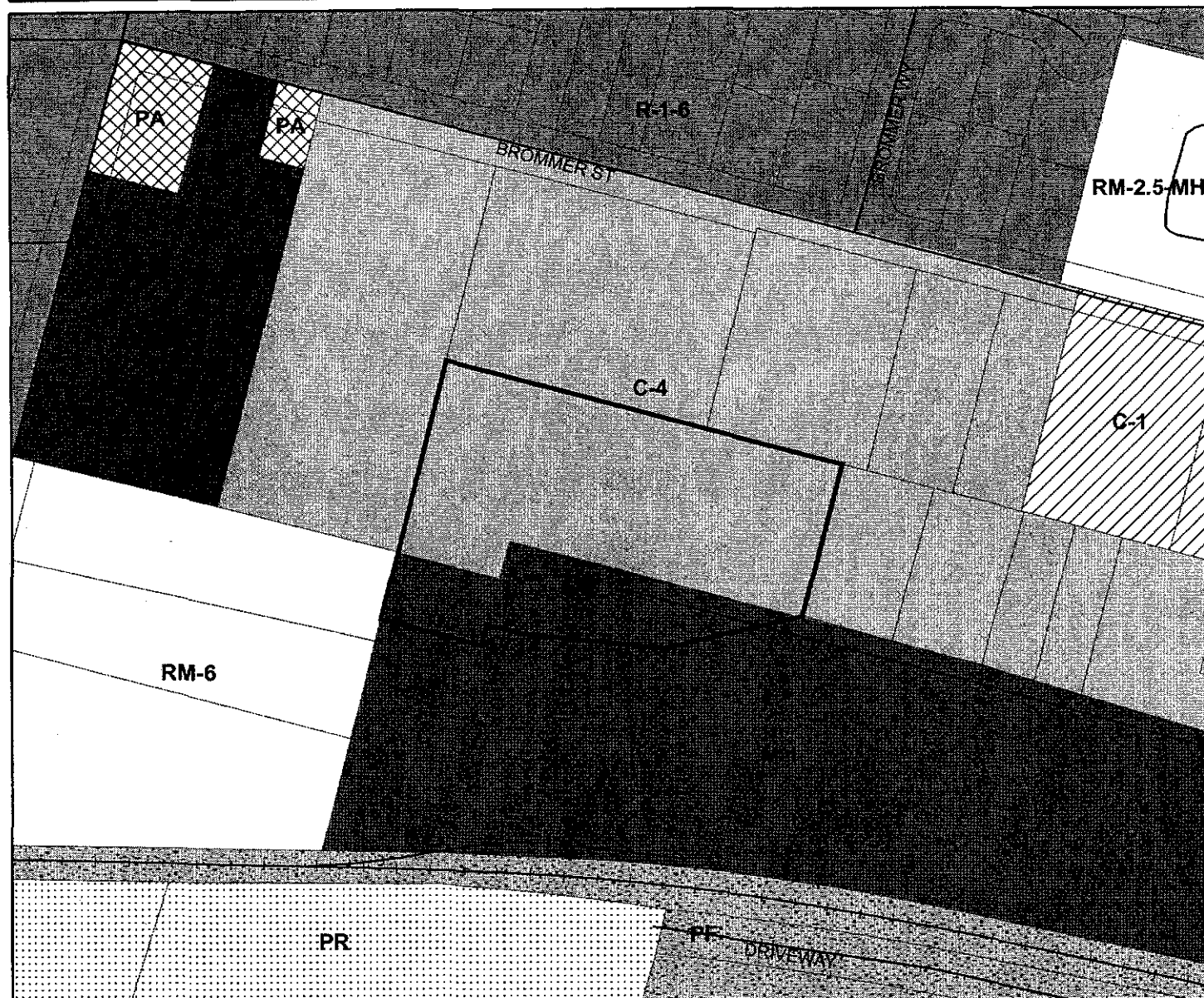
06-0701



**Location of Residentially Zoned Property (140' from monopole)  
and Residence (380' from monopole)**

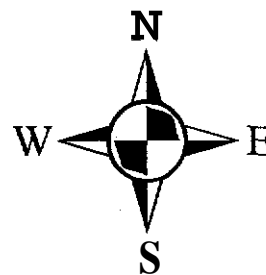


# Zoning Map



## Legend

- APN 026-311-65
- Assessors Parcels
- streets
- Railroads
- COMMERCIAL SERVICE (C-4)
- RESIDENTIAL-SINGLE FAMILY (R-1)
- LIGHT INDUSTRIAL (M-1)
- SPECIAL USE (SU)
- RESIDENTIAL-MULTIFAMILY (RM)
- COMMERCIAL-PROF OFFICE (PA)
- COMMERCIAL-NEIGHBORHOOD (G1)
- PUBLIC FACILITY (PF)

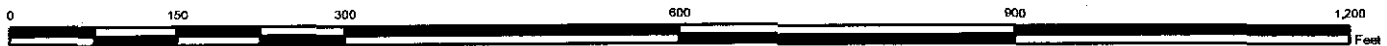
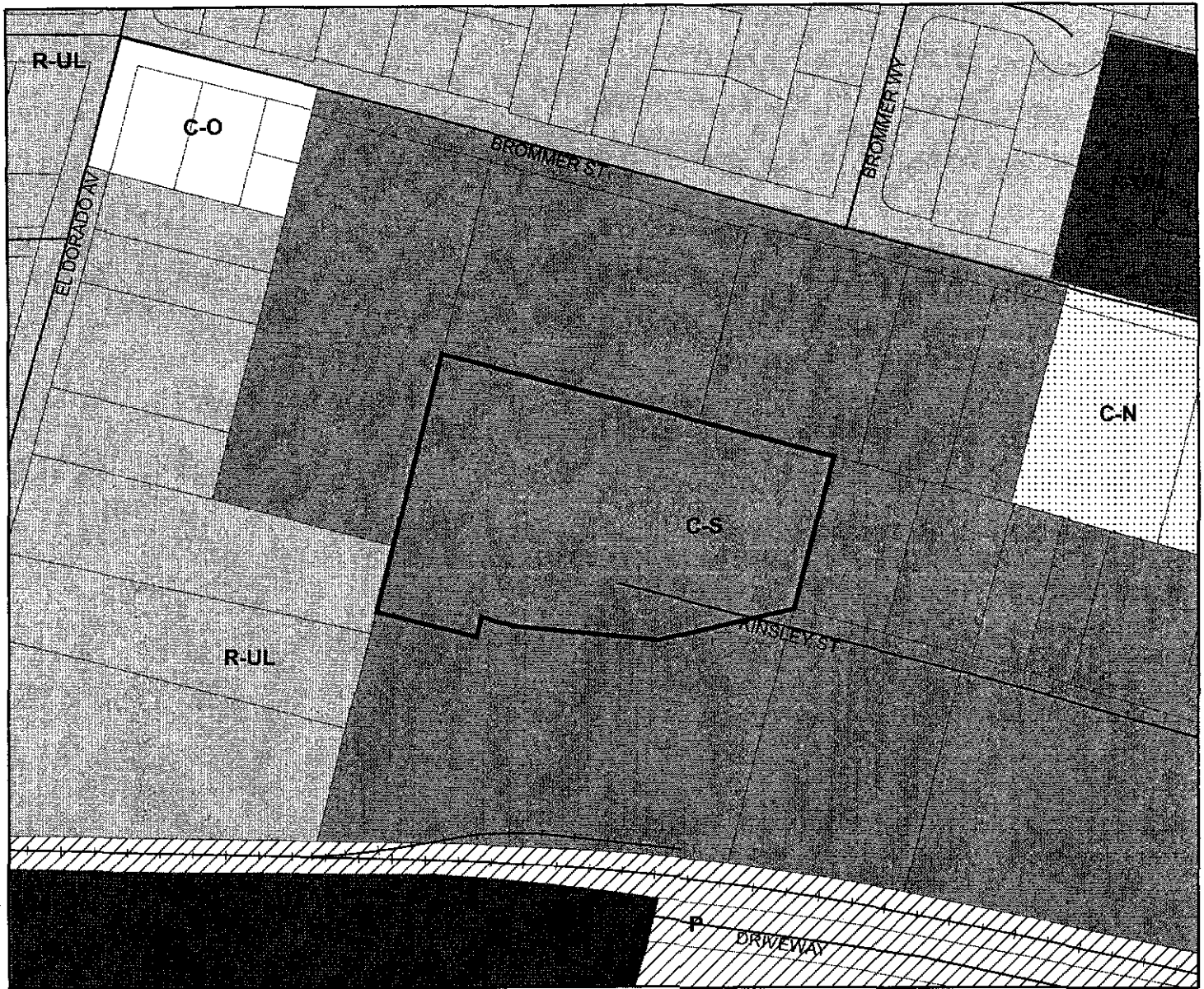


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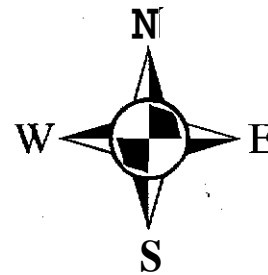


# General Plan Designation Map



## Legend

- APN 026-311-65
- Assessors Parcels
- Streets
- Railroads
- Commercial-Service (C-S)
- Residential - Urban Low Density (R-UL)
- Residential - Urban High Density (R-UH)
- Parks and Recreation (O-R)
- Commercial-Neighborhood (C-N)
- Public Facilities (P)
- Commercial-Office (C-O)



Map Created by  
County of Santa Cruz  
Planning Department  
December 2006



**HAMMETT & EDISON, INC.**  
CONSULTING ENGINEERS  
RADIO AND TELEVISION

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ROBERT D. WELLER, P.E.  
MARK D. NEUMANN, P.E.  
ROBERT P. SMITH, JR.  
RAJAT MATHUR, P.E.  
S. WESTON LANE  
ROBERT L. HAMMETT, P.E.  
1920-2002  
EDWARD EDISON, P.E.

**BY E-MAIL ESREIFF@PEACOCKASSOCIATES.COM**

July 16, 2007

Mr. Evan Shepherd Reiff  
Planning and Zoning Manager  
Peacock Associates  
5900 Hollis Street R1  
Emeryville, California 94608

Dear Evan:

As you requested, this letter provides updated supplemental follow-up information to our report, dated July 10, 2007, of RF exposure conditions near the MetroPCS base station (Site No. SF16711D) proposed to be located on a new 50-foot pole to be installed at 1053 17th Avenue in Santa Cruz, California. County Supervisor Jan Beautz raises a concern in her memo, dated May 16, 2007, about levels in the second-floor classrooms at Shoreline Middle School, about 1,000 feet away.

The Supervisor notes correctly from Figure 3A that the calculated second-floor level at 1,000 feet (0.10%) is almost the same\* as the ground-floor level at 50 feet (0.11%). It is important to note several additional things from that figure and its companion Figure 3B:

- a) both levels are hundreds of times below the FCC limit, so a similar pole located 50 feet from a classroom would easily comply with the FCC's exposure limits (that is, by hundreds of times);
- b) the levels shown in Figure 3A are those along the 1,000-foot arrow shown in Figure 3B that passes through the existing Sprint Nextel base station, located about 650 feet away;
- c) therefore, the indicated levels at 1,000 feet are mostly due to that station, not the proposed MetroPCS station; and
- d) in any case, calculated second-floor levels at 1,000 feet are less than twice the ground-floor levels at that same distance, and inside the classrooms on either floor, the levels would be lower and therefore likely to be even more comparable.

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Both figures revised from the earlier memo on this topic, dated June 12, 2007

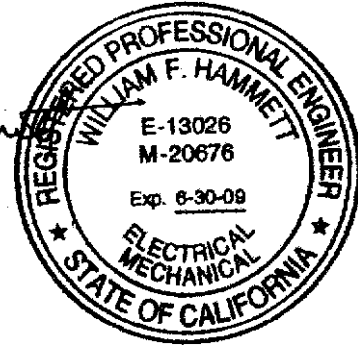
*e-mail:* bhammett@h-e.com  
*US Mail:* Box 280068 • San Francisco, California 94128  
*Delivery:* 410 Third Street West • Sonoma, California 95476  
*Telephone:* 707/996-5200 San Francisco • 707/996-5280 Facsimile • 202/396-5200 D.C.

Mr. Evan Shepherd Reiff, page 2  
July 16, 2007

I trust that this information addresses **the** questions raised. We appreciate the opportunity to be of service and would welcome any further questions on this material.

Sincerely yours,

*Bill Hammett*



**MetroPCS • Proposed Base Station (Site No. SF16711D)  
1053 17th Avenue • Santa Cruz, California**

**Statement of Hammett & Edison, Inc., Consulting Engineers**

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of MetroPCS, a personal wireless telecommunications carrier, to evaluate the base station (Site No. SF16711D) proposed to be located at 1053 17th Avenue in Santa Cruz, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

**Prevailing Exposure Standards**

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. In Docket 93-62, effective October 15, 1997, the FCC adopted the human exposure limits for field strength and power density recommended in Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent Institute of Electrical and Electronics Engineers ("IEEE") Standard C95.1-2005, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes similar exposure limits. A summary of the FCC's exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

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

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

**General Facility Requirements**

Base stations typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables about 1 inch thick. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward



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

MP16711595.2  
Page 1 of 4

**MetroPCS • Proposed Base Station (Site No. SF16711D)  
1053 17th Avenue • Santa Cruz, California**

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

**Computer Modeling Method**

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

**Site and Facility Description**

Based upon information provided by Metro, including zoning drawings by Omni Design Group, Inc., dated November 30, 2006, it is proposed to mount three Jaybeam Wireless Model W3X72-14-a010 directional panel PCS antennas inside the top of a new 50-foot flag pole to be installed adjacent to the commercial building located at 1053 17th Avenue in Santa Cruz. The antennas would be mounted at an effective height of about 47 feet above ground and would be oriented at 120" spacing, to provide service in all directions. The maximum effective radiated power in any direction would be 1,890 watts, representing six channels operating simultaneously at 315 watts each.

Presently located some 650 feet to the southeast are similar antennas for use by Sprint Nextel, another wireless telecommunications carrier. Sprint Nextel reports that it is using six EMS Model RR9017 directional panel PCS antennas mounted on a pole at effective heights of about 42 and 48 feet above ground, operating with a maximum effective radiated power in any direction of 2,400 watts.

There are reported no other wireless base stations or other sources of RF energy close enough and powerful enough to affect the condition of compliance with prevailing exposure standards in areas near the proposed site.

**Study Results**

For a person anywhere at ground, the maximum ambient RF exposure level due to the proposed Metro operation by itself is calculated to be  $0.0031 \text{ mW/cm}^2$ , which is 0.31% of the applicable public exposure limit. The maximum calculated cumulative level at ground for the simultaneous operation of both carriers is 0.39% of the public limit. The maximum calculated cumulative level on the second-



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**MetroPCS • Proposed Base Station (Site No. SF16711D)  
1053 17th Avenue • Santa Cruz, California**

floor elevation of any nearby building would be 0.63% of the public exposure limit; the maximum calculated cumulative level at the second-floor elevation of the nearby school is 0.25% 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. Figure 3 attached provides the specific data required under Santa Cruz County Code Section 13.10.659(g)(2)(ix), for reporting the analysis of RF exposure conditions.

**Recommended Mitigation Measures**

**Due** to their mounting location, the MetroPCS 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 directly in front of the Metro antennas themselves, such as might occur during maintenance activities on the flag or pole, should be allowed while the site is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Posting explanatory warning signs\* at the antennas and/or on the pole below the antennas, such that the signs would be readily visible from any angle of approach to persons who might need to work within that distance, would be sufficient to meet FCC-adopted guidelines.

**Conclusion**

Based on the information and analysis above, it is the undersigned’s professional opinion that the base station proposed by MetroPCS at 1053 17th Avenue in Santa Cruz, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much **less** than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations. Posting of explanatory signs is recommended to establish compliance with occupational exposure limitations.

\*

Warning signs should comply with **OET-65** color, symbol, and content conventions. Contact information should be provided (e.g., a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required.



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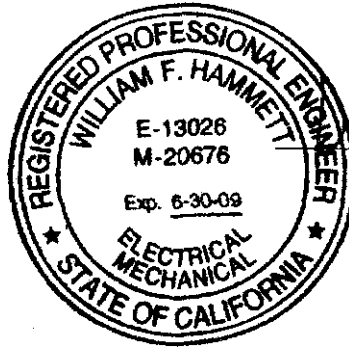
**MP16711595.2**  
Page 3 of 4

**MetroPCS • Proposed Base Station (Site No. SF16711D)  
1053 17th Avenue • Santa Cruz, California**

**Authorship**

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

July 10, 2007



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



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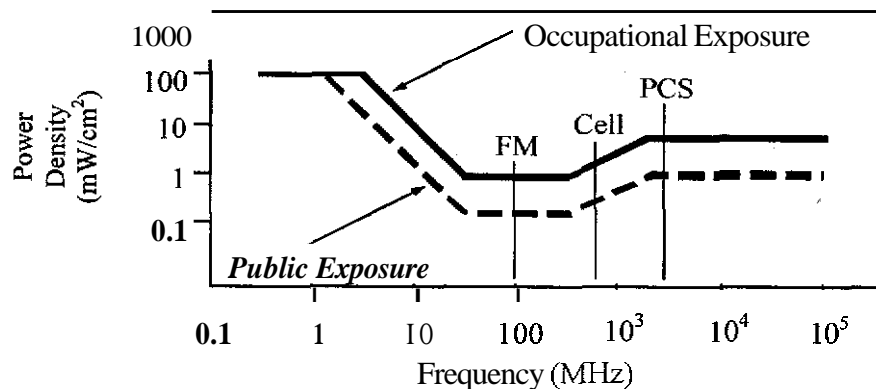
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Page 4 of 4

## 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 similar to the more recent Institute of Electrical and Electronics Engineers Standard C95.1-2005, "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 <sup>2</sup> )	
0.3 – 1.34	614	<i>614</i>	1.63	<i>1.63</i>	100	<i>100</i>
1.34 – 3.0	614	<i>823.8/f</i>	1.63	<i>2.19/f</i>	100	<i>180/f<sup>2</sup></i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.891/f	<i>2.19/f</i>	900/f <sup>2</sup>	<i>180/f<sup>2</sup></i>
30 – 300	61.4	27.5	0.163	<i>0.0729</i>	1.0	<i>0.2</i>
300 – 1,500	3.54√f	<i>1.59√f</i>	√f/106	<i>√f/238</i>	f/300	<i>f/1500</i>
1,500 – 100,000	137	<i>61.4</i>	0.364	<i>0.163</i>	5.0	<i>1.0</i>



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



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FCC Guidelines  
Figure I



## RFR.CALC™ Calculation Methodology

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

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

#### Near Field.

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

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

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

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

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

$D$  = distance from antenna, in meters,

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

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

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

#### Far Field.

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

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

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 x 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.



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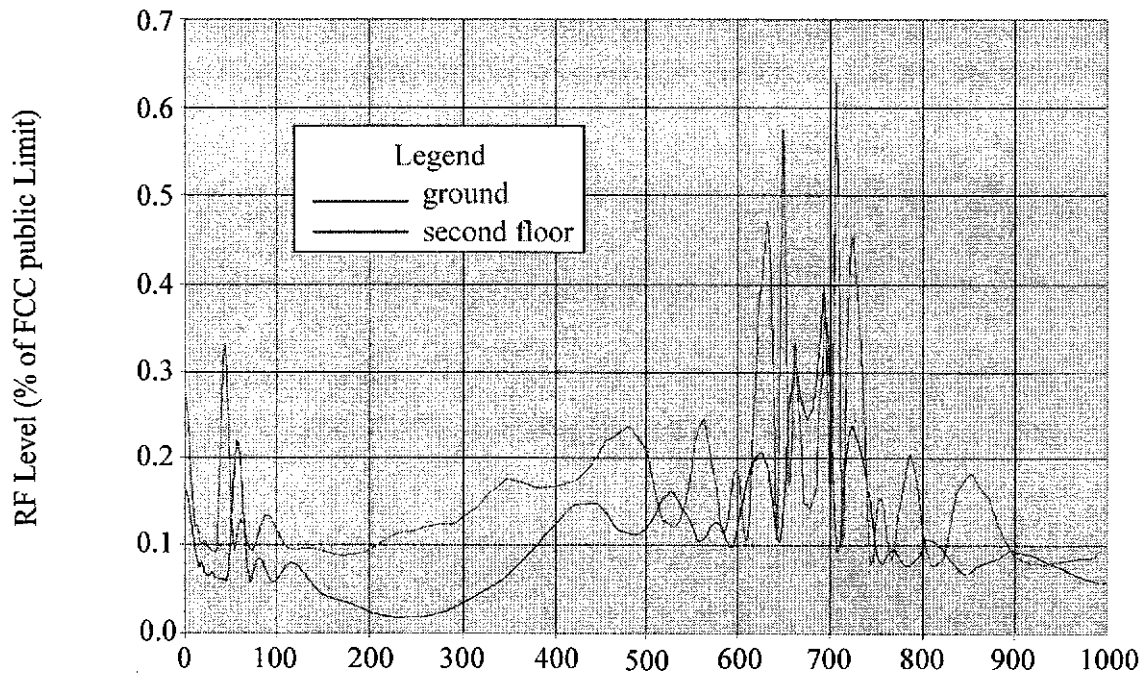
Methodology  
Figure 2

**MetroPCS • Proposed Base Station (Site No. SF16711D)  
1053 17th Avenue • Santa Cruz, California**

**Compliance with Santa Cruz County Code §13.10.659(g)(2)(ix)**

'Compliance with the FCC's non-ionizing electromagnetic radiation (NIE) standards or other applicable standards shall be demonstrated for any new wireless communication facility through submission, at the time of application for the necessary permit or entitlement, of NIE calculations specifying NIE levels in the area surrounding the proposed facility. Calculations shall be made of expected NIE exposure levels during peak operation periods at a range of distances from fifty (50) to one thousand (1,000) feet, taking into account cumulative NIE exposure levels from the proposed source in combination with all other existing NIE transmission sources within a one-mile radius. This should also include a plan to ensure that the public would be kept at a safe distance from any NIE transmission source associated with the proposed wireless communication facility, consistent with the NIE standards of the FCC, or any potential future superceding standards."

**Calculated Cumulative NIE Exposure Levels during Peak Operation Periods**



RF level (% limit)	Distance (feet) in direction of maximum level						
Distance (feet)	50	100	200	300	500	750	1,000
ground	0.11%	0.058%	0.023%	0.035%	0.12%	0.091%	0.057%
second floor	0.16%	0.12%	0.098%	0.13%	0.21%	0.14%	0.10%

Calculated using formulas in FCC Office of Engineering Technology Bulletin No. 65 (1997), considering terrain variations within 1,000 feet of site.

**Maximum effective radiated power (peak operation) - 1,890 watts**

**Effective MetroPCS antenna height above ground - 47 feet**

**Other sources nearby - Sprint Nextel located at about 650 feet away**

**Other sources within one mile - Radio Stations KSCO and KOMY located about 0.71 miles away. No other base stations or other sources close enough to affect compliance.**

**Plan for restricting public access - Antennas are mounted on a tall flag pole**



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MP16711595.2  
Figure 3A

**MetroPCS • Proposed Base Station (Site No. SF16711D)  
1053 17th Avenue • Santa Cruz, California**

**Calculated NIER Exposure Levels  
Within 1,000 Feet of Proposed Site  
Including Sprint Nextel PCS**



**Legend**

- blank - less than 0.3% of FCC public limit (*i.e.*, more than 330 times below)
-  - 0.30% and above near ground level (highest level is 0.39%)
-  - 0.30% and above at 2nd floor level (highest level is 0.63%)

Calculated using formulas in FCC Office of Engineering Technology Bulletin No. 65 (1997), considering terrain variations within 1,000 feet of site. See text for further information.



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hIP16711595.2

Figure 3B

**metroPCS**  
 METRO PCS, INC.  
 1001 MARINA VILLAGE PARKWAY  
 4TH FLOOR  
 SAN DIEGO, CA 92101  
 PHONE 619.592.3110  
 FAX 619.592.1500

**OMNI**  
 ARCHITECTS  
 1001 MARINA VILLAGE PARKWAY  
 4TH FLOOR  
 SAN DIEGO, CA 92101  
 PHONE 619.592.3110  
 FAX 619.592.1500

CONSULTANT:

SEAL:

REV.	DATE	DESCRIPTION	BY
1	1/17/04	ISSUED FOR PERMITS	JWP
2	1/29/04	ISSUED FOR PERMITS	JWP
3	04/13/07	100% ZD'S	JWP

DRAWN BY:	JWP	CHECKED BY:	APV
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CURRENT ISSUE DATE:  
 03/13/07

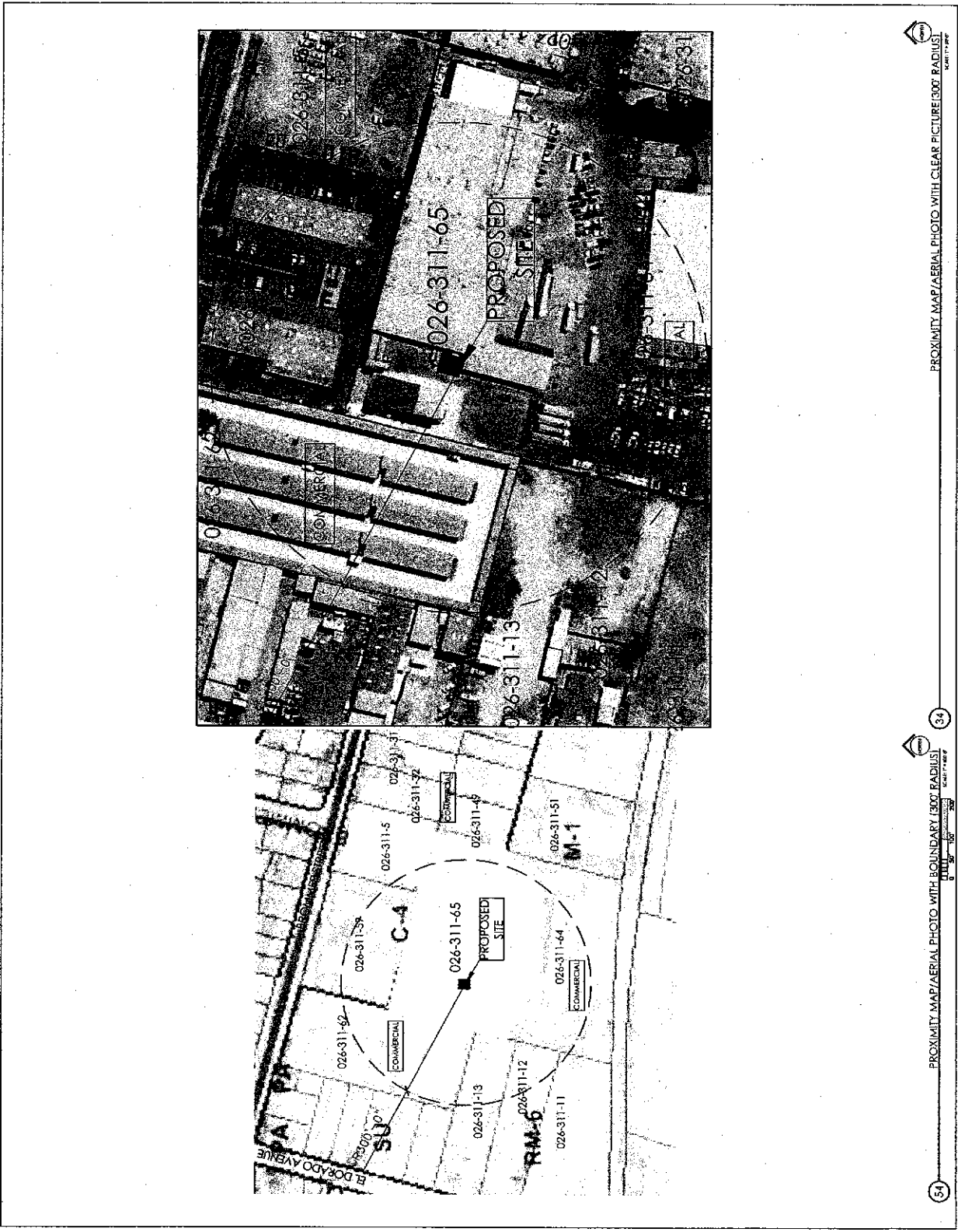
SUBJECT:  
 100% ZD'S

PROJECT INFORMATION:  
**LEDYARD PROPERTIES**  
**SF16711-0**  
 1053 17TH AVE.  
 SAN ANTONIO, CA 78205  
 APN NO. 026-311-135  
 COUNTY OF SANTA CRUZ

SHEET TITLE:  
 PROXIMITY MAP/  
 AERIAL PHOTO (300')

SHEET NUMBER:  
**Z-3**

855-444





# Aerial Photo

**Site Location** - The site was located by using the street address, plotted on MapQuest and confirmed by the GoogleEarth.

**Viewpoint Selection** - The site is located behind a large warehouse, back off of the nearby roads. Photographs were taken from the streets to the northeast, east and west. These viewpoints are considered the most representative public viewpoints.

**Scale** - The proposed flagpole will be located between buildings, and placed approximately midway between previous proposed site locations. Therefore, the scale pole placement from the previous surveys were used to place the correct scale for the new location in the photographs. Height scale was achieved in the previous surveys by placing a 40 ft scale pole with red balloons at 30 ft and 40 ft. The scale pole provides extremely accurate scale and placement, as the top balloon will perfectly represent the top of the flagpole. Both previous locations were photographed with the scale pole and balloons. The new location was established by setting the midpoint average off the photographs.

The dimensions and placement information were provided by 90% Zoning Drawings, supplied by the project applicant and prepared by Omni Design Group.

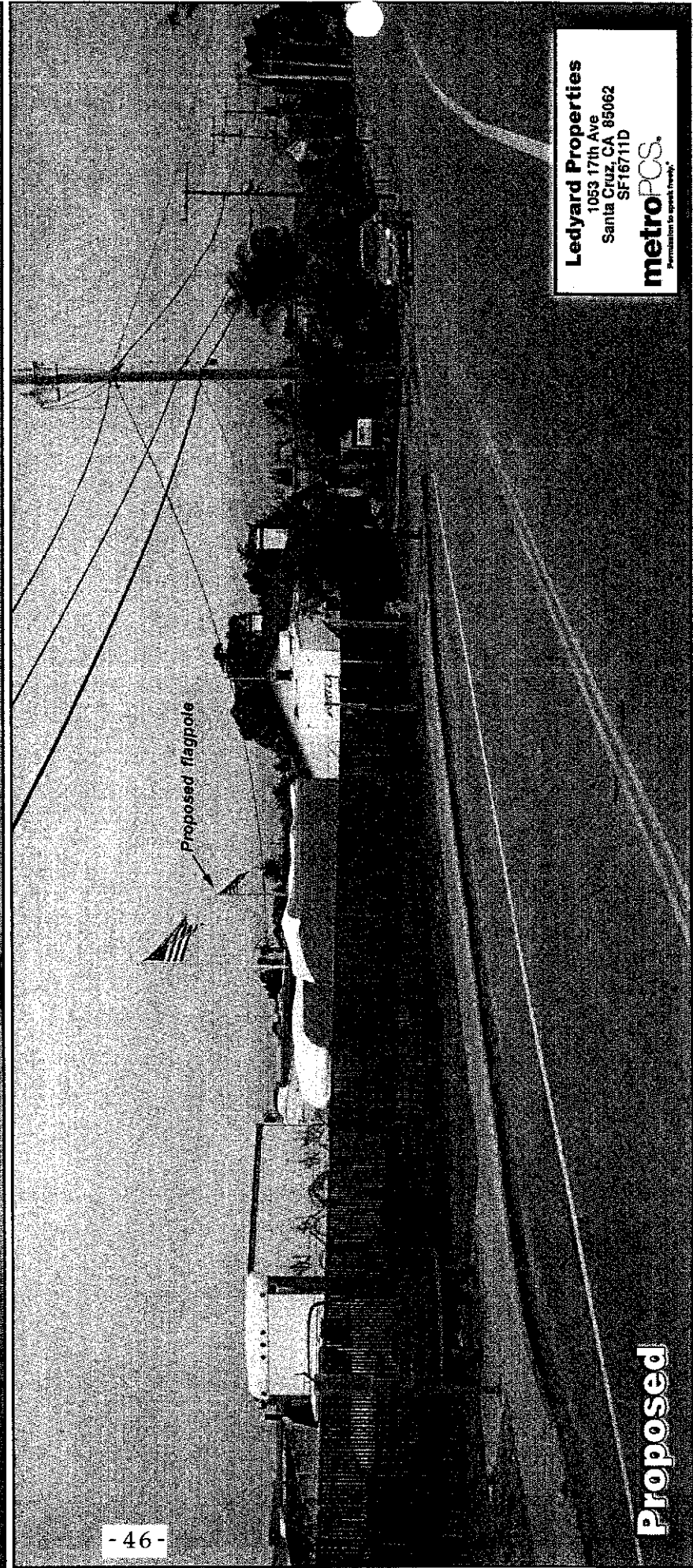
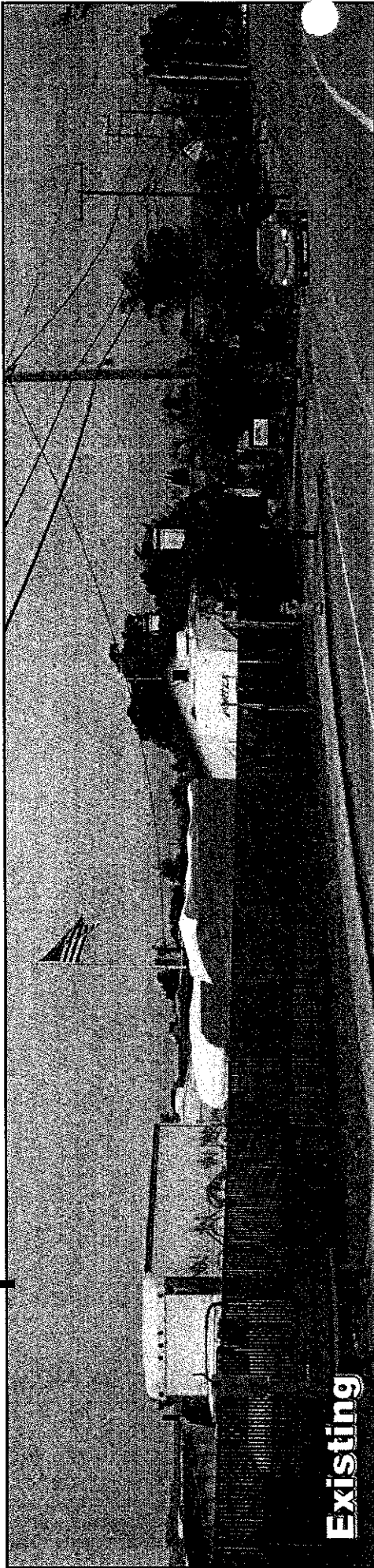
**Equipment Information** - The images were taken with a Canon 1Ds Mark II Professional Digital camera with a 1:1 conversion ratio using standard lenses. GPS equipment: Garmin GPSMAP 60CSx. Distance measured with Bushnell 1000 digital laser range finder. All image manipulation is done using Adobe Photoshop on Apple MacPro Intel workstations.

**Ledyard Properties**  
1053 17th Ave  
Santa Cruz, CA 85062  
SF16711D

**metroPOS.**  
Permission to speak freely.

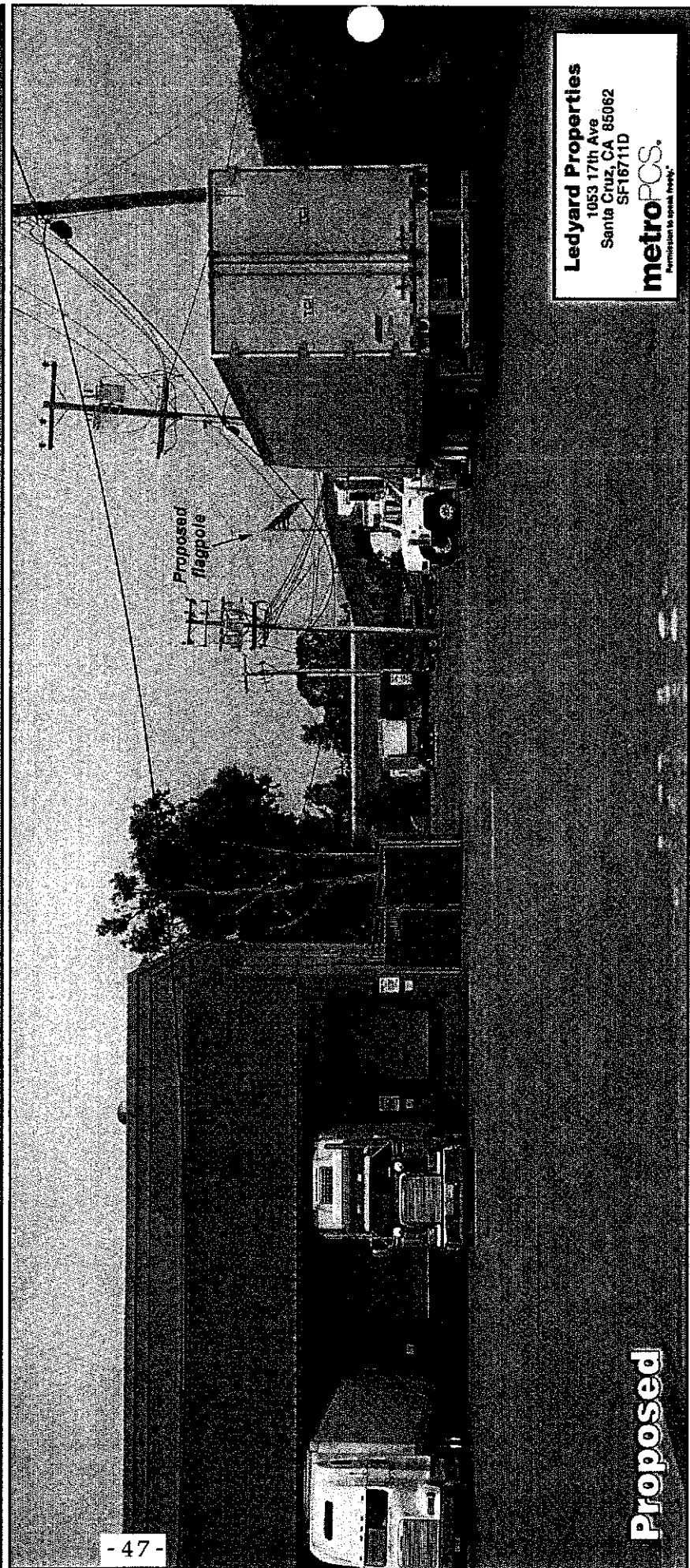
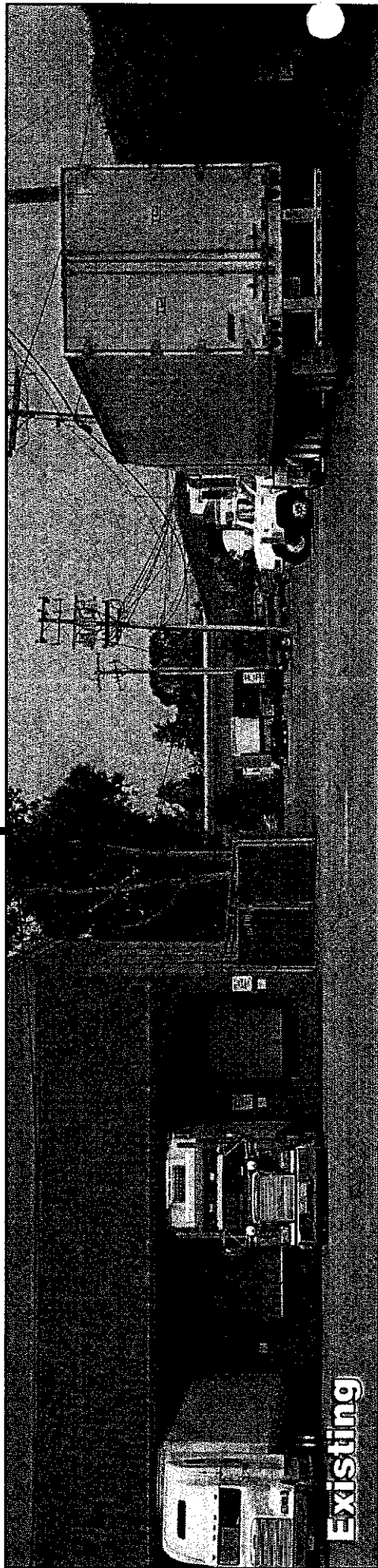


**Photomontage of view looking west along Brommer Street.**



**Ledyard Properties**  
 1053 17th Ave  
 Santa Cruz, CA 95062  
 SF16711D  
**metroPCS.**  
Partnership to speed things.

# Photosimulation of view looking west-northwest from 17th Ave.

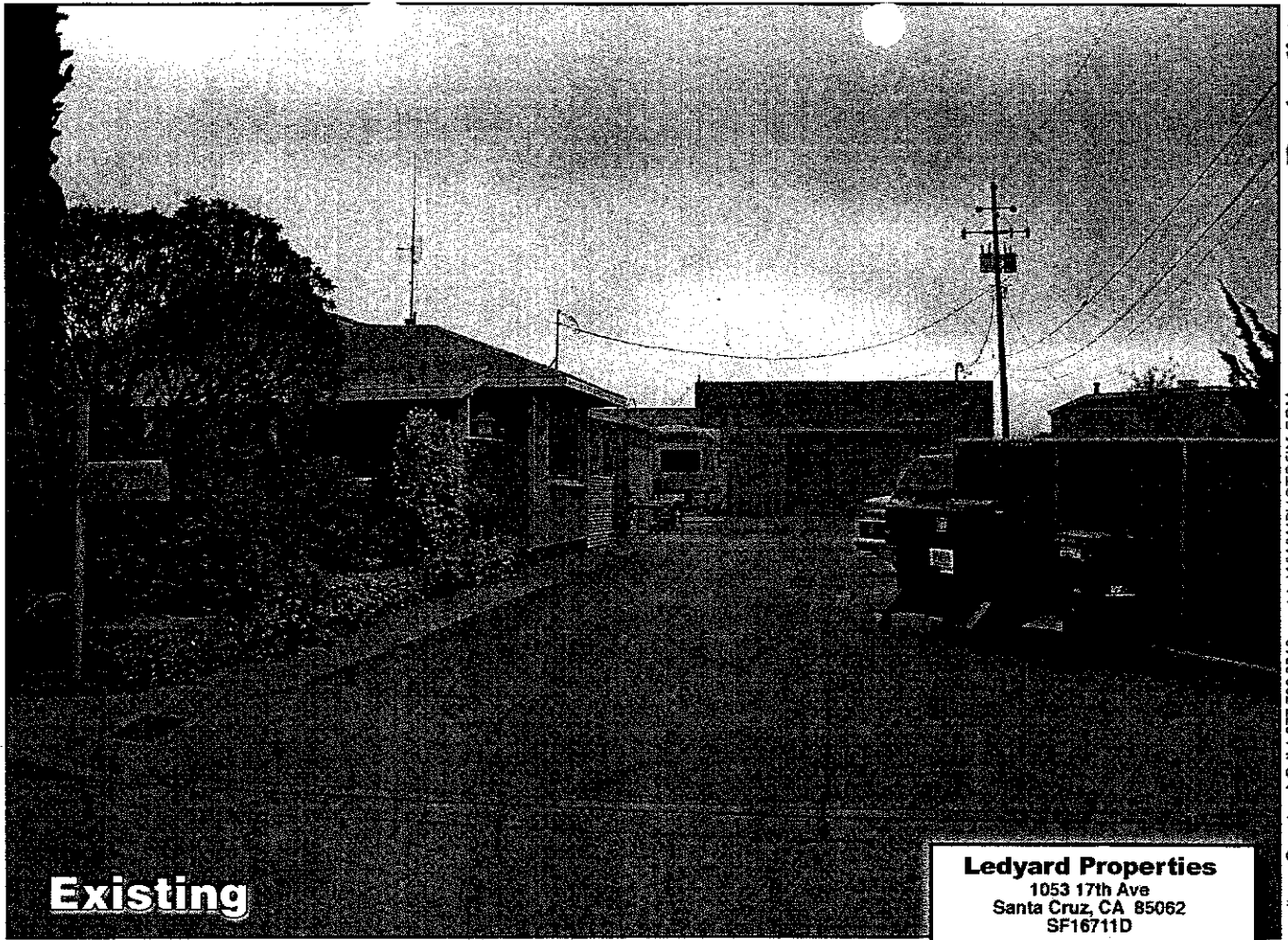


- 47 -

**Ledyard Properties**  
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 Santa Cruz, CA 95062  
 SF16711D  
**metroPOS.**  
Permitted to operate locally

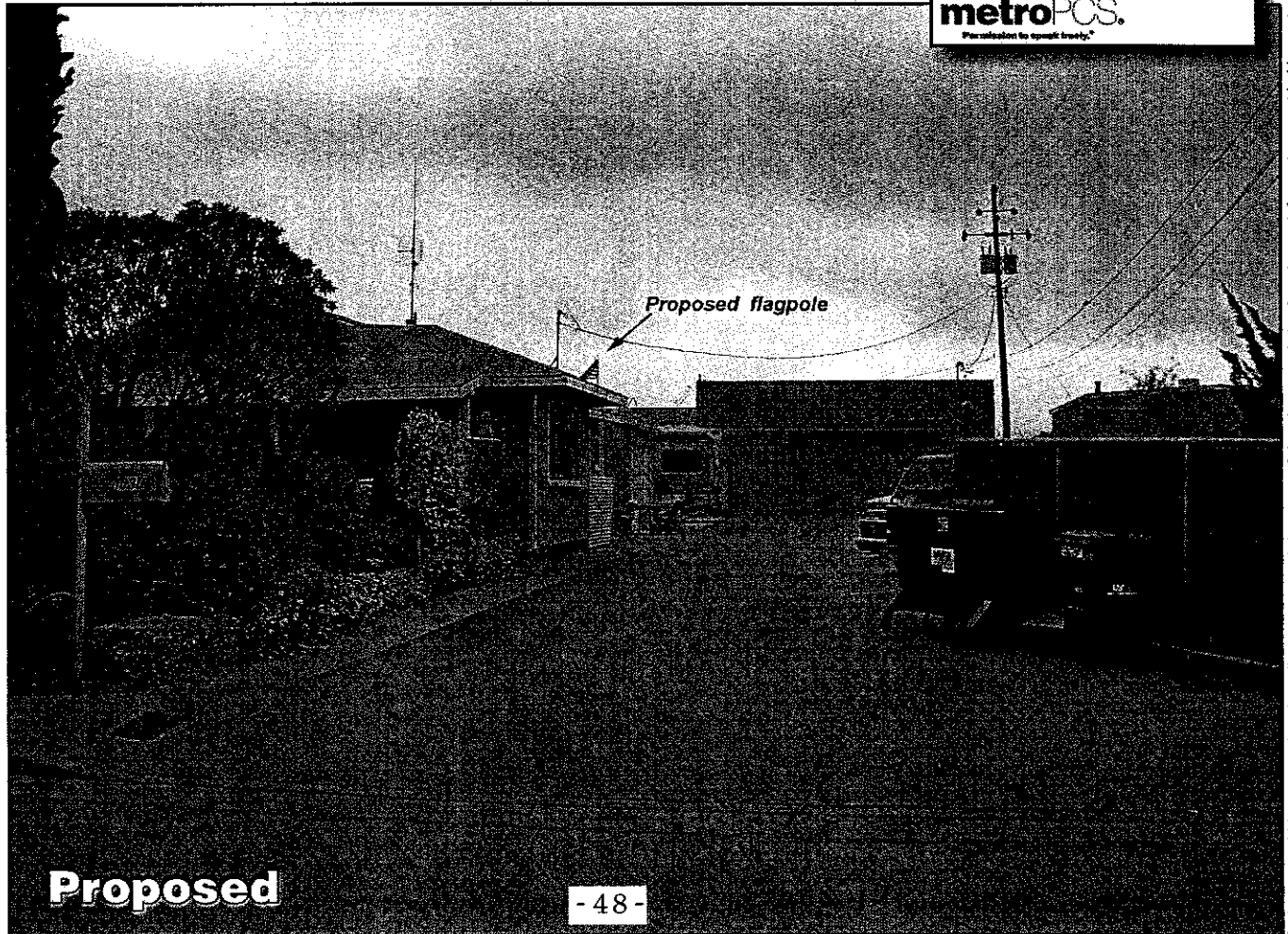


**Photosimulation of view looking east from El Dorado Ave.**



**Existing**

**Ledyard Properties**  
1053 17th Ave  
Santa Cruz, CA 85062  
SF16711D  
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**Proposed**



## INTEROFFICE MEMO

APPLICATION NO: **06-0701** (second routing)

Date: May 16, 2007

To: Cathy Graves, Project Planner

From: Larry Kasparowitz, Urban Designer

Re: Design Review for new cellular antennae at Ledyard, 1053 17th Avenue, Santa Cruz

### GENERAL PLAN / ZONING CODE ISSUES

#### Design Review Authority

**13.10.663** General development performance standards for wireless communication facilities.

Evaluation Criteria	Meets criteria In code ( ✓ )	Does not meet criteria ( ✓ )	Urban Designer's Evaluation
communications facilities shall preserve the visual character, native vegetation and aesthetic values of the parcel on which <del>such</del> facilities are proposed, the surrounding parcels and road right-of-ways, and the surrounding land <del>uses</del> to the greatest extent that is technically feasible, and shall minimize visual impacts on surrounding land and land uses to the greatest extent feasible			
Facilities shall be integrated to the maximum extent feasible to the existing characteristics of the site, and every effort shall be made to avoid, or minimize to the maximum extent feasible, visibility of a wireless communication facility within significant public viewsheds.	✓		
Utilization of camouflaging and/or stealth techniques shall be encouraged where appropriate.	✓		
Support facilities shall be integrated to the existing characteristics of the site, so as to minimize visual impact.	✓		
<b>Colocation</b>			
Cc-location is generally encouraged in situations where it is the least visually obtrusive option, such as when increasing the height/bulk of an existing tower would result in less visual impact than constructing a new separate tower in a nearby location.	✓		

<b>Ridgeline Visual Impacts</b>			
Wireless communication facilities proposed for visually prominent ridgeline, hillside or hilltop locations shall be sited and designed to <b>be</b> as visually unobtrusive as possible. Consistent with General Plan/LCP Policy 8.6.6, wireless communication facilities should be sited so the top of the proposed tower/facility is below any ridgeline when viewed from public roads in the vicinity.			<b>N/A</b>
If the tower must extend above a ridgeline the applicant must camouflage the tower by utilizing stealth techniques and hiding it among surrounding vegetation.		,	<b>NIA</b>
<b>Site Disturbance</b>			
Disturbance of existing topography and on-site vegetation shall <b>be</b> minimized, unless such disturbance would substantially reduce the visual impacts of the facility.			<b>NIA</b>
<b>Coastal Zone Considerations</b>			
<b>New</b> wireless communication facilities in any portion of the Coastal Zone shall be consistent with applicable policies of the County Local Coastal Program (LCP) and the California Coastal Act.	✓		
<b>No</b> portion of a wireless communication facility shall extend onto or impede access to a publicly used beach	✓		
Power and telecommunication lines serving wireless communication facilities in the Coastal Zone shall be required to be placed underground	✓		
<b>All</b> proposed wireless communication facilities shall comply with the policies of the County General Plan/Local Coastal Plan and all applicable development standards for the zoning district in which the facility is <b>to</b> be located, particularly policies for protection of visual resources (i.e., General Plan/LCP Section 5.10). Public vistas from scenic roads, as designated in General Plan Section 5.10.10, shall be afforded the highest level of protection.	✓		
<b>Visual Impacts to Neighboring Parcels</b>			
To minimize visual impacts to surrounding residential uses, the base of any new freestanding telecommunications tower shall be set back from any residentially zoned parcel a distance equal to five times the height of the tower, or a minimum of three hundred (300) feet, whichever is greater.	✓		

This requirement may be waived by the decision making body if the applicant can prove that the tower will not be readily visible from neighboring residential structures, or if the applicant can prove that a significant area proposed to be served would otherwise not be provided personal wireless services by the subject carrier, including proving that there are no viable, technically feasible, environmentally equivalent or superior alternative sites outside the prohibited and restricted areas designated in Section 13.10.661(b) and 13.10.661(c).	✓		
--	---	--	--

Evaluation Criteria	Meets criteria In code ( ✓ )	Does not meet criteria ( ✓ )	Urban Designer's Evaluation
All wireless communication facilities shall be constructed of non-flammable material, unless specifically approved and conditioned by the County to be otherwise (e.g., when a wooden structure may be necessary to minimize visual impact).	✓		
<b>Tower Type</b>			
All telecommunication towers shall be self-supporting monopoles except where satisfactory evidence is submitted to the appropriate decision-making body that a non-monopole (such as a guyed or lattice tower) is required or environmentally superior.	✓		
All guy wires must be sheathed for their entire length with a plastic or other suitable covering.			NIA
<b>Support Facilities</b>			
The County strongly encourages all support facilities, such as equipment shelters, to be placed in underground vaults, so as to minimize visual impacts.			NIA
Any support facilities not placed underground shall be located and designed to minimize their visibility and, if appropriate, disguise their purpose to make them less prominent. These structures should be no taller than twelve (12) feet in height, and shall be designed to blend with existing architecture and/or the natural surroundings in the area or shall be screened from sight by mature landscaping.	✓		
<b>Exterior Finish</b>			
All support facilities, poles, towers, antenna supports, antennas, and other components of communication facilities shall be of a color approved by the decision making body.	✓		
Components of a wireless communication facility which will be viewed against soils, trees, or grasslands, shall be of a color or colors consistent with these landscapes.			NIA

All proposed stealth tree poles (e.g., "monopines") must use bark screening that approximates natural bark for the entire height and circumference of the monopole visible to the public, as technically feasible.			N/A
<b>Visual Impact Mitigation</b>			
Special design of wireless communication facilities may be required to mitigate potentially significant adverse visual impacts, including appropriate camouflaging or utilization of stealth techniques.	✓		
Use of less visually obtrusive design alternatives, such as "microcell" facility-types that can be mounted upon existing utility poles, is encouraged.			N/A
Telecommunication towers designed to look like trees (e.g., "monopines") may be favored on wooded sites with existing similar looking trees where they can be designed to adequately blend with and/or mimic the existing trees. In other cases, stealth-type structures that mimic structures typically found in the built environment where the facility is located may be appropriate (e.g., small scale water towers, barns, and other typical farm-related structures on or near agricultural areas).			N/A
Rooftop or other building mounted antennas designed to blend in with the building's existing architecture shall be encouraged.			N/A
Co-location of a new wireless communication facility onto an existing telecommunication tower shall generally be favored over construction of a new tower.			N/A
Owners/operators of wireless communication towers/facilities are required to maintain the appearance of the tower/facility, as approved, throughout its operational life.	▼		
Public vistas from scenic roads, as designated in General Plan/LCP Section 5.10.10, shall be afforded the highest level of protection.			N/A
<b>Height</b>			
All towers shall be designed to be the shortest height possible so as to minimize visual impact.			N/A
Any applications for towers of a height more than the allowed height for structures in the zoning district must include a written justification proving the need for a tower of that height and the absence of viable alternatives that would have less visual impact, and shall, in addition to any other required findings and/or requirements, require a variance approval pursuant to County Code Section 13.10.230.			N/A
Except for as provided for under Section 13.10.663 (a)(5), all wireless communication facilities shall be unlit except when authorized personnel are present at night.	✓		

Roads and Parking			
All wireless communication facilities shall be served by the minimum sized roads and parking areas feasible.	✓		
Vegetation Protection and Facility Screening			
In addition to stealth structural designs, vegetative screening may be necessary to minimize wireless communication facility visibility within public viewsheds			NIA
All new vegetation to be used for screening shall be compatible with existing surrounding vegetation.			N/A
Vegetation used for screening purposes shall be capable of providing the required screening upon completion of the permitted facility (i.e., an applicant cannot rely on the expected future screening capabilities of the vegetation at maturity to provide the required immediate screening).			NIA
All telecommunications facilities to be located in areas of extensive natural vegetation shall be installed in such a manner so as to maintain the existing native vegetation. Where necessary, appropriate mature landscaping can be used to screen the facility. However, so as to not pose an invasive or genetic contamination threat to local gene pools, all vegetation proposed and/or required to be planted that is associated with a wireless communication facility shall be non-invasive species native to Santa Cruz County, and specifically native to the project location.			NIA
Non-native and/or invasive species shall be prohibited (such as any species listed on the California Exotic Pest Plant Council "Pest Plant List" in the categories entitled 'A', 'B', or 'Red Alert'). Cultivars of native plants that may cause genetic pollution (such as all manzanita, oak, monkey flower, poppy, lupine, paintbrush and ceanothus species) shall be prohibited in these relatively pristine areas.			NIA
All wireless communication facility approvals in such areas shall be conditioned for the removal of non-native invasive plants (e.g., iceplant) in the area disturbed by the facility and replanting with appropriate non-invasive native species capable of providing similar or better vegetated screening and/or visual enhancement of the facility unless the decision making body determines that such removal and replanting would be more environmentally damaging than leaving the existing non-native and/or invasive species in place (e.g., a eucalyptus grove that provides overwintering habitat for Monarch butterflies may be better left alone).			N/A
All applications shall provide detailed landscape/vegetation plans specifying the non-invasive native plant species to be used, including identification of sources to be used to supply seeds and/or plants for the project.			NIA

Any such landscape/vegetation plan shall be prepared by a qualified botanist experienced with the types of plants associated with the facility area. For purposes of this section, "mature landscaping" shall mean trees, shrubs or other vegetation of a size that will provide the appropriate level of visual screening immediately upon installation.			N/A
All nursery stock, construction materials and machinery, and personnel shall be free of soil, seeds, insects, or microorganisms that could pose a hazard to the native species or the natural biological processes of the areas surrounding the site (e.g., Argentine ants or microorganisms causing Sudden Oak Death or Pine Pitch Canker Disease).			N/A
Underground lines shall be routed outside of plant drip lines to avoid damage to tree and large shrub root systems to the maximum extent feasible.			N/A



**CENTRAL  
FIRE PROTECTION DISTRICT**  
of Santa Cruz County  
Fire Prevention Division

---

930 17<sup>th</sup> Avenue, Santa Cruz, CA 95062  
phone (831)479-6843 fax (831)479-6847

**Date:** December 19,2006  
**To:** Ledyard Properties  
**Applicant:** Evan Shepherd Reiff  
**From:** Tom Wiley  
**Subject:** **06-0701**  
**Address:** **1053 17<sup>th</sup> Ave.**  
**APN:** 026-311-65  
**OCC:** 1808  
**Permit:** 20060385

We have reviewed plans for the above subject project. District requirements appear to have been met.

The job copies of the building and fire systems plans and permits must be on-site during inspections

Submit a check in the amount of \$100.00 for this particular plan check, made payable to Central Fire Protection District. A \$35.00 Late Fee may be added to your plan check fees if payment is not received within 30 days of the date of this Discretionary Letter. INVOICE MAILED TO APPLICANT. Please contact the Fire Prevention Secretary at (831) 479-6843 for total fees due for your project.

If you should have any questions regarding the plan check comments, please call me at (831) 479-6843 and leave a message, or email me at [tomw@centralfrd.com](mailto:tomw@centralfrd.com). All other questions may be directed to Fire Prevention at (831)479-6843.

CC: File 8 County

As a condition of submittal of these plans, the submitter, designer and installer certify that these plans and details comply with applicable Specifications, Standards, Codes and Ordinances, agree that they are solely responsible for compliance with applicable Specifications, Standards, Codes and Ordinances, and further agree to correct any deficiencies noted by this review, subsequent review, inspection or other source. Further, the submitter, designer, and installer agrees to hold harmless from any and all alleged claims to have arisen from any compliance deficiencies, without prejudice, the reviewer and the Central FPD of Santa Cruz County.  
1808-121906

**Cathy Graves**

---

**From:** Paul Rodrigues  
**Sent:** Wednesday, May 09, 2007 11:10 AM  
**To:** Cathy Graves  
**cc:** Melissa Allen; Betsey Lynberg  
**Subject:** 06-0701

Cathy,

As you know Melissa Allen our Planner is still out of the office this week and so we're unable to provide our typical formal RDA comments.

I have reviewed the additional material submitted for application 06-0701, the proposed MetroPCS/ Flag Pole on the Ledyard properties. It appears that the applicant has responded to most of the concerns expressed by the RDA in previous comments - deleting the night lighting of the flag, undergrounding of the overhead wires etc.

We would defer to the planning department as to a determination whether the required distance from potential residential development is appropriate.

We have only one further comment and that is that the size of the proposed flag appears rather large for this height and size pole. There appears to be nothing in the applicant's citation of the US Code which defines what size flag is to be used for this particular installation. In looking at the flag pole in front of the County Courts building, it appears that the height of that pole is about 50-60 feet and the flag is about 5'-6' x 7'-8'. The applicant's proposed flag size - 8x12' seems quite large and may appear out of proportion to the height of the pole. We would suggest that a smaller flag be used.

We hope that you find these suggestions useful, please let me know if you have any questions. Thank you for the opportunity to comment on these plans.

Paul Rodrigues  
RDA Project Manager  
x2386



COUNTY OF SANTA CRUZ

Inter-Office Correspondence

DATE: May 16,2007

TO: Tom **Bums**, Planning Director  
Cathy Graves, Planner

FROM: Supervisor Jan Beautz



RE: Comments on Application 06-0701, Wireless facility, 1053 17th Ave, **APN** 026-3 11-65  
Second Routing

---

This application is for a 50 foot tall wireless communication facility in the area of 17<sup>th</sup> Ave and Brommer St. Please take the following comments into consideration in your review of this application.

Antennas of this type intentionally focus their energy horizontally. Figure **3B** shows that within the 1,000 ft radius of the antenna lies both the Simpkins public swimming pool and a portion of Shoreline Middle School. This is of particular concern in this case because Shoreline Middle School has both first and second story classrooms. As a result, these second story classrooms will be subjected to substantially more electromagnetic radiation than they would be at ground level. In fact, a review of Figure **3A** shows that Shoreline's second story classrooms, at 1,000 feet from the antenna, will actually receive approximately the same radiation as if they were located just 50 feet from the antenna at ground level. It is unlikely that a facility of this-type would be allowed were it to be proposed for just 50 feet from a ground level classroom.

How will the above issue be addressed?

SUBMITTED WITH  
ORAL COMMENTS  
ZONING ADMINISTRATOR  
AUGUST 3, 2007 AGENDA  
ITEM 3

APN 026-311-65

(NEW CELL TOWER ON LEDYARD PROPERTY, 1053 17<sup>TH</sup> AVENUE, SANTA CRUZ)

1. Telecom Towers Tsunami by B. Blake Levitt, March 3, 2000
2. Freeburger Appeal, October, 2002
3. Blind Faith in Wireless Technology – Facts Everyone Should Know (EMR Policy Institute)
4. Antennas dismantled in Spain due to unprecedented childhood cancers in neighboring school
5. "Wi" Tech Genocide, 2005
6. Danger: Radiation fact sheet
7. Letter to Sen. Diane Feinstein from Board of Supervisors, 7/10/07, re: wireless facilities locations



# COUNTY OF SANTA CRUZ

## Planning Department

### COMMERCIAL DEVELOPMENT PERMIT

Owner: LEDYARD PROPERTIES  
Address: 1005 17<sup>TH</sup> AVENUE  
SANTA CRUZ, CA 95062

Permit Number: 06-0701  
Parcel Number(s): 026-311-65

### PROJECT DESCRIPTION AND LOCATION

Permit to construct a new wireless communications facility on a site with a cold storage building and operations building. Includes three equipment cabinets on a new concrete slab and three antennas within a 50-foot tall "flagpole" monopole with power and telco services to the equipment, and a GPS antenna. Requires a Commercial Development Permit and a waiver of the requirement that the tower be set back 300-feet from residentially zoned parcels to minimize visual impacts. Property located on the west side of 17th Avenue approximately 450 feet south of the intersection with Brommer Street (1053 17th Avenue) in the Live Oak Planning Area.

### SUBJECT TO ATTACHED CONDITIONS

Approval Date: 8/03/07  
Exp. Date (if not exercised): see conditions  
Denial Date: \_\_\_\_\_

Effective Date: 8/17/07  
Coastal Appeal Exp. Date: Call Coastal Com  
Denial Date: \_\_\_\_\_

\_\_\_\_\_ This project requires a Coastal Zone Permit, which is not appealable to the California Coastal Commission. It may be appealed to the Board of Supervisors. The appeal must be filed within 14 calendar days of action by the decision body.

\_\_\_\_\_ This project requires a Coastal Zone Permit, the approval of which is appealable to the California Coastal Commission. (Grounds for appeal are listed in the County Code Section 13.20.110.) The appeal must be filed with the Coastal Commission within 10 business days of receipt by the Coastal Commission of notice of local action. Approval or denial of the Coastal Zone Permit is appealable. The appeal must be filed within 14 calendar days of action by the decision body.

This permit cannot be exercised until after the Coastal Commission appeal period. That appeal period ends on the above indicated date. Permittee is to contact Coastal staff at the end of the above appeal period prior to commencing any work.

A Building Permit must be obtained (if required) and construction must be initiated prior to the expiration date in order to exercise this permit. **THIS PERMIT IS NOT A BUILDING PERMIT.**

By signing this permit below, the owner agrees to accept the terms and conditions of this permit and to accept responsibility for payment of the County's costs for inspections and all other actions related to noncompliance with the permit conditions. This permit shall be null and void in the absence of the owner's signature below.

\_\_\_\_\_  
Signature of Owner/Agent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Staff Planner

\_\_\_\_\_  
Date

Distribution: Applicant, File, Clerical

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## Telecom Towers Tsunami By B. Blake Levitt

*There are medical and political ramifications to cell tower siting in our county*

Guest editorial published in *The New Milford (CT) Times*, March 3, 2000

B. Blake Levitt, a former New York Times science writer, is the author of *Electromagnetic Fields: A Consumer's Guide to the Issues and How to Protect Ourselves* (Harcourt Brace, 1995) for which she won an award from the American Medical Writers Association. She lives in Warren, CT

Litchfield County — along with the rest of the country — is suffering a telecommunications tower blitzkrieg. The local press has done an excellent job of covering the subject with one exception — the medical implications of tower siting.

At its core, this is a medical and an environmental issue. In emphasizing aesthetics, such as hiding antennas in church steeples, our premier planners are missing a critical opportunity to exercise prudent avoidance and precautionary principles — wise courses of action now recommended by doctors and public health officials all over the world.

Here is a partial list of MD's who are calling for prudent avoidance when siting antennas close to the population, particularly near schools: Dr. David Ozonoff, Dept. of Environmental Health, Boston University; Dr. Kathleen Thurmond, Harvard Medical School; Dr. Joseph Brain, Harvard School of Public Health, State University of New York at Albany; Dr. Kathleen M. Fagan, Division of Occupational and Environmental Medicine, Cleveland, Ohio; Dr. Cathey Falvo, International and General Public Health, New York Medical College; Dr. Philip I. Landrigan, Department of Community and Preventive Medicine, Children's Health and the Environment, Mt. Sinai School of Medicine and many others.

And from the ever-hlnt Helen Caldicott, MD, co-founder of Physicians for Social Responsibility, this e-mail statement: "Radiofrequencies emitted from mobile telephone towers will have deleterious medical effects to people within the near vicinity according to a large body of scientific literature. Babies and children will be particularly sensitive to the mutagenic and carcinogenic effects of this radiofrequency radiation. It is therefore criminal to place one of these aerials on or near a school..."

So what's going on here? Could **we really** have another emerging public health problem? Like lead poisoning? DDT? Asbestos? Tobacco smoke? This time with ambient, low-level, non-ionizing radiation? **Many now suspect so.**

What we are talking about is the buildout of a new technology in close proximity to the human population for the first time in our evolutionary history, with no clear understanding of the bioeffects. Despite what industry says, no safe level of radiofrequency radiation has ever been determined. The standards in place at the Federal Communications Commission (FCC) are considered seriously flawed. Important questions raised over 50 years ago regarding radiofrequency (RF) radiation used in these and myriad other wireless technologies have never been resolved.

Outside of industry spokesmen, few experts who take an in-depth (vs. a cursory) look at the science feel comfortable with this today. The FCC standards are based on models for acute, thermal exposures only, with downward extrapolations built in for presumptions of safety. But adverse *non-thermal* effects, far below the standards, have been noted time and again in the research. In other words, the standards can guarantee we won't cook — like in a microwave oven which uses frequencies very close to digital PCS cell-phone technology — but they cannot guarantee anything else.

The studies used to reach these conclusions about safety are also suspect. Scientists, from the physics and engineering disciplines (the non-living sciences), have traditionally used test designs of high-power, short-term exposures then extrapolated to presumptions about long-term, low-level exposures such as those who live near RF installations experience. But are these comparable? Again, many think not.

Scientists from the biology disciplines (the living sciences) point out that living systems are far more complex than inanimate physics models. They say that inappropriate research has consistently been used to reach inappropriate conclusions and it's been generated by the wrong professions.

There is a federal RF Interagency Work Group comprised of division directors from the FCC, FDA, OSHA, EPA and NIOSH trying to address some of these problems.

In June 1999 the group issued an RF guidelines paper outlining the tasks at hand. In it they recognize that the current standards are based on acute exposures that are engineering dosimetry models, not on biological principles. They acknowledge that extrapolation of acute effects data to chronic exposure conditions is uncertain.

The zoning preemptions for RF contained in the Telecommunications Act of 1996 were not an accident. The telecom industry knew they could never develop a ground-based system (vs. a more expensive satellite system) without such preemptions because whenever the subject of RF health effects gets a serious airing at the local level, the industry loses. Individuals may want their cell phones, which are voluntary RF exposures, but no one wants a 24-hour involuntary exposure near an antenna array.

Behind the scenes, this industry plays hardball. In 1994, they asked the FCC to preempt all local zoning. In 1997, they asked the FCC to forbid the discussion of RF health effects at local zoning. (Don't they know we have a First Amendment here?) Also in 1997, they asked the FCC to declare it illegal for communities to make them prove they are in compliance with the standards. (The FCC hasn't granted any of these requests.)

The industry has repeatedly tried for interstate commerce status, which would override local zoning. John McCain heads the commerce committee. He is a pro-industry advocate. He has refused to allow citizens to testify at committee hearings; only industry reps are allowed. During the first six months of 1999 alone, telecommunications companies spent over \$3,000,000 on lobbying legislators. Few vote against them.

But most ominously for our churches and towns, this industry has consistently tried to shift all liability onto the site owners and away from themselves as providers of the service. Using third-party tower builders—vertical real estate companies like SBA currently trolling Litchfield County—is another way of shifting liability. The service providers get an extra layer in between themselves and the community. And the tower companies understand the RF risks only too well. They are set up as holding companies with their assets tied up in subsidiary companies, meaning most of their assets are untouchable in lawsuits. High-risk companies always do this.

The Telecom Act only preempted for service providers, not for tower speculators. Tower companies hope local governments won't quite figure that one out.

This entire industry has carefully crafted insulation around itself, but the question remains, against what?

Here's a sampling of the non-thermal "contraband" science they don't want us to talk about at public hearings:

- In the 80's and 90's, Dr. William Ross Adey, a neuroscientist, and Dr. Carl Blackman, a biophysicist at the U.S. EPA, found in several studies that the human anatomy has critical "windows" in which we respond to some frequencies, but not to others. At set intervals in the non-ionizing bands they observed a dramatic cellular effect called calcium ion dumping. The cells use calcium for a host of important functions. This work could indicate any number of adverse cellular effects.
- In 1994, Drs. Henry Lai and N.P. Singh, at the University of Washington, Seattle, found both double and single-strand DNA breaks in test animals exposed to cellular and PCS-frequency pulsed microwaves. Double-strand DNA breaks are thought not to repair themselves and can lead to mutations. Dr. Lai recently published a study that found learning defects in test animals exposed to low-level pulsed microwaves.
- In 1996, Dr. Michael Repacholi found a significant increase in B-cell lymphomas in test mice exposed to long-term, low-level pulsed microwave frequencies in the cellular and PCS range. Changes in B-cells in the immune system are implicated in roughly 85 percent of all cancers.
- The work of Dr. Stanislaw Szmigielski in Poland on microwave and radar personnel has found sharp increases in cancers—including lymphomas, melanomas, leukemias and brain tumors—as well as high blood pressure, headaches, memory loss, and brain damage. Also noted were immune system abnormalities. About 10 other studies have found immune-system suppression.
- In 1984, Dr. William Arthur Guy, at the University of Washington, Seattle, found an increase in malignant endocrine gland tumors and in benign adrenal gland tumors in test animals.

- In 1975, researcher Alan Frey reported for the first time increases in the permeability of the blood-brain barrier in test animals exposed to pulsed microwaves similar to what is used today in digital PCS systems. The blood-brain barrier protects the brain from access by viruses, bacteria and toxins.
- In 1975, Dr. William Bise, using 10 human test subjects, found severe alterations in human electroencephalograms at microwave and RF power levels that are now common in most urban areas due to ambient RF. The yearlong study documented a kind of entrainment phenomenon of the test subjects' brain waves with the external exposures, and radical changes in mood and behavior.
- In 1992, Dr. Joseph Kirshvink, a geobiologist, discovered—magnetite in human brain tissue in the blood-brain barrier and in the meninges which covers the brain. Magnetite interacts a million times more strongly with external magnetic fields than with any other biological material. Many species—bees, birds, butterflies, fish—manufacture magnetite and use it as a navigational tool. Any standards for RF exposure presume humans do not manufacture magnetite.
- There are indications that some frequencies may be unsafe at any intensity. This is a crucial point when telecommunications reps talk about how low-power their installations are, likening them to 25- and 100-watt light bulbs. (What they leave out is that it is 100 watts of effective radiated power per channel. There can be dozens of channels on one antenna, and dozens of antennas on one installation.)
- The pulsing factor of RF alone—such as that used in the newer digital PCS and High Definition Television (HDTV) technologies—has been found to be a significant variable in adverse effects. Dr. Jerry Phillips has found in several studies that RF pulsing of tumorigenic cell cultures accelerated their already abnormal growth rates by 3000 percent. And recent research from China found that important portals on the cell's surface are fantastically sensitive to low-intensity pulsed RF signals. The presence of such signals alone was found to completely alter the information reaching the interior of the cell. This is critical information with implications for everything from cancer, to genetic mutations, to immune system dysfunction, among many other things.

There is federal legislation to remedy this. Senator Patrick Leahy (D-VT) introduced Senate Bill 1538 that would restore all local siting control for RF. Representative Bernie Sanders (I-VT) has introduced similar legislation at the U.S. House of Representatives (HR 2834 and 2835). There are \$10 million research appropriations attached to these bills, with funds directed to the National Institutes of Health. *[Reader, please note as of 10/02 the above bills were updated as separate bills: S.3102, S.3103 and HR.5631, HR.5632. Sponsors were Senators Leahy(VT), Jeffords(VT), Murray(WA), and Dodd(CT), and Congressmen Sanders(VT), Tancredo(CO), Davis(IL), and Shays(CT). These bills will be reintroduced in the new session.]* There is currently no federal research effort into RF. Industry, with its inherent bias and with decades of well-leveled accusations of research tampering, controls the show. Four independent bioelectromagnetic research labs have folded within the last five years due to absence of funding. It's imperative, in the face of this buildout, that an unbiased research program without industry influence be initiated. It's a no-brainer, actually...

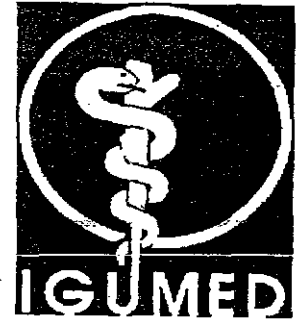
Is there contradictory science that would indicate we don't have reason for concern? Of course. Are there people of good faith on both sides of this issue? Of course.

But as laymen, it is still our obligation to err on the side of caution, especially where our children are concerned.

Hide antennas in church steeples? Near schools? Near homes? Our planners might want to rethink that recommendation. They can be held personally liable. too.

# Interdisziplinäre Gesellschaft für Umweltmedizin e. V.

IGUMED, Bergseestr. 57, 79713 Bad Säckingen  
Tel. 07761 913490, FAX 913491, e-mail: igumed@gmx.de



9. Oktober 2002

## FREIBURGER APPEAL

Out of great concern for the health of our fellow human beings do we - as established physicians of all fields, especially that of environmental medicine - turn to the medical establishment and those in public health and political domains, as well as to the public.

We have observed, in recent years, a dramatic rise in severe and chronic diseases among our patients, especially:

- Learning, concentration, and behavioural disorders (e.g. attention deficit disorder, **ADD**)
- Extreme fluctuations in blood pressure, ever harder to influence with medications
- Heart rhythm disorders
- Heart attacks and strokes among an increasingly younger population
  - Brain-degenerative diseases (e.g. Alzheimer's) and epilepsy
- Cancerous afflictions: leukemia, brain tumors

Moreover, we have observed an ever-increasing occurrence of various disorders, often misdiagnosed in patients as psychosomatic:

- Headaches, migraines
- Chronic exhaustion
- Inner agitation
- Sleeplessness, daytime sleepiness
- Tinnitus
- Susceptibility to infection
- Nervous and connective tissue pains, for which the usual causes do not explain even the most conspicuous symptoms

Since the living environment and lifestyles of our patients are familiar to us, we can see - especially after carefully-directed inquiry - a clear temporal and spatial correla-

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tion between the appearance of disease and exposure to pulsed high-frequency microwave radiation (HFMR), such as:

- Installation of a mobile telephone sending station in the near vicinity
- Intensive mobile telephone use
- Installation of a digital cordless (DECT) telephone at home or in the neighbourhood

We can no longer believe this to be purely coincidence, for:

- Too often do we observe a marked concentration of particular illnesses in correspondingly HFMR-polluted areas or apartments;
- Too often does a long-term disease or affliction improve or disappear in a relatively short time after reduction or elimination of HFMR pollution in the patient's environment;
- Too often are our observations confirmed by on-site measurements of HFMR of unusual intensity.

On the basis of our daily experiences, we hold the current mobile communications technology (introduced in 1992 and since then globally extensive) and cordless digital telephones (DECT standard) to be among the fundamental triggers for this fatal development. One can no longer evade these pulsed microwaves. They heighten the risk of already-present chemical/physical influences, stress the body's immune system, and can bring the body's still-functioning regulatory mechanisms to a halt. Pregnant women, children, adolescents, elderly and sick people are especially at risk.

Our therapeutic efforts to restore health are becoming increasingly less effective: the unimpeded and continuous penetration of radiation into living and working areas – particularly bedrooms, an essential place for relaxation, regeneration and healing – causes uninterrupted stress and prevents the patient's thorough recovery.

In the face of this disquieting development, we feel obliged to inform the public of our observations – especially since hearing that the German courts regard any danger from mobile telephone radiation as “purely hypothetical” (see the decisions of the constitutional court in Karlsruhe and the administrative court in Mannheim, Spring 2002).

What we experience in the daily reality of our medical practice is anything but hypothetical! We see the rising number of chronically sick patients also as the result of an irresponsible “safety limits” policy, which fails to take the protection of the public from the short- and long-term effects of mobile telephone radiation as its criterium for action. Instead, it submits to the dictates of a technology already long recognized as dangerous. For us, this is the beginning of a very serious development through which the health of many people is being threatened.

We will no longer be made to wait upon further unreal research results – which in our experience are often influenced by the communications industry – while evidential studies go on being ignored. We find it to be of urgent necessity that we act now!





Above all, we are, as doctors, the advocates for our patients. In the interest of all those concerned, whose basic right to life and freedom from bodily harm is currently being put at stake. we appeal to those in the spheres of politics and public health. Please support the following demands with your influence:

- New health-friendly communications techniques, given independent risk assessments before their introduction

and, as immediate measures and transitional steps:

- Stricter safety limits and major reduction of sender output and HFMR pollution on a justifiable scale, especially in areas of sleep and convalescence
- A say on the part of local citizens and communities regarding the placing of antennae (which in a democracy should be taken for granted)
- Education of the public, especially of mobile telephone users, regarding the health risks of electromagnetic fields
- Ban on mobile telephone use by small children, and restrictions on use by adolescents
- Ban on mobile telephone use and digital cordless (DECT) telephones in preschools, schools, hospitals, nursing homes, events halls, public buildings and vehicles (as with the ban on smoking)
- Mobile telephone and HFMR-free zones (as with auto-free areas)
- Revision of DECT standards for cordless telephones with the goal of reducing radiation intensity and limiting actual use time, as well as avoiding the biologically critical HFMR pulsation
- Industry-independent research, finally with the inclusion of amply available critical research results and our medical observations



**Dr. med. Thomas Allgaier**, General medicine, Environmental medicine, Heitersheim  
**Dr. med. Christine Aschermann**, Neural physician, Psychotherapy, Leutkirch  
**Dr. med. Waltraud Bär**, General medicine, Natural healing, Environmental medicine, Wiesloch  
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**Maria und Bruno Hennek**, Self-help group for chemical- and wood preservative-damaged, Würzburg  
**Dr. Lebrecht von Klitzing**, Medicinal physicist, Stokelsdorf  
**Wolfgang Maes**, Baubiology and Environmental analysis, Neuß  
**Helmut Merkel**, 1st Chairman of Biobiology Organization, Bonn  
**Peter Neuhold**, Non-medical practitioner, Berlin  
**Prof. Dr. Anton Schneider**, Scientific leader of Institute for Baubiology and Ecology, Neubuerm  
**Dr. Birgit Stöcker**, Chairwoman of self-Help Orga. 66 for Electrosensitives, München  
**Prof. Dr. Alfred G. Swierk**, Mainz  
**Dr. Ulrich Warnke**, Biophysics, Biopsychology, Biomedicine, Saarbrücken

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U.S. Internal Revenue Service.

## Blind Faith in Wireless Technology — Facts Everyone Should Know

Humans are electromagnetic beings. Our **cells** continuously communicate with each other through electrical micro currents. Wireless technology (i.e. cell phones, wireless computers, radar, radio/television broadcast) transmits information through the use of electromagnetic radiation (EMR). This ever-increasing background radiation has the ability to disrupt the communication between our body's cells, resulting in abnormal functions in the developing cells of children, as well as adults and other living creatures.

Even though some radiation is natural, the emissions coming from these technologies contain very different characteristics than anything that exists in nature, at levels much higher than the earth's natural background. The intensity level of 900 Megahertz radiation required to operate a cellular telephone is 2 billion times higher than the earth's natural radiation or the levels at which human beings evolved.

People who live in close proximity to a transmitting facility (such as roof-mounted antennas or freestanding towers) have already begun to exhibit symptoms of environmental EMR exposure. Symptoms include: short-term memory loss, sleep disturbances, nausea, chronic headaches, skin rashes, fatigue and disorientation. In August of 2004, the International Association of Firefighters — the largest labor union for firefighters in the US and Canada — voted not to allow new antenna facilities to be placed on or near fire stations. Firefighters are among the first workers to be exposed to low-level transmitting antennas for sustained periods of time over the past few years. Many are now beginning to show symptoms of environmental EMR exposure. This should automatically raise concerns for children in schools with wireless computer networks, and send up red flags to boards of education considering leasing school property for cell towers.

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The United States government safety rules for maximum allowable exposure to citizens from an antenna or cell phone do not take scientific studies past 1985 into consideration. The current Federal Communications Commission (FCC) standards for ambient exposures were established in 1996, but the FCC has thus far refused to revisit them or incorporate 20 more years of pertinent research into their allowances. Adverse effects to living cells have been shown worldwide in numerous studies of EMR at levels far below those now allowed by the FCC. For example, studies have found that one two-minute cell phone call made by a child affects his/her brain activity for up to an hour afterward.

When we use wireless technology we are not only potentially harming ourselves but also those around us — the same way second hand smoke affects others. EMR is a form of air pollution, too. A cell phone emits radiation in a radius of approximately 2 yards. Children are particularly vulnerable because their cells are still developing.

Unfortunately because we can't see EMR, we tend to think it's not there. But just because you can't see radio and television waves, doesn't mean you don't hear the sounds or see the pictures. You can't see cell phone transmissions but the phones still ring.

Contrary to popular belief, wireless technology has not been proven safe by the FCC or the wireless industry itself. This technology has advanced at an unprecedented rate without regard to the impact on the health and well being of the people engaged in its use, or living in the vicinity of antenna sites. Who will be held responsible?

For more information and to view many of the international scientific studies on record visit our website [www.emrpoli.org](http://www.emrpoli.org). Please feel free to copy and distribute this pamphlet.

**PLEASE HELP BY MAKING A DONATION THROUGH OUR WEBSITE!**

Subject: An Interesting Letter to Blake Levitt: "Our WiFi was making our son Sick!"

Dear Ms. Levitt,

My son has been having serious ailments over the last 6 months including: Severe and constant headaches, leg pains, poor sleep, and even heart palpitations. Various specialists were at a loss as to why he had these conditions! The only thing that showed up in extensive bloodwork was a low IgA level. I did some research and figured out that it may be the WiFi Wireless Internet I installed in our home exactly 6 months prior.

So I quietly unhooked the system, and monitored my son so not to tell him of my changes. Sure enough, within hours his headache that he had without pause for 6 months went away. We're about 2 weeks from when I first disabled the WiFi system and my son's ENTIRE medical symptom list has completely cleared up! No longer does he complain of sore legs or headaches, which is a big relief to us.

Most importantly, his blood panel showed that his IgA levels returned to normal. Upon investigation I found that EMF/EMR from Wireless Networks can lower Melatonin, which indirectly lowers IgA -there are studies that confirm this. IgA itself is responsible for fighting a VARIETY of illness. So we can say indirectly that EMF/EMR may be responsible for an extremely wide range of human ailments.

I have found some schools and some countries are already removing WiFi systems because of extremely high levels of complaints from teachers and students about ill effects after their installation.. I believe this issue is vastly more dangerous than Cellular towers because of the highly concentrated continuous signal nature of wireless internet.

I believe there needs to be some detailed and up to date works to reflect the rapid increase of high powered wireless internet networks being installed in schools, homes, and cities nationwide.

Any opinions on this? Kind Regards,

Robert McNaughton

Dear Robert,

Thanks for this email. I will pass it along to appropriate people in federal regulatory agencies who need to hear this exact kind of information. Just so you know, this is about the 10th such communication within the last year that I have gotten describing pretty much the same symptoms. WiFi is certainly a problem. When I lecture on cell towers, I now say that it never ceases to amaze me that people will fight a cell tower in their neighborhood, then throw in a WiFi system at home which is just like inviting a cell tower indoors. The problem with towers/infrastructure now is that they are using

significantly higher frequencies due to the FCC licensing of broadband, i.e. telecom companies can now offer Internet access, TV, text messaging, music downloads, etc. etc. Yesterday's old analog cell tower that could cover a 10-15 mile radius morphed into digital PCS that could cover about a 3-mile radius, and now the "next generation" infrastructure requires antennas/towers every 1-2 miles. These are likely all unsafe technologies, it's just a question of degree and exposure parameters. But personal WiFi domestic systems are by far the worst right now due to its very close proximity to people and the higher frequencies at which they operate. And of course whole cities are going WiFi. Unfortunately the learning curve on this is steep, there are literally NO research funds available in America, and the FCC, which controls for exposure standards, is a non-health agency. So everyone is learning about this one individual anatomy at a time, literally. Eventually the adage that the "plural of anecdote is data" will come to pass. But someone needs to collect the information and we don't even have that going on. No one wants to monitor this. Everyone just wants it to be fine. People who get into difficulties have no one to tell but a journalist like me. And most MDs are clueless. I am glad that you figured out your son's problems so quickly. That's unfortunately rare. Please let me know how he progresses.

Best Regards,  
Blake Levitt

P.S. I wrote about melatonin in my first book on this subject and there is another book called The Melatonin Hypothesis, edited by Stevens, Wilson & Anderson. That latter is r 68 about powerline frequencies but it is full of good information.

— Original Message —

From: Paul Doyon

To: doyon.paul@gmail.com

Sent: Tuesday, March 27, 2007

this widely and saying that it had never happened to them before. They said it did not matter who was teaching, the children would still act disruptive.

On August 29, 2001, the *Japan Times* reported that employees' mental health was on the decline, with significant deterioration since 1996, and anxiety and obsessive behavior on the rise—this according to a survey by a private mental health research institute affiliated with the Japan Productivity Center for Socioeconomic Development which polls 100,000 company employees annually. The mental state of men was deteriorating in 19 categories, that of women, in 20. The article blamed it on the current gloomy corporate climate. (I guess the coincidental timing with the widespread introduction of cell phone systems has no significance?)

On December 30, 2001, TBS television did a program on how Japanese perceive themselves and their nation changing. Parents reported less communication with their children, who are always chatting with their friends on their cell phones. Many Japanese did not really feel themselves to be "Japanese." Maybe space aliens?

In your last *No Place To Hide* you described many cases of diseases among trees. I can add something from Japan. Japan's lovely pine trees are dying. Trees that just a year ago were healthy and well maintained, which have stood for centuries, are suddenly dead. Ostensibly, it is due to beetles carrying a disease, but one Japanese activist says scientists are still puzzled at the scope and timing. He told me some are saying global warming is to blame. In other cases, I've heard of ozone loss being blamed. I think all these theories have merits, but so does ours, and it deserves to be considered; especially in relationship to the timing.

## Spain

### ***Popular Revolt Against Antennas – More than 2,000 Installations dismantled***

On the first day of winter in 2001, a Spanish judge ordered 49 cell phone antennas removed from a rooftop near a school in downtown Valladolid. It was the second time in 2001 that a Spanish court had ordered antennas removed for health reasons (see *No Place To Hide*, November 2001). This time the fight was led by parents of children at Garcia Quintana primary school, where three children had contracted acute lymphoblastic leukemia and one Hodgkins lymphoma, since the antennas were installed.

"This school was founded during the second republic," explained physician Luis Martin, spokesman for the parents, "and it has its original structure and materials. In 32 years there had not been a single cancer and, since the antennas were installed at the beginning of 2000, there have been 4 cases."

Word spread like wildfire throughout Spain, with reports about the controversy appearing daily in the major media. Environmental groups and neighborhood associations got together to cooperate in the fight against what some began to call "mad waves disease": headache, memory loss, dizziness, insomnia, chronic fatigue, etc. This was a dramatic reversal, since only a few years ago, most apartment cooperatives had been welcoming such installations as a source of good income.

Here is a small sample of headlines and quotations from the Spanish newspaper *El Mundo* earlier this year:

December 28: "The telecommunications industry asks for calm because the levels are safe."

January 4: "Antennas shut down near a public school in Teruel."

January 8: "The judge orders the re-opening of the Valladolid school... Meanwhile, other municipalities are echoing the controversy, some commissioning studies and

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"If the truth comes to light, we may have to talk about crimes against humanity, and logically those responsible will have to be sought."

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others directly ordering the electric supply cut to installations of this type. To Ciudad Rodrigo, Salamanca, Tordesillas and Alcañiz was added yesterday Torrejón de la Calzada."

January 9: "The mayor of Torrejón de la Calzada orders a telecommunications antenna removed from a school courtyard."

January 9: "Eleven antennas in Valladolid will be removed near sensitive locations, such as schools, day care centers, hospitals, and nursing homes."

January 9 "In Sevilla, 300 antennas lack licenses, according to the Association of People Affected by Electromagnetic Fields."

January 11: "Alarm in Ronda about a number of cases of cancer in three schools near antennas."

January 13: "About 40 residents of the Madrid District of la Ciudad de Los Angeles yesterday blocked the installation of a telecommunications antenna on the roof of their building, located at #11, Calle Pan y Toros. The municipal police answered the call of a resident and asked for the papers of the crane operators. After determining that they lacked proof of a work permit, the two agents required the operators to stop the machine."

January 13: "Residents of Mataró prevent the installation of an illegal cell phone antenna."

January 13: "Four large municipalities in Madrid take measures against antennas."

January 15: "Minister of Science and Technology Birulés orders antenna emissions reduced near schools."

January 16: "The Socialist Party says the public has been deceived about antennas,"

January 17: "The IU group in the municipal government of Madrid asks for a moratorium on the installation of telecommunication antennas. ...and a distance of safety of at least 1,000 meters from educational centers, hospitals, nursing homes, and so forth, and 500 meters from homes, businesses or environmentally sensitive areas."

January 18: "A judge requires unanimous consent to install antennas on a building. A decision of the majority of the residents is without effect."

January 23 (letter to the editor): "If the truth comes to light, we may have to talk about crimes against humanity, and logically those responsible will have to be sought."

January 25: "Demonstration against cell phone antennas in Vilassar de Mar...The residents talk about the health risk, but also about the loss of value of their homes, which they calculate at about 30%."

January 26: "The European Union confirms that the antennas pose no risk if they comply with the law."

The Taskforce contacted Arturo Soria, author of one of the opinion pieces published in *El Mundo*. He wrote us a letter containing some insights into the genesis of the situation in his country:

## The "Information Society" in Spain

by Arturo Soria y Puig

In the political program of President Aznar, telecommunications occupy an important place. After winning in 2000 by an absolute majority, he created a "Secretariat of State of Telecommunications and for the Information Society" and integrated it into a ministry, also newly created, called "Science and Technology." As the complete name of the new Secretariat of State indicates, the "information society" was identified with telecommunications; an identification that was reinforced by naming as minister Ana Birulés, a person without previous political experience and outside the governing party, whose only qualification consisted of being the CEO of a mobile telephone company. The political objective, proclaimed repeatedly, was for Spain to be integrated into, and occupy a prominent place in, said "Information Society".

On the other hand, the popular response to the rapid and chaotic installation of some 30,000 mobile phone antennas in Spain has been impressive. Because of judicial rulings (in a few cases) and because of pressure on municipal authorities (in the majority of cases) the mobile phone providers have had to disconnect or dismantle more than 2,000 already-installed antennas. In addition, plans for new installations have been notably slowed: in the year 2001 they were only able to deploy 42.5% of the planned antennas (information published April 10 in *El Mundo*). There are cities like Valladolid and provinces like Castellón and

Murcia where for some time they have not succeeded in putting up a single additional antenna.

Given the political decision of the Popular Party in favor of deploying mobile telephony, how can one explain such opposition, when the party continues enjoying a good electoral outlook and the use of mobile phones in Spain is very intense? Why is something like this happening in Spain before or more than in other countries? The answer is not easy but I will throw out a hypothesis:

Knowing that they have a lot of political support, the providers have installed the antennas without worrying about complying with any administrative formalities—the majority don't have municipal licenses—and without attending to any consideration other than their own interests. That is to say, they didn't worry much about reducing emissions, respecting minimal distances, avoiding large concentrations of antennas, etc. Perhaps on this point their colleagues in other European countries have been more cautious? In their eagerness to secure particular rooftops, they



*L'Hospitalet de Llobregat, Barcelona*

have not hesitated to threaten the owners, telling them that if they sign a rental contract, they will have an interesting economic income—the owner of the building next to the famous Valladolid school that filled its roof with more than 40 antennas earned some 150,000 euros (\$132,000) per year—and will avoid the direct radiation, while if they refuse to rent the rooftop, the antenna will be installed on the building opposite, leaving them *without this income and with the radiation*. So the providers themselves have contributed to the woes of people who neither knew about nor feared electromagnetic fields.

As far as the popular reaction, one could speculate about particular theories that are difficult to prove, for instance that nations that are more ancient are often less credulous

# High-Tech Genocide

BY [REDACTED] KEI

Cell phones have revolutionized the way we communicate, but in central Africa, their biggest legacy is war and the loss of species.

More than four million people have died in central Africa in a war over coltan, a heat-resistant mineral ore widely used in cell phones, laptops and other high-tech electronics. Coltan is found in three-billion-year-old soils like those in the Rift Valley region of Africa. The tantalum extracted from the ore is used to make tantalum capacitors, tiny components that are essential in managing the flow of current in electronic devices. Eighty percent of the world's coltan reserves are found in the Democratic Republic of Congo (DRC).

This mountainous jungle area is the battleground of what has been grimly dubbed "Africa's First World War," pitting Congolese forces against those of six neighboring countries and numerous armed factions. The victims are mostly civilians; starvation and disease have killed hundreds of thousands, and the fighting has displaced two



Rebel armies in the Democratic Republic of Congo are fighting over coltan, a mineral essential to cell-phone circuits.

million people from their homes. Often dismissed as "just an ethnic war," the conflict is actually a battle over the natural resources that are sought by foreign corporations—diamonds, tin, copper, gold and—most of all—coltan. At stake for the heavily armed militias and governments is a cut of the high-tech boom of the 1990s, in which the price of coltan skyrocketed to nearly \$300 per pound.

The war started in 1998 when Congolese rebel forces, backed by Rwanda and Uganda, seized the eastern DRC and moved into strategic mining areas, attacking villages along the way. The Rwandan army was soon making an estimated \$20 million a month from coltan mining.

Today, the fighting rages on despite peace treaties signed in Summer 2002. The peace process was initiated after the assassination of DRC President Laurent Kabila in January 2001, and following mounting pressure from South Africa. But while foreign troops have officially withdrawn from the DRC, internal factions remain at war.



The war in central Africa is driving the eastern lowland gorilla to extinction.

## Digging for "Black Gold"

Coltan has also transformed the DRC in more subtle ways. Farmers displaced from their lands have little option but to join coltan-mining brigades. Mined much like gold, coltan is found by digging large pits in riverbeds, with miners scraping away at the dirt to get to the coltan below.

Reports of rampant human-rights abuses pour out of the rebel-controlled mining region, where there is also a huge market for prostitution. An estimated two million people in the DRC are HIV-infected. Local men, women and children are forced into mining, fighting and sex work, or they are threatened with torture, rape and murder.

The coltan makes its way out of the mines to "trading posts," which are taxed or controlled by the rebels. Foreign traders then buy the mineral and ship it abroad, mostly through Rwanda.

All of it ends up being bought by just three companies: Cabot, Inc. of the US, Germany's HC Starc and China's Ningxia—which are the only firms with the capability to turn coltan into the coveted tantalum powder. The "magic powder" is then sold to Nokia, Motorola, Compaq, Sony and other manufacturers for use in cell phones and other products.

On a side note, Sam Bodman, former CEO of Cabot, was appointed in December to serve as President Bush's Secretary of Energy. Under Bodman's leadership from 1987 until 2000, Cabot was one of the largest polluters in the US, accounting for 60,000 tons of airborne toxic emissions annually.

## Ecological Effects of the War

The main coltan mining area within the DRC contains the Kahuzi Biega National Park (KBNP), home of the critically endangered eastern lowland gorilla. Deforestation from mining has destroyed much of the gorilla's habitat, and the poverty caused by the displacement of the local human populations has led to gorillas being killed and sold as "bushmeat" to the miners and rebel armies that control the area.

The KBNP population of eastern lowland gorillas, along with the population in the adjacent Kasese forests, represented 56 percent of the subspecies' total population prior to the civil war. According to a report released by the Dian Fossey Gorilla Fund and the Born Free Foundation in May 2001, the population of eastern lowland gorillas in KBNP has plummeted from an estimated 8,000 in 1991 to less than 1,000 individuals in the year 2000, an 85 percent crash in only nine years. The report continues: "The indications are that the biodiversity of the Kahuzi Biega region has been seriously, if not irreparably,

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damaged.... If further procrastination and bureaucratic delays prevent effective and timely action, the world will have stood by and watched as the magnificent eastern lowland gorilla becomes the first great ape to be driven to extinction—a victim of-war, human greed and high technology.”

## Making the Connection

Somehow, it's not surprising that this information isn't included in the instruction manual that comes with your

cell phone. Perhaps mobile phones should be outfitted with stickers that read: “Warning! This device was created with raw materials from central Africa. These materials are rare, non-renewable, were sold to fund a bloody civil war and have caused the virtual elimination of endangered species. Have a nice day.” People need to realize that there is a direct link between the gadgets that make their lives more “convenient” and the frightening reality of the violence, turmoil and destruction that plague our world.

# CELL-PHONE DEVASTATION

BY SPROCKET

The production and disposal of cell phones exacts a severe environmental cost. As wireless technology becomes more widespread, the Earth pays the price.

A cell phone is basically a handheld computer with an antenna, microphone, speaker and battery. These various components are soldered onto a main circuit board, which contains several tiny computer chips, including the digital signal processor, the microprocessor, the ROM and flash memory chips, and the radio frequency amplifiers.

These components require complex, environmentally costly manufacturing. According to the Silicon Valley Toxics Coalition, the production of just a single silicon computer chip requires:

- 3,200 cubic feet of bulk gases
- 22 cubic feet of toxic, corrosive and volatile gases
- 2,275 gallons of de-ionized water (a suspected liver, gastrointestinal and neurological toxin)
- 20 pounds of assorted chemicals
- 285 kilowatt hours of electricity (enough to power a modest US home for one month)

It also produces 25 pounds of highly corrosive sodium hydroxide, 2,840 gallons of wastewater and seven pounds of miscellaneous hazardous wastes. In addition, computer chip production leaves behind a laundry list of air- and waste-stream pollutants, such as arsenic, lead, chromium,

acid fumes and volatile organic compounds. It's no secret that the pollutants in wastewater eventually end up in wells, reservoirs, watersheds and marine ecosystems, where they are detrimental to human and nonhuman life alike. Many of these toxic compounds are found on the EPA's list of “persistent, bio-accumulative and toxic chemicals,” and they can cause a range of adverse human health effects, including reproductive and developmental problems, cancer and damage to the nervous system.

To add to the problem of high-tech industrial manufacturing, there is the issue of used cell phone disposal. An Environmental Protection Agency (EPA)-funded report from February 2004 concluded that cellular phones alone are expected to make up 65,000 tons of landfill waste in 2005.

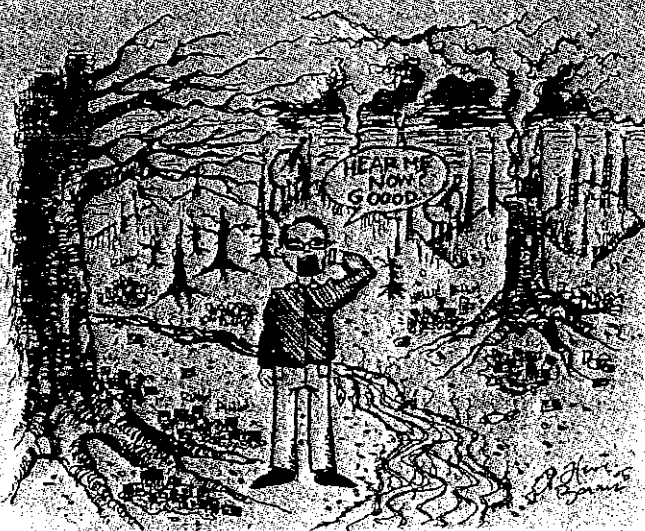
Why so much waste? Calling plans are often packaged with a free or low-cost cell phone, which makes keeping your current phone economically disadvantageous. Therefore, many cell phones

are thrown out even before becoming technologically obsolete. According to a 2002 article in *BusinessWeek Online*, this trend, coupled with an ever-increasing number of features—such as email and Internet access, 3D games, video cameras, and music and movie downloads—leads consumers to get new phones approximately every 18 months.

Not only does this use landfill space, it also means that the lead, arsenic, brominated flame retardants and other hazardous substances contained in mobile phones have another chance to enter the environment. As the cell phones sit in landfills, rainwater leaches these chemicals and heavy metals into the water table and soil.

Other silent killers are the cellular towers, transmitting the signals that make wireless communication possible. According to an August 2002 press release by the American Bird Conservancy and Forest Conservation Council, the number of birds killed annually by accidental collisions with such towers may be as high as 40 million. More than 40,000 communications towers standing taller than 200 feet are found in the US, and this number will likely double in the next 10 years.

We are killing ourselves and poisoning life on the planet—all for the sake of convenience. We are giving our children a world of poison so that we can know where they are at all times. We are contaminating the soil that grows our food so that we won't have to make another trip to the grocery store. Let's put an end to this madness. Let's bury this high-tech industry instead of its hazardous waste.



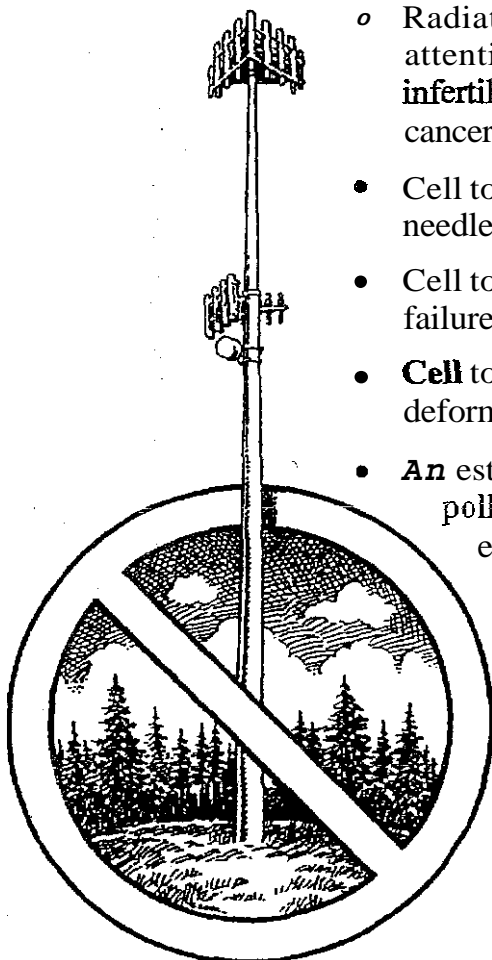


# DANGER: RADIATION



[warning: the brain has no pain receptors]

- A 2-minute exposure to a cell phone disrupts the blood-brain barrier in laboratory animals, while a 2-hour exposure damages up to 2% of their brain cells. Many cell phone users experience symptoms such as dizziness, nausea, insomnia, memory loss, inability to concentrate, fatigue, depression, anxiety and agitation. These are neurological symptoms warning of possible brain damage.
- If you use a cell phone you are irradiating everyone around you, causing other people headaches, chest pain, heart palpitations, muscle spasms, etc. Not everyone notices the effects immediately, but at least 3% of the population does, according to surveys.
- The cell towers that make your cell phone work are irradiating the entire countryside. If cell phones work where you live, you are being irradiated 24 hours a day.



- Radiation from towers and phones is causing asthma, diabetes, attention deficit disorder, autism, high blood pressure, heart arrhythmias, infertility, epilepsy, hearing loss, thyroid disease, cataracts, leukemia, brain cancer, and heart attacks and strokes in young people.
- Cell towers affect our forests: trees grow more slowly, lose their leaves or needles prematurely, and become vulnerable to insects and fungal diseases.
- Cell towers disorient and kill migrating birds, and cause reproductive failure in nesting birds.
- Cell towers lower milk production in dairy cows, and cause birth deformities in wild and domestic animals.
- An estimated one million Americans are so disabled by electromagnetic pollution that they cannot work. Increasingly many are also homeless—environmental refugees with no place to hide.

See other side for a summary of current science

## STOP THIS FAILED EXPERIMENT!

The Cellular Phone Task Force, PO . 73-337. Mendocino. CA 95460, (707) 937-3990  
For Santa Cruz County information, call (831) 688-4603. [www.protectschools.org](http://www.protectschools.org), [www.emrnetwork.org](http://www.emrnetwork.org),

## Here is what scientists are finding:

### Every cell phone call damages brain cells

Scientists at Lund University in Sweden exposed **rats** to a cell phone just once for *two* hours, and then sacrificed them two months later. The **rats** which had been exposed had scattered **areas** of **shrunk**, degenerated neurons throughout their brains.<sup>7</sup>

This is alarming, because up to 70% of cell phone users experience one or more of the following: warmth **around** the ear, burning sensations in the face, fatigue, headache, dizziness, difficulty concentrating, memory loss and insomnia.<sup>2,3</sup> These are warning signs of nervous system damage.

### Like cigarettes, cell phones and towers harm both users and non-users

Secondhand radiation comes from nearby cell phones, and from nearby and even distant cell towers.

Researchers in 8 countries have found that the closer people live to cell towers, the more likely they are to suffer from fatigue, irritability, headaches, dizziness, nausea, shortness of breath, weakness, sleep disturbances, difficulty concentrating, memory loss, depression, skin problems, visual and hearing disturbances, tremors and cardiovascular problems.<sup>4-6</sup>

### Men who wear cell phones on their waist have lower sperm count

Cell phones emit radiation continually, even in stand-by mode when they are not in use.

Fertility specialists at the University of Szeged in Hungary found that men who carry a cell phone on their belt or in a trouser pocket have up to a 30% reduction in both sperm count and sperm motility? At an infertility clinic in Cleveland, heavy cell phone users had a 40% reduction in sperm count, a 34% reduction in sperm motility and viability, and more than double the number of abnormal sperm compared to non-cell phone users.<sup>8</sup>

### Cell phones and cell towers cause diabetes

It has been known since the 1950s, from both occupational health studies and animal research, that low-level microwave radiation interferes with carbohydrate metabolism, increases blood sugar and inhibits insulin production.<sup>9</sup> Now, doctors are finding that cell towers as well as wireless technology in homes is causing an increase in both type 1 and type 2 diabetes. And cleaning up the electromagnetic environment of many diabetics has reduced their symptoms and their blood sugar levels.<sup>10</sup>

<sup>1</sup> LG Salford *et al.*, "Nerve Cell Damage in Mammalian Brain after Exposure to Microwaves 60m GSM Mobile Phones," *Environmental Health Perspectives* 111:888-883, 2003.

<sup>2</sup> R Santini *et al.*, "Symptoms Experienced by Users of Digital Cellular Phones," *Electromagnetic Biology and Medicine* 21:81-88, 2002;

<sup>3</sup> OE Salama *et al.*, "Cellular phones : Are they detrimental?" *Journal of the Egyptian Public Health Association* 79(3-4): 197-223, 2004.

<sup>4</sup> EA Navarro *et al.*, "The Microwave Syndrome: A Preliminary Study in Spain," *Electromagnetic Biology and Medicine* 22:161-169, 2003;

<sup>5</sup> H-P Hutter *et al.*, "Subjective symptoms, sleeping problems, and cognitive performance in subjects living near mobile phone base stations," *Occupational and Environmental Medicine* 63:307-13, 2006;

<sup>6</sup> G Abdel-Rassoul *et al.*, "Neurobehavioral effects among inhabitants around mobile phone base stations," *NeuroToxicology* 28:434-440, 2007.

<sup>7</sup> I Fejes *et al.*, "Relationship Between Regular Cell Phone Use and Human Semen Quality," paper presented at the 20<sup>th</sup> Annual Meeting of the European Society of Human Reproduction and Embryology, Berlin, June 29, 2004.

<sup>8</sup> A Agarwal *et al.*, "Effect of Cell Phone Usage on Semen Analysis in Men Attending Infertility Clinic," paper presented at the American Society for Reproductive Medicine 62<sup>nd</sup> Annual Meeting, New Orleans, October 21-25, 2006.

<sup>9</sup> J Bielski, M Sikorski, "Disturbances of glucose tolerance in workers exposed to electromagnetic radiation," *Medycyna Pracy* 47(3):227-231, 1996.

<sup>10</sup> M Havas, "Electromagnetic Hypersensitivity: Biological Effects of Dirty Electricity with Emphasis on Diabetes and Multiple Sclerosis," *Electromagnetic Biology and Medicine* 25:259-286, 2006.

**"I have no doubt in my mind that at the present time, the greatest polluting element in the earth's environment is the proliferation of electromagnetic fields. I consider that to be far greater, on a global scale, than warming, and the increase in chemical elements in the environment."**



# County of Santa Cruz

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July 10, 2007

Senator Dianne Feinstein  
331 Hart Office Building  
Washington, D.C. 20510

Dear Senator Feinstein:

I am writing at the unanimous direction of the Santa Cruz County Board of Supervisors to convey our grave concern about the current regulatory context for permitting cell towers ("wireless communications facilities" or "WCFs"). As you are aware, as a result of existing federal law, local government has no ability to regulate the siting of WCFs based on the possible health and environmental effects of radio-frequency radiation ("RF emissions") to the extent that a WCF complies with Federal Communications Commission standards.

Within the constraints of our ability to regulate in this area, Santa Cruz County adopted a wireless communication facilities ordinance in 2004 (see attached) regulating potential visual impact issues related to cell tower placement. Our ordinance generally prohibits WCFs on parcels zoned single-family residential, multi-family residential or on school grounds on the basis that WCFs are incompatible commercial uses on such parcels. The ordinance also includes restrictions in other zone districts but again, pursuant to federal law, does not address any health effects associated with RF emissions.

There is mounting concern that a conclusive study has not been undertaken at the federal level to evaluate the health considerations associated with this technology. We believe that such a study must be ordered and financed by the federal government to answer the public's very real questions about the health impacts associated with WCFs and RF emissions. Clearly, if any health effects are identified by these studies, necessary controls on this technology must be put in place to protect the public health and welfare at the level of government possessing regulatory authority.

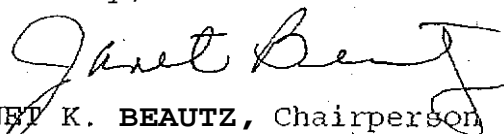
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July 10, 2007  
Page 2

I might add that as more and more people are concerned with this technology, they are also quite outraged that Congress has completely precluded any meaningful review by local government where they can actually participate. This is seen as another "sell out" to large corporations that only care about money and not people.

Accordingly, we are writing to ask that you make every effort to see that the federal government authorizes and funds a thorough study of this issue *so* that the public has answers to what are very legitimate questions and concerns about the health effects of this technology. Please feel free to contact me if I can provide any further information.

Sincerely,



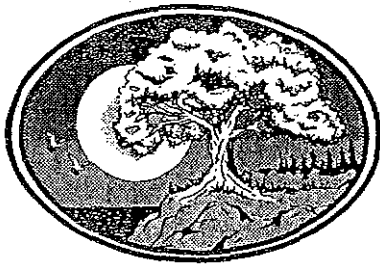
JANET K. BEAUTZ, Chairperson  
Board of Supervisors

JKB:ted

cc: Clerk of the Board

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P.19



# Live Oak School District

Excellence is achieved through a caring partnership

David S. Paine, Ed.D.  
Superintendent

July 30, 2007

Richard Fontana, General Manager  
Ledyard Company  
1005 17<sup>th</sup> Avenue  
Santa Cruz, CA 95062

Dear Mr. Fontana,

It has recently come to my attention that a cell phone tower is being planned **for** installation at your site adjacent to Shoreline Middle School located at 855 17<sup>th</sup> Avenue.

I acknowledge that there are conflicting views and perspectives about the potential effects of exposure to the electromagnetic radiation (EMR) produced by such towers. However, when the possibility for potential negative impact on students' health and safety becomes a concern, it is incumbent upon the leadership of the Live Oak School District to express its concern to the parties involved.

As a result, I **am** asking that all decisions involving the installation of cell towers be put **on** hold and that prudent caution be exercised until all such towers are proven conclusively to be safe. I am asking specifically that this item be removed from the August 3<sup>rd</sup> Santa Cruz County Zoning Administrator's meeting and delayed to a later date when members of the school community will be available to participate in the discussion.

Sincerely,

David S. Paine, Ed.D.  
Superintendent

- C: Live Oak School District Board of Trustees  
✓ Jan Beautz, Santa Cruz County Board of Supervisors  
Pia Levine, Santa Cruz County Planning  
John Laird, California Assembly Member  
Sam Farr, U.S. Representative  
Jessica Middour and Victoria Edgell, Live Oak Elementary Teachers' Association  
Gary Wilson, California School Employees' Association  
Marilyn Garrett

Rick Apple  
1682 Colony Way  
Santa Cruz, CA  
95062-3066  
July 24<sup>th</sup>, 2007

Zoning Administrator  
County Government Center  
701 Ocean Street, Room 400  
Santa Cruz, CA 95060

Re: 06-0701 (Proposal Number? Hearing Number?)  
APN(S): 026-311-65 (Parcel Number)

Zoning Administrator,

I am opposing the Commercial Development Permit request for the wireless communication facility at 1053 17<sup>th</sup> Avenue in the Live Oak Planning Area, or at least the waiver of the requirement that the tower be set back 300-feet from the residentially zoned parcels on El Dorado.

I am opposing the proposal (and if the proposal is accepted, the waiver) based on the resulting visibility of the "monopole" from residential areas I live near and walk through.

It is my understanding that federal laws protecting the telecommunications industry do not allow communities to prevent private owners from putting up cell towers based on health concerns, so it seems to me that our zoning laws are all we have to control where cell towers are placed.

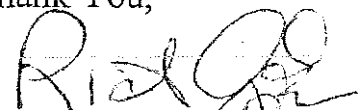
In accordance with zoning rules, please accept my request that the proposal be denied, or at least the waiver to the 300 foot set-back rule denied, based on whatever the zoning considerations were to put that 300 foot rule into place to begin with.

If I'm not up on the rules of the telecommunications act and objections based on the possible health risks of cell towers are acceptable for arguments to accept or deny such proposals and/or waivers to the 300 foot zoning rule, please also accept my request that the proposal or at least the waiver be denied on the "health risk" basis as well.

It is exactly the zoning laws that many concerned communities across this country are using as a means to "not take **any** chances" with the health of their citizens, especially small children. Typically the zoning requirement they use to keep cell towers away from residential neighborhoods, public parks, playgrounds and schools is a 500 foot rule rather than the 300 foot rule we have.

So at the very least please do enforce the zoning rules that we have. I regret that I will only be able to submit these written comments because my work load and project deadlines are too pressing for me to attend this hearing on Friday, August 3<sup>rd</sup>.

Thank You,



**Cathy Graves**

From: Douglas Johnson [djcruserl@yahoo.com]  
 Sent: Thursday, August 02, 2007 2:16 PM  
 To: Don Bussey; Glenda Hill; Cathy Graves; Jan Beautz  
 CC: Ellen Pirie; Neal Coonerty, Tony Campos, Mark Stone  
 Subject: Zoning Administrator, Aug. 3 hearing

August 2, 2007

Don Bussey, Glenda Hill  
 Zoning Administrator  
 Planning, County of Santa Cruz  
 701 Ocean Street, 4th Floor  
 Santa Cruz, CA 95060

Subject: Ledyard Application & Waiver, 06-0701

Dear **Mr. Bussey & Ms. Hill** -

I'm a resident on the southern end of El Dorado Avenue in Santa Cruz and a newcomer to the subject of cell phone towers and their impact on neighbors living near them. Since reading your August 3 hearing notice, I've been trying to learn about this Ledyard proposal and the issues regarding cell towers.

- 1) Would this project increase the sound level generated by Ledyard at night? Would it result in Ledyard trucks being "staged" closer to my home? The refrigeration motors droning and restarting on the trucks often interferes with my sleep at night. Also, some studies mention continuous low intensity electromagnetic radiation (produced by cell towers) as responsible for "changes in sleep patterns." Will "humming" or other sound from the tower equipment be added to the trucks' refrigeration motor noise?
- 2) What community good or public good would be gained by approving this waiver from the county's zoning laws? Wouldn't the waiver result in putting the cell tower project closer to me and my neighbors? How would approving this waiver request accomplish a community benefit for me and my neighbors? Don't the zoning laws exist for the benefit of the entire neighborhood? Would approving this waiver request be fair to the people living near the proposed cell tower project?
- 3) I asked Dr. Dean Edell, "America's Doctor," on July 30, 2007, if he would want a cell phone tower built a few hundred feet from his home. He said no. Dr. Edell would object because of the possible negative impact on nearby real estate values. Separate from the possible health issues posed by cell towers, if people **believe** cell towers are a health hazard to nearby residents, nearby property values may be reduced.
- 4) Some studies say continuous exposure to electromagnetic radiation from cell towers sustained by nearby neighbors is not healthy. Dr. Dean Edell told me there are no definitive studies yet that settle the health issues conclusively, but he said, "Occasionally [there's] a 'bump' [an increase in medical statistics] for people who work on the [cell] tower(s)." This information may interest Richard Fontana and the people who would work on the tower. Dr. Edell added that cell towers may be "like cigarettes" in that possible health hazards may not be proven until more scientific studies are completed.
- 5) A physician familiar with leukemia research was interviewed by KGO Radio on July 30, 2007, following the death of former Forty-Niners coach Bill Walsh. The doctor said there are two known causes of leukemia: "benzene and radiation." I wonder if researchers will eventually discover that continuous exposure to cell phone tower radiation is a contributing factor to some incidences of leukemia.

6) What will the tower and facility actually look like? That's not clear to me.

### Conclusion

At minimum, I'd like more time to read the entire project application and the accompanying public documents before you *make* a decision on this matter. Would you be willing to allow neighbors like me who live near the proposed cell phone tower to review all of **the** proposed project's application documents before you make any decision on this project and its waiver?

Sincerely,

Douglas Johnson

P. O. Box 5274  
Santa Cruz, CA 95063

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-----Original Message-----

From: pleasure\_point\_1@yahoo.com [mailto:pleasure-point-l@yahoo.com]

Sent: Tuesday, August 21, 2007 4:20 PM

To: Cathy Graves; Jan Beautz

Subject: Cell tower

0.1.06-0701 1053 17TH AVENUE, SANTACRUZ

APN(S): 026-311-65

I would not grant an exemption for the placement of this tower.

The School board seems to have questions about their safety.

As it is close to the swim center, school, neighbors and a busy road, it would be wise to use the little regulatory power the County has.

This would seem to be one of the worse places to put a tower, even if it may only have health risks.

Remember DDT, lead paint, X Rays to see how shoes fit, even smoking was supposed to be good.

We have only a tiny amount of say over this technology, please do not test it on our kids.

Thank you

Charles Paulden