

FILE # P13-00186

NAPA COUNTY
PLANNING, BUILDING, AND ENVIRONMENTAL SERVICES
 1195 Third Street, Suite 210, Napa, California, 94559 • (707) 253-4417

APPLICATION FOR TELECOM SITE PLAN APPROVAL

A Tradition of Stewardship
 A Commitment to Service

FOR OFFICE USE ONLY

ZONING DISTRICT: AW Date Submitted: 6.4.13
 TYPE OF APPLICATION: Use Permit Date Published: _____
 REQUEST: _____ Date Complete: _____

TO BE COMPLETED BY APPLICANT

(Please type or print legibly)

PROJECT NAME: Capell Valley - VerizonAssessor's Parcel #: 025-330-019Existing Parcel Size: 41.26 ac

Site Address/Location: 1998 Capell Valley Road, Napa CA 94558
No. Street City State Zip

Property Owner's Name: Richard and Julie Bissett

Mailing Address: P.O. Box 2482 Yountville CA 94599
Street City State Zip

Telephone #: (707) 333-5493 Fax #: () - E-Mail: rich@btcmnc.com

Applicant's Name: Verizon Wireless

Mailing Address: 2785 Mitchell Drive Walnut Creek, CA 94598
Street City State Zip

Telephone #: (925) 279-6000 Fax #: () - E-Mail: _____

Status of Applicant's Interest in Property: LesseeRepresentative Name: NSA Wireless Inc., attn: Pamela Nobel

Mailing Address: 2000 Crow Canyon Place #400 San Ramon CA 94583
Street City State Zip

Telephone #: (707) 486-7252 Fax #: (925) 355-0672 E-Mail: pdnobel@earthlink.net

I certify that all the information contained in this application, including but not limited to the information sheet, water supply/waste disposal information sheet, site plan, floor plan, building elevations, water supply/waste disposal system site plan and toxic materials list, is complete and accurate to the best of my knowledge. I hereby authorize such investigations including access to County Assessor's Records as are deemed necessary by the County Planning Division for preparation of reports related to this application, including the right of access to the property involved.

Richard Bissett 5-22-13
Signature of Property Owner Date

Richard Bissett
Print Name

Pamela Nobel 5/22/13
Signature of Applicant Date

PAMELA NOBEL
Print Name

TO BE COMPLETED BY PLANNING, BUILDING, AND ENVIRONMENTAL SERVICES

Application Fee Deposit: \$ 5,000 Receipt No.: _____ Received by: 88 Date: 6.4.13

Project Description

Site Name: Capell Valley # 249853
Proposed Verizon Wireless facility located at
1998 Capell Valley Road
Napa, CA
Owner: Richard and Julie Bissett
APN: 025-330-019 – Zoned: AW

Introduction

Verizon Wireless is the largest wireless communications provider in the U.S. with more than 27 million wireless voice and data customers. The coast-to-coast wireless provider was formed by the combination of the U.S. wireless businesses of Bell Atlantic Corp. and GTE Corp - now Verizon Communications (NYSE:VZ) - and Vodafone (NYSE and LSE: VOD). The new company includes the assets of Bell Atlantic Mobile, AirTouch Cellular, GTE Wireless and PrimeCo Personal Communications.

Verizon and its affiliates have acquired licenses from the Federal Communication Commission (“FCC”) and the CPUC. These licenses include Napa County, California. The regional system operates under the name GTE Mobilnet of California Limited Partnership, a California limited partnership, d/b/a Verizon Wireless, by Cellco Partnership, its general partner.

Applicant's Request

GTE Mobilnet of California Limited Partnership, a California limited partnership, d/b/a Verizon Wireless formally requests pursuant to the Napa County Telecommunications Facility Code Section 18.119, approval of a Use Permit for the installation a new unmanned telecommunications facility located at 1998 Capell Valley Road in Napa, California. APN: 025-330-019, zoned AW.

Project Description

Pursuant to Napa County Telecommunication Facilities Code, Section 18.119, GTE Mobilnet of California Limited Partnership, a California limited partnership, dba Verizon Wireless proposes to install an unmanned telecommunication facility consisting of a new 120 foot high free standing Lattice Tower to hold 12 (six foot) antennas, 2 (six foot) micro dishes, 2 GPS, with a new 12' by 16' prefabricated equipment shelter and a stand by generator * within a 30' x 30' fenced in lease area. Access to the site is from a public right of way Hwy 128 on an existing paved road that will be extended with gravel approximately 90 feet +/-, to include a turnout per Napa County Fire department requirements.

*Verizon will include a new stand-by 30KW diesel generator with a 132-gallon diesel fuel tank. This generator will supply power in emergency situations only. This is part of Verizon's homeland security initiative. Verizon wants the entire network to be able to sustain itself in the event of blackout situations. The generator shall meet all noise standards of the County of Napa.

Maintenance

The facility will be unmanned and will be visited only monthly for routine maintenance. The facility will emit no glare, odor or noise above acceptable levels, and will not have any signage other than those required for identification as mandated by the FCC and FAA, which are designed to protect public safety. To ensure structural integrity of the facility, the facility will be constructed and maintained in compliance with all federal, state and local building codes and standards. In addition, each facility is monitored 24 hours a day, electronically for intrusion and environmental disruption. The facility will also contain a sign identifying a 1-800 number to call in case of an emergency (manned 24 hours a day by Verizon employees) and identifying it as a Verizon facility. Verizon will be in compliance with all FCC regulations regarding signage at the facility.

Need for Site and Location Justification

Wireless phone systems operate on a “grid” system, whereby overlapping “cells” mesh to form a seamless wireless network. The technical criteria for establishing cell sites are very exacting as to both the height and location of the telecommunication facility. Based on a computerized engineering study, which takes into account, among other things, local population density, traffic patterns, and topography, Verizon Wireless’s RF engineers have identified this location as being a necessary and appropriate location for a cell site in order to provide coverage along Highway 128 and Knoxville Road. Residents and tourists traveling between Lake Berryessa and City of Napa as well as to the surrounding Napa County community use these roads.

Types of Services provided by applicant will include wireless, voice, and data to its customers.

No Existing Telecommunications Towers within 1 mile of proposed location.

SEE COLOR CODED RF MAP FOR EXISTING AND PROPOSED COVERAGE

Alternative Site Analysis

Verizon Wireless investigated existing structures, towers and buildings high enough to accommodate the coverage objectives. (No existing buildings, towers or structures were identified in the objective search area except the proposed location)

(1) Monticello PGE Station –1525 Berryessa Knoxville Road – Did not provide needed coverage due to topography

(2) 1965 Capell– RF rejected site as “too low” to provide coverage objective

(3) Top of Hill Napa County Regional park & Open Space District- APN: 019-220-018 Area owned by BLM and Napa County. Researched with Regional Parks Dept. John Woodbury and confirmed that County owned land was land locked and not accessible other than boat- also no utilities available.

(4) PGE Towers along Sage Canyon Road – RF engineer rejected as “being shadowed” by terrain and not providing coverage to Highway 128 or Berryessa Knoxville Road.

Radio Frequency

The proposed facility will be designed and constructed to meet applicable governmental and industry safety standards. Verizon Wireless continues to comply with all FCC governing construction requirements, technical standards, interference protection, power limitations, and radio frequency standards. Any and all RF emissions are subject to the exclusive jurisdiction of the FCC. (See EMF Evaluation dated May 17, 2012)

Standby Generator for emergency back up power supply

In order for Verizon to maintain the site’s operational capability in the event of an emergency or extended power outage, a 30 kW diesel fired generator will be installed at time of construction. The generator itself is enclosed in a sound attenuated enclosure, utilizes a muffler with the exhaust pipe directed vertically approximately 8 feet above ground level. The generator would run for extended periods of time only in the event of a natural disaster, other emergency or prolonged power outage. Sound test results are available for the proposed generator and are attached for review.

Safety

The proposed site will be entirely self-monitored by sophisticated computers which connect directly to a central office and which alert personnel to equipment malfunction or breach of security. Moreover, no smoke, debris or other nuisance will be generated by the proposed facility.

The proposed facility will not be detrimental to nor will it endanger the public health, safety, morals, comfort, or general welfare of the community. The proposed facility will not pose a risk of explosion, fire or other danger to life or property due to proximity to other materials and the facility will be designed and a State of California qualified engineer will certify that the proposed facility will be structurally sound.

In Conclusion

Everyday, more than 296,000 “911” calls are made from wireless phones. According to the National Center for Health Statistics Interview Survey January – June 2010, 26.6% of U.S. Households are Wireless “Only” households. The proposed Verizon Wireless Telecommunications Facility enhances the general welfare of the community by providing the infrastructure for these calls, as well as providing vital means of communication during times of emergency when traditional land lines are not available or in cases of power failure. The carefully selected and designed facility allows these calls to occur while remaining a site that meets the needs of the community now and in the future.

For the purpose and duration of this application, the project manager is **NSA Wireless, Inc. located at 12893 Alcosta Blvd, Suite G San Ramon CA 94583, contact Pamela Nobel direct at (707) 486-7252, email: pdnobel@earthlink.net** or NSA Wireless at (925) 244-1890, and Fax: (925) 355-0672.

Verizon Wireless long-term responsible party and agent for service of process is:

GTE Mobilnet of California Limited Partnership,
dba Verizon Wireless
180 Washington Valley Road
Bedminster, New Jersey 07921
Attention: Network Real Estate

BASIC INFORMATION SHEET

- Telecommunications Facilities -

I. GENERAL

- A. Type of service(s) provided: ☒ cellular telephone ☐ cellular radio ☒ pcs ☐ paging ☐ tv
☐ broadcast radio ☒ other (please specify) LTE
- B. Service(s) offered to:
☒ general public ☒ private business ☒ police/fire/emergency medical aid ☒ other government
- C. Project phases: ☒ one ☐ two ☐ three ☐ more (please specify number) _____
- D. Estimated completion year for each phase: phase 1: 2014 phase 2: _____ phase 3: _____
- E. Actual time to construct each phase: ☒ less than 3 months ☐ more than 3 months
- F. Construction days: ☒ Monday - Friday ☐ other (please specify) _____
- G. Construction hours: ☒ 7:30 am - 5:30 pm ☐ other (please specify) _____ am to _____ pm
- H. Additional licenses/approvals required: District: _____ Regional: _____ State: _____
Federal FCC
- I. Proposed facility complies with all FCC rules, regulations & standards? ☒ yes ☐ no
- J. Open space easements or other similar use restrictions on the property? ☐ yes ☒ no
- K. Property contains other telecommunications facilities or Public Or Quasi-Public Uses? ☐ yes ☒ no
- L. Facilities shared with other telecommunication facilities:
☐ parking areas ☐ access roads ☐ utilities ☐ building(s)/enclosure(s)

II. TYPICAL OPERATION

- | | <u>Existing</u> | <u>Proposed</u> |
|--|-------------------|--|
| A. Days of operation: | _____ | <u>24/7</u> |
| B. Expected hours of operation: | _____ | <u>24/7</u> |
| C. Anticipated average number of visits to site | | |
| • during construction: | _____ trips/day | <u>1</u> trips/day |
| • after fully operational: | _____ trips/month | <u>1</u> trips/month |
| D. Transmitting frequency(ies): | _____ | <u>1985-1990, 824-960Mhz</u>
<u>1905-1910</u> |
| E. Transmitting direction(s) (e.g., SW 120°, 360°, etc): | _____ | <u>45° 140° 315°</u> |
| F. Effective radiated power: | _____ watts | <u>40</u> watts |
| G. Backup generator testing | | |
| • days: <input checked="" type="checkbox"/> Monday - Friday <input type="checkbox"/> other (please specify) _____ | | <u>once a day</u> |
| • hours: <input type="checkbox"/> 8:30 am - 4:30 pm <input checked="" type="checkbox"/> other (please specify) _____ | | _____ am to _____ pm <u>20 mins.</u> |

III. BASIC INSTALLATION

- A. Number of antennas proposed: 12 (initial configuration) _____ (ultimate configuration)
- B. Type of antennas proposed (e.g., whip, panel, etc): Panel (initial configuration)
_____ (ultimate configuration)

- C. Size of antennas proposed (dimensions): 71.1 x 23.9 x 7.9 in. (initial configuration)
 _____ (ultimate configuration)
- D. Distance between back of wall-mounted antenna & surface of wall: _____ inches
- E. Type of dish construction: ☐ mesh ☒ solid
- F. Number, height & diameter of tower(s) or mast(s): _____ feet
- G. Height of telecommunication facility: 120 ft (ultimate configuration) *(measured from natural grade below center of tower to highest point on the tower or the highest antenna, whichever is higher)*
 _____ ft (initial configuration)
- H. Capacity of tower:
 • Number of antennas it will support: tbd
 • Weight of antennas & equipment it will support: tbd/structural analysis
- I. Gross cross-sectional area (*silhouette*): _____ ft²
- J. Material: tower: steel antenna: _____
- K. Color: tower: grey antenna: grey
- L. Special painting/lighting required under FAA regulations: ☐ yes ☐ no
- M. Width of fire protection zone installed: Graveled area: _____ ft Fuel modification zone: _____ ft
- N. Domestic/emergency water supply available: ☐ yes ☒ no
- O. Bathroom(s) to be installed at facility: ☐ yes ☒ no
- P. Hazardous/toxic materials present at facility: ☐ yes ☒ no

IV. BUILDING(S)/ENCLOSURE(S)

- A. Size: _____ ft² ☒ new construction ☐ existing facility
- B. Height at highest point: 8 feet
- C. Type of construction (e.g., wood-frame): 6' high wooden fenced in 30' x 30' lease area
- D. Exterior materials: walls: _____ roof: _____
- E. Exterior color: walls: _____ roof: _____
- F. Type of emergency rapid entry system to be installed: _____
- G. Fire rating of interior surfaces: _____
- H. Type of interior fire extinguishing system to be installed: _____
- I. Method used to protect openings against penetration by fire or wind-blow embers: _____
- J. Width of fire protection zone installed: Graveled area: _____ ft fuel modification zone: _____ ft

V. ACCESS ROAD

- A. Relocation/extension required: ☒ yes ☐ no
- B. Length of new road required: 90 feet approx.
- C. Width including shoulders: existing: _____ feet proposed: 12 feet
- D. Road surface: existing: dirt proposed: gravel
- E. Number of turnouts: existing: _____ proposed: fire dept. turnout
- F. Width of pavement at turnouts: existing: _____ feet proposed: _____ feet
- G. Distance between turnouts: existing: _____ feet proposed: _____ feet

VI. OTHER ANCILLARY FACILITIES

- A. Type of self-contained power supply to be installed: ☐ None ☒ Batteries ☒ Generator
☐ Other (please specify) _____
- B. Number of hours self-contained power supply will operate facility: 24 hours
Batteries-24 hours, generator 7-10 days
- C. Type of exterior night lighting proposed
• Tower: _____
• Buildings: _____
• Other (please specify): n/a
- D. Nature of light shields to be installed: ☐ none ☐ other (please specify): _____
- E. Type of signage proposed: ☐ none ☐ address ☒ facility identification
☒ other (please specify) FCC required safety signage
- F. Size of parking area planned: n/a
• existing: _____ ft² • proposed: _____ ft²
- G. Utility line extensions required:
• Power lines: tbd feet • telecom lines: tbd feet
• Other (specify): _____ feet

VII. WATER SUPPLY (IF ANY) N/A - unmanned facility

- A. Drinking
• Proposed source of water (e.g., spring, well, mutual water co, city, district, etc.): _____
• Name of proposed water supplier (if water co, city, district, c): _____
• Annexation needed: ☐ yes ☐ no
- B. Emergency (Fire)
• Proposed source of water (e.g., spring, well, mutual water co, city, district, etc.): _____
• Name of proposed water supplier (if water co, city, district, c): _____
• Annexation needed: ☐ yes ☐ no
• Capacity of water storage system: _____ gallons
• Nature of storage facility (e.g., tank, reservoir, swimming pool, etc): _____

VIII. WASTE DISPOSAL N/A - unmanned facility

- A. Sewage
• Disposal method (e.g., septic system, ponds, community system, district, etc): _____
• Name of disposal agent (if district, city, community system, etc used): _____
- B. Operational solid waste
• Disposal location (e.g., on-site, landfill, garbage co, etc): _____
- C. Grading spoils/construction debris
• Disposal location (e.g., on-site, landfill, construction, etc): _____
- D. Hazardous/toxic materials
• Disposal method (on-site, landfill, garbage co, waste hauler, etc.): _____
• Name of disposal agent (if landfill, garbage co, private hauler, etc): _____

IX. SETBACKS

- A. Radial distance of tower/antenna from nearest
- Property line: 32 feet
 - Other telecommunication tower: feet
 - Other type of telecommunication facility: feet
 - Readily visible uncamouflaged/unscrewed telecommunication facility: feet
 - Dwelling: 300 feet
- Occupied by property owner or his family: ☐ yes ☒ no
- Non-residential structure regularly occupied by people: feet
 - Outdoor area regularly occupied by people: feet
 - Trail, park or other outdoor recreation area: feet
- B. Distance of guy wire anchors from nearest property line: feet

X. GROUND/VEGETATION DISTURBANCE

- A. Slope of area(s) to be disturbed: maximum: 38 % average: 12 %
- B. Height of highest
- New cut or existing cut to be modified: 3.5 feet
 - New fill or existing fill to be modified: 3.5 feet
 - New combination cut and fill or existing combination cut and fill to be modified: 3.5 feet
- C. Number, species, diameter and height of trees to be removed: none
- | | | | | | |
|---------------|---------------|----------------------|-----|---------------|-----------|
| <u> </u> | <u> </u> | <u> </u> inches | BDH | <u> </u> | feet tall |
| <u> </u> | <u> </u> | <u> </u> inches | BDH | <u> </u> | feet tall |
| <u> </u> | <u> </u> | <u> </u> inches | BDH | <u> </u> | feet tall |
- D. Trees overhang or extend to within 10 feet of edges of access road: ☐ yes ☒ no
- E. Trees present within 100 feet of any area to be disturbed: ☐ yes ☒ no
- F. Ground/vegetation disturbance or storage/parking of equipment/vehicles may occur within the drip Line of any trees: ☐ yes ☒ no
- G. Vegetation replanting program proposed: ☐ yes ☒ no (if yes please provide replanting plans)

INDEMNIFICATION AGREEMENT


Pursuant to Chapter 1.30 of the Napa County Code, as part of the application for a discretionary land use project approval for the project identified below, Applicant agrees to defend, indemnify, release and hold harmless Napa County, its agents, officers, attorneys, employees, departments, boards and commissions (hereafter collectively "County") from any claim, action or proceeding (hereafter collectively "proceeding") brought against County, the purpose of which is to attack, set aside, void or annul the discretionary project approval of the County, or an action relating to this project required by any such proceeding to be taken to comply with the California Environmental Quality Act by County, or both. This indemnification shall include, but not be limited to damages awarded against the County, if any, and cost of suit, attorneys' fees, and other liabilities and expenses incurred in connection with such proceeding that relate to this discretionary approval or an action related to this project taken to comply with CEQA whether incurred by the Applicant, the County, and/or the parties initiating or bringing such proceeding. Applicant further agrees to indemnify the County for all of County's costs, attorneys' fees, and damages, which the County incurs in enforcing this indemnification agreement.

Applicant further agrees, as a condition of project approval, to defend, indemnify and hold harmless the County for all costs incurred in additional investigation of or study of, or for supplementing, redrafting, revising, or amending any document (such as an EIR, negative declaration, specific plan, or general plan amendment) if made necessary by said proceeding and if the Applicant desires to pursue securing approvals which are conditioned on the approval of such documents.

In the event any such proceeding is brought, County shall promptly notify the Applicant of the proceeding, and County shall cooperate fully in the defense. If County fails to promptly notify the Applicant of the proceeding, or if County fails to cooperate fully in the defense, the Applicant shall not thereafter be responsible to defend, indemnify, or hold harmless the County. The County shall retain the right to participate in the defense of the proceeding if it bears its own attorneys' fees and costs, and defends the action in good faith. The Applicant shall not be required to pay or perform any settlement unless the settlement is approved by the Applicant.


Applicant

5/17/13
Date


Property Owner (if other than Applicant)

1998 Capell Valley Road, Napa - Site#249853
Project Identification

HAZARDOUS MATERIALS
INFORMATION SHEET

List all acutely/extremely hazardous materials that will be used or store at the site:

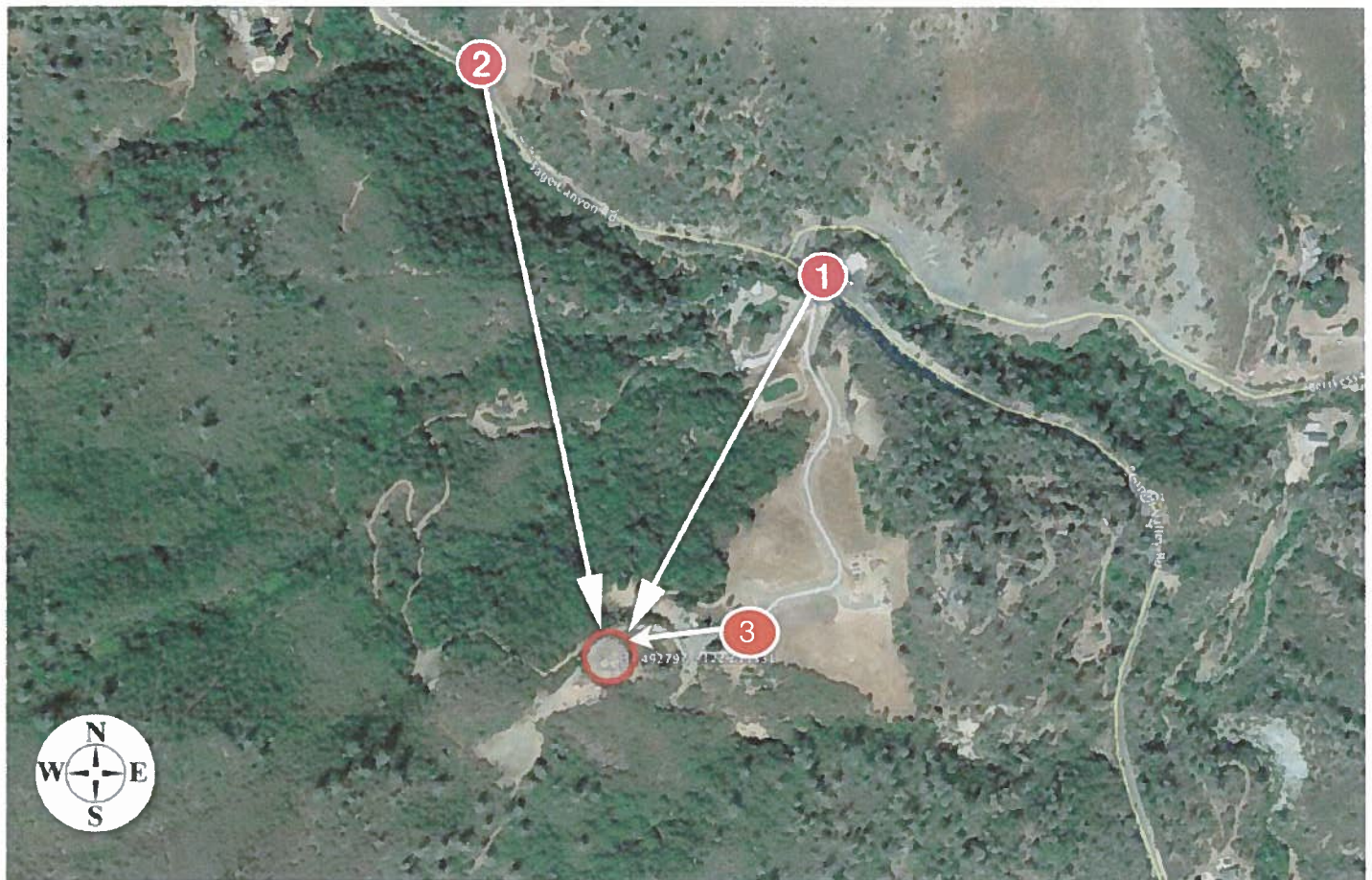
<u>C.A.S.#</u>	<u>Chemical Name</u>	<u>Physical State</u>	<u>Largest Amount</u>
<u>68476-30-2</u>	<u>No. 2 Diesel Fuel</u>	<u>Liquid</u>	<u>132 gallons</u>
<u>7439-92-1</u>	<u>Lead Battery</u>	<u>solid</u>	<u></u>
<u>1309-60-0</u>	<u>Lead oxide</u>	<u>solid</u>	<u></u>
<u>7664-93-9</u>	<u>Electrolyte</u>	<u>Electrolyte (sulfuric acid)</u>	<u>41.6 gallons</u>

List the hazardous materials that are stored or handled at any one time, equal to or greater than any one of the following amounts: 500 pounds of solids, 55 gallons of liquids, 200 cubic feet of compressed gasses (s.t.p.). Aggregate amounts of the same hazard class are considered one type of hazardous material and must be listed individually below.

<u>C.A.S.#</u>	<u>Chemical Name</u>	<u>Physical State</u>	<u>Largest Amount</u>
<u>68476-30-2</u>	<u>No. 2 Diesel Fuel</u>	<u>Liquid</u>	<u>132 gallons</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>

If you are unsure about the C.A.S.#, etc., your distributor or supplier should be able to provide you with a M.S.D.S. (Material Safety Data Sheet) which will contain that information. Your Workman's Compensation Insurer and the local libraries may also have access to this information.

If you are a tenant, you are responsible for proper notification to the property owner.



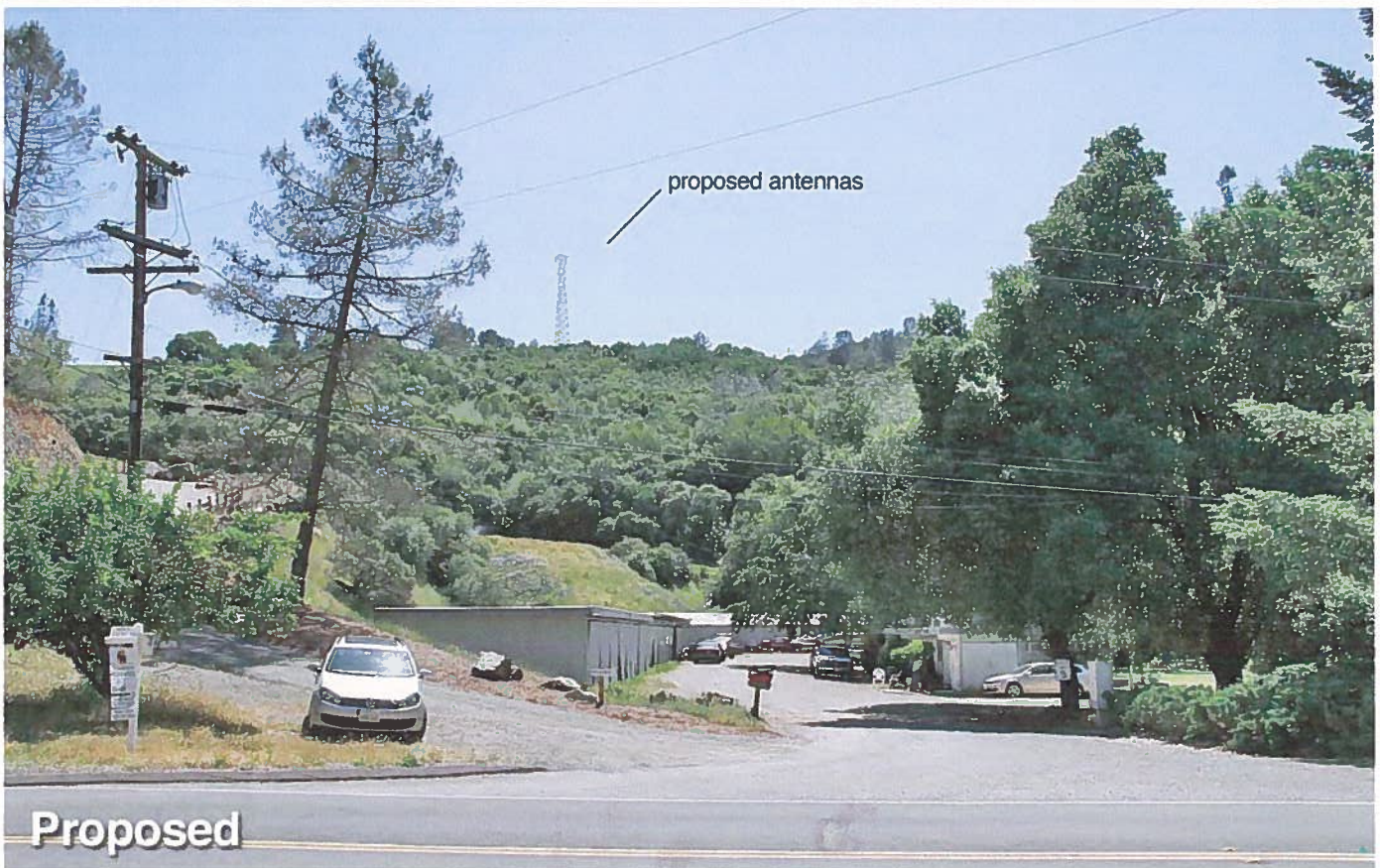
Capell Valley Site # 249853

Aerial Map

5/14/12

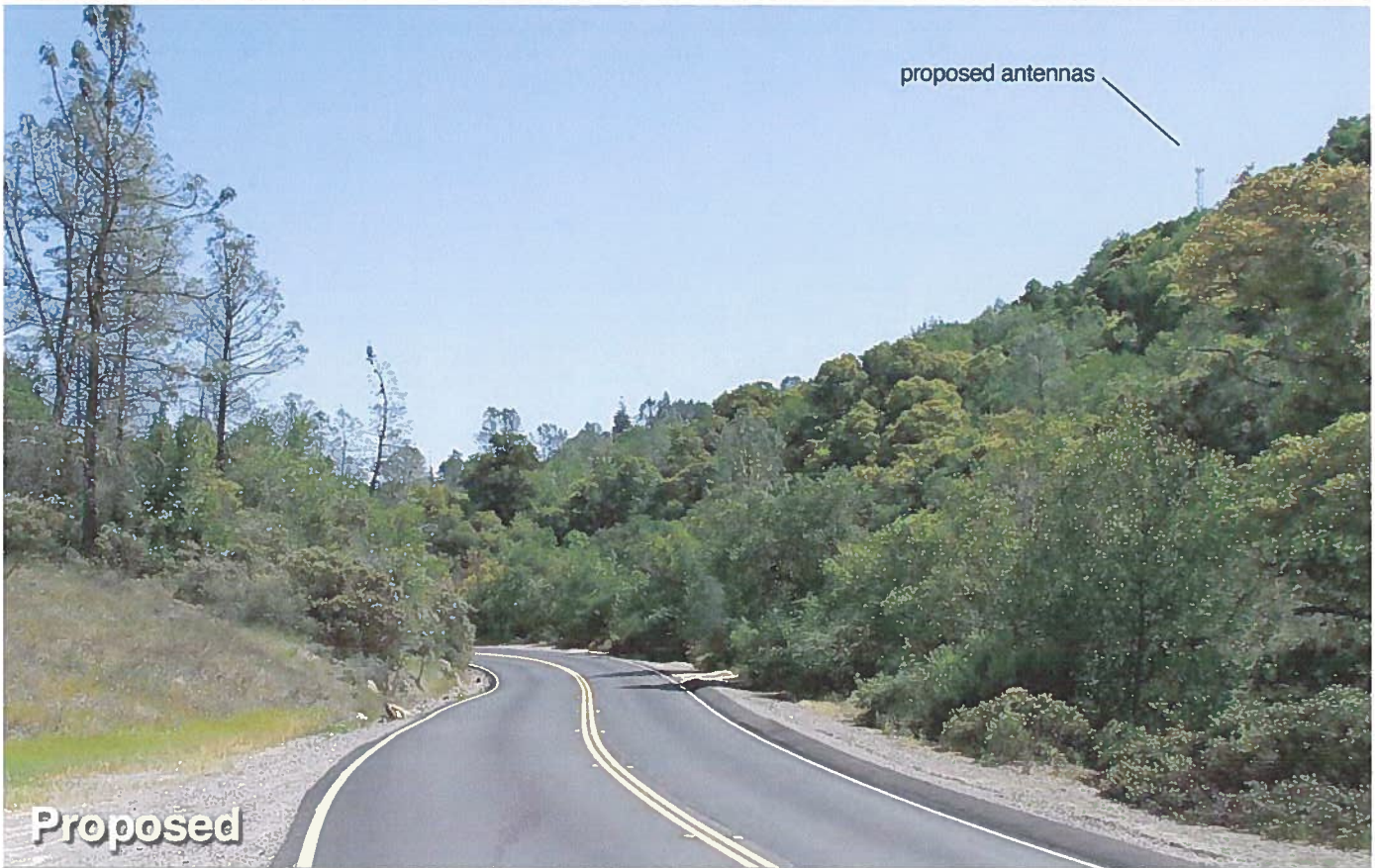
1998 Capell Valley Road
Napa, CA 94558

Applied Imagination 510 914-0500





Existing



proposed antennas

Proposed



Capell Valley

Site # 249853

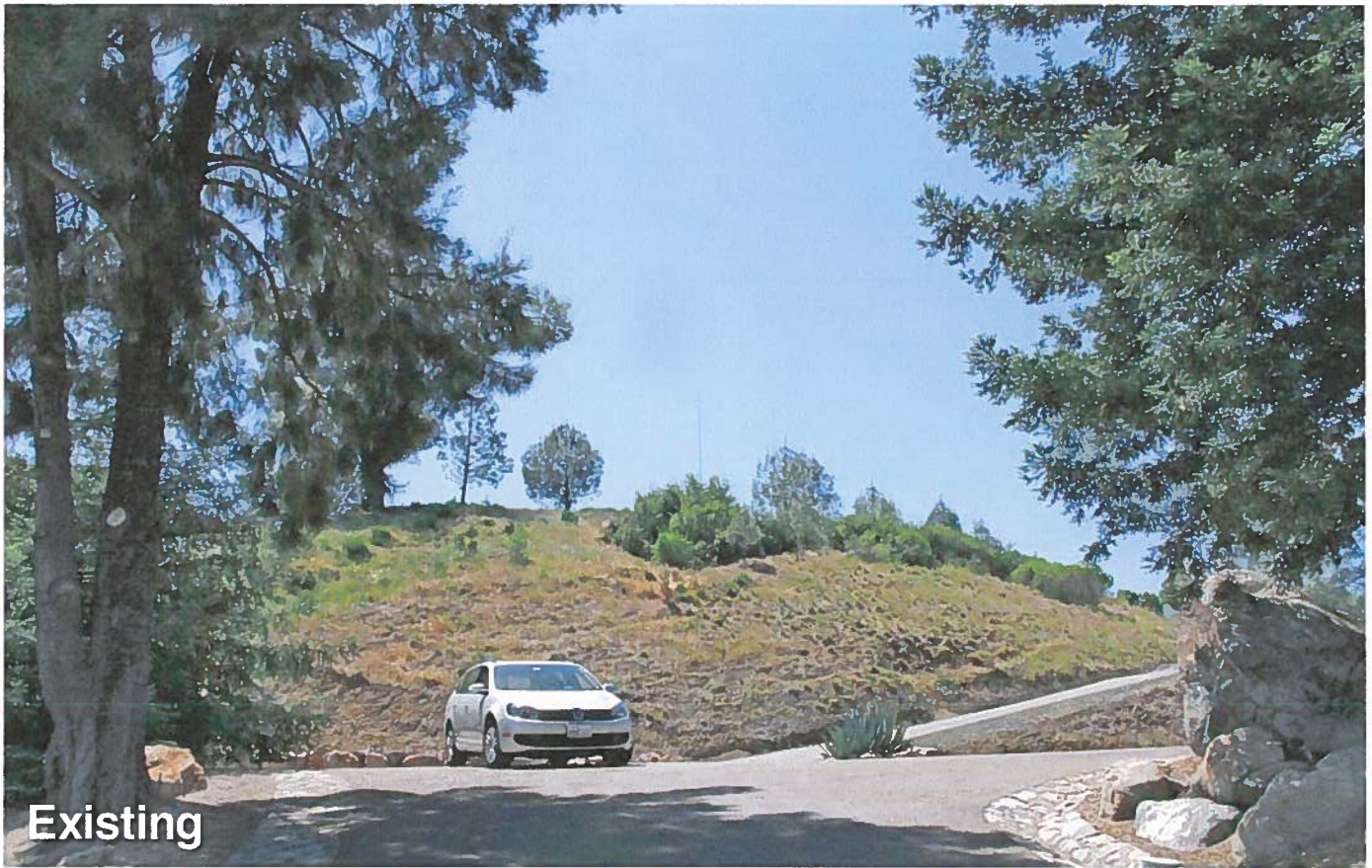
Looking Southeast from Capell Valley Road

5/14/12

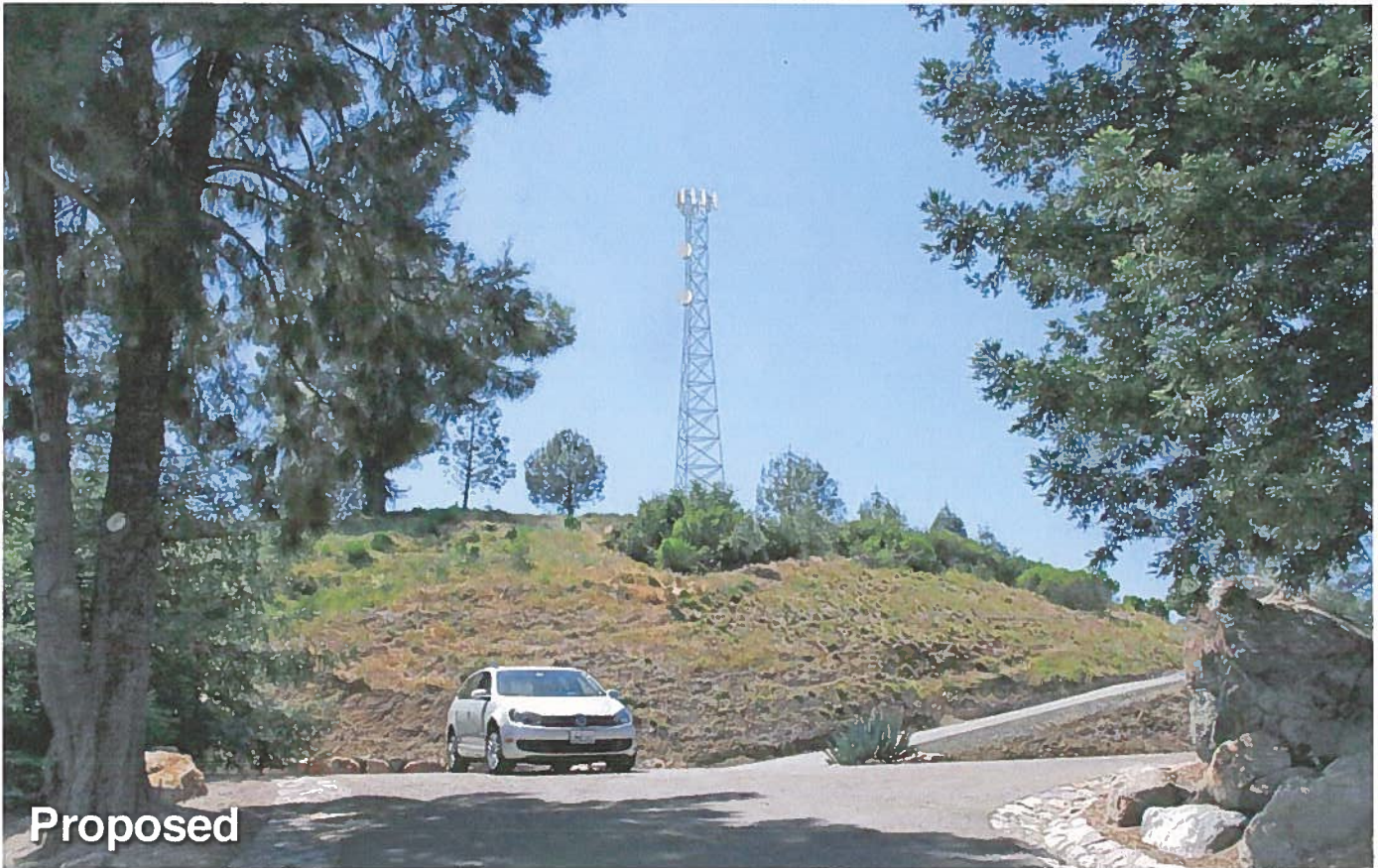
1998 Capell Valley Road
Napa, CA 94558

View #2

Applied Imagination 510 914-0500



Existing



Proposed



Capell Valley

Site # 249853

Looking West from Residence

5/14/12

1998 Capell Valley Road
Napa, CA 94558

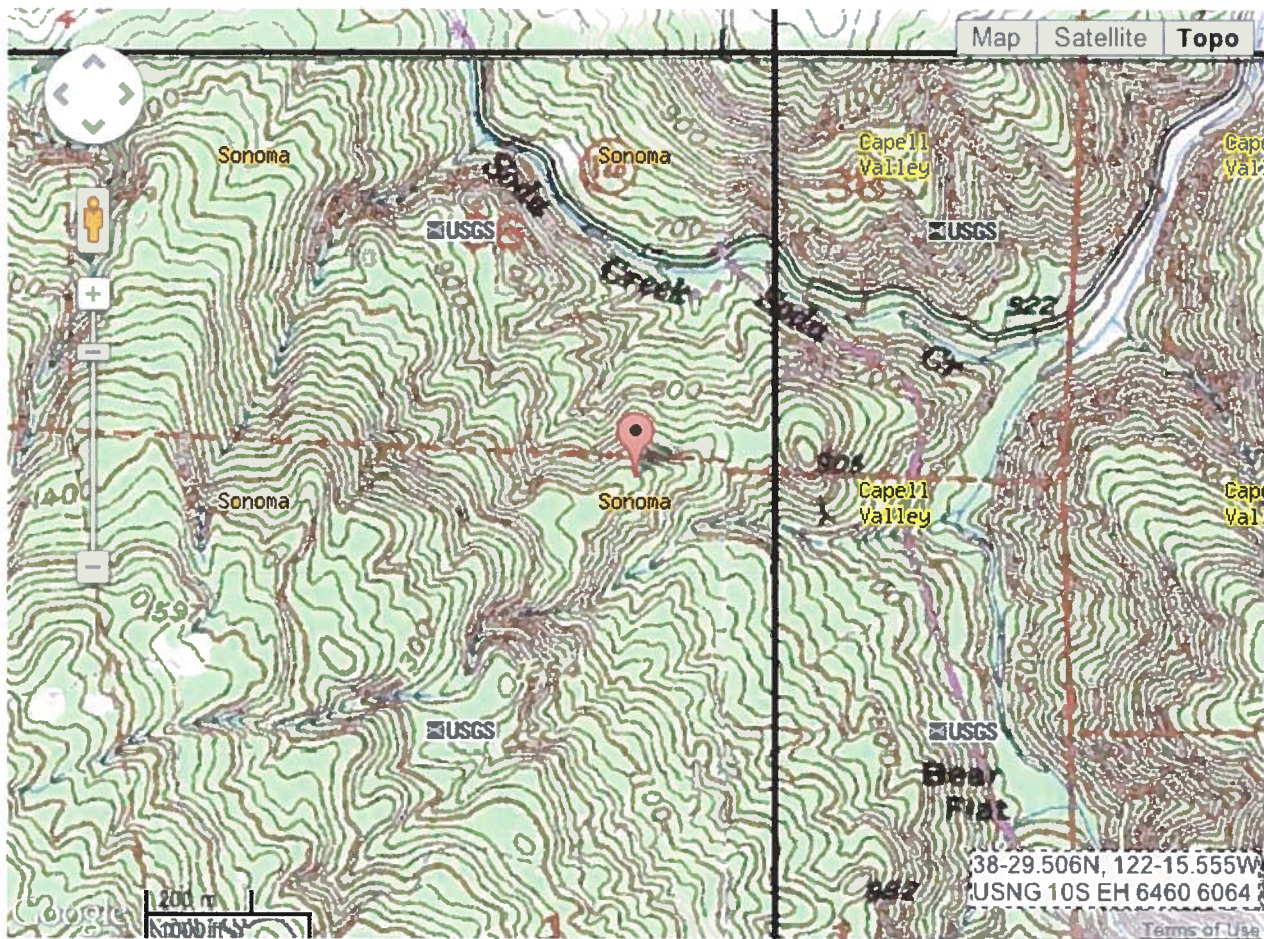
View #3

Applied Imagination 510 914-0500

SITE LOCATION MAP (U.S. GEOLOGICAL SURVEY)

GEOLOGICAL SURVEY
QUADRANGLE TITLE: _____

COUNTY FILE NO. _____



LEGEND

Show the following information
on the topographic map:

Parcel Boundary

Existing

Proposed

Structure

Septic System

Well

Spring

Reservoir

Road

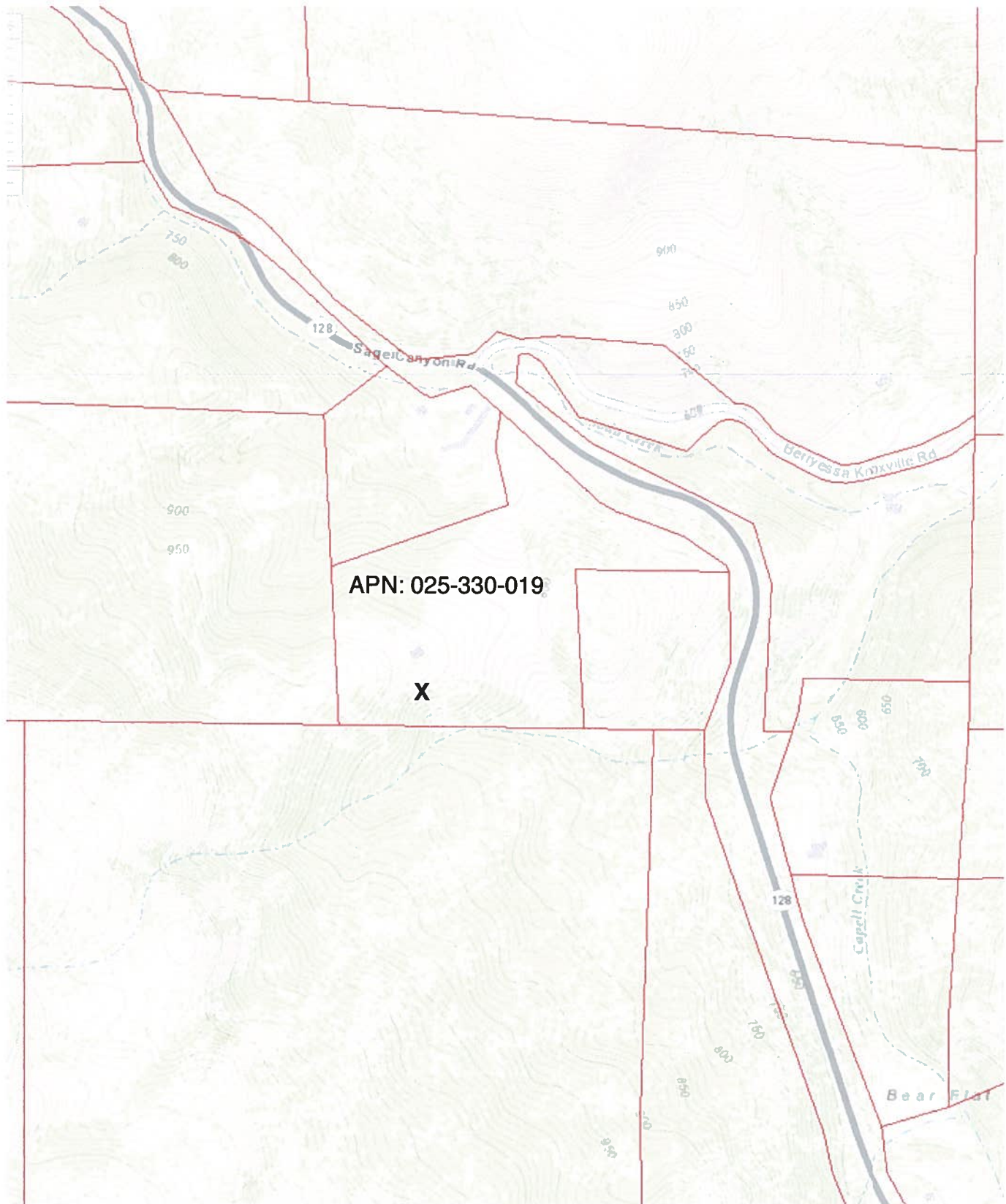
Parking Lot or
Outdoor Storage Area



APPLICANT NAME: Verizon Wireless
Property Location: APN: 025-330-019
Capell Valley Road

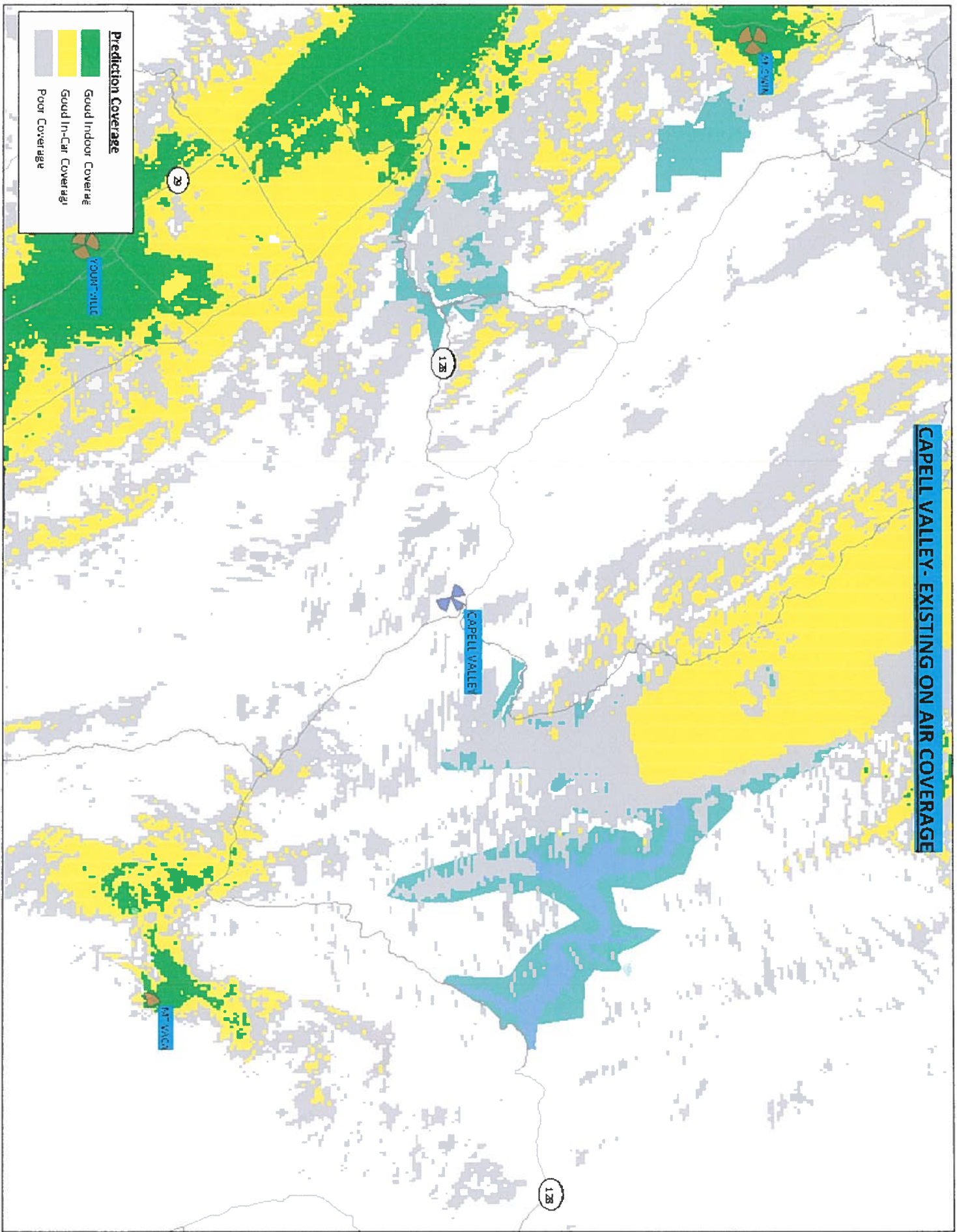
AP NO:
DATE: June 3, 2013

Owner: Richard and Julie Bissett



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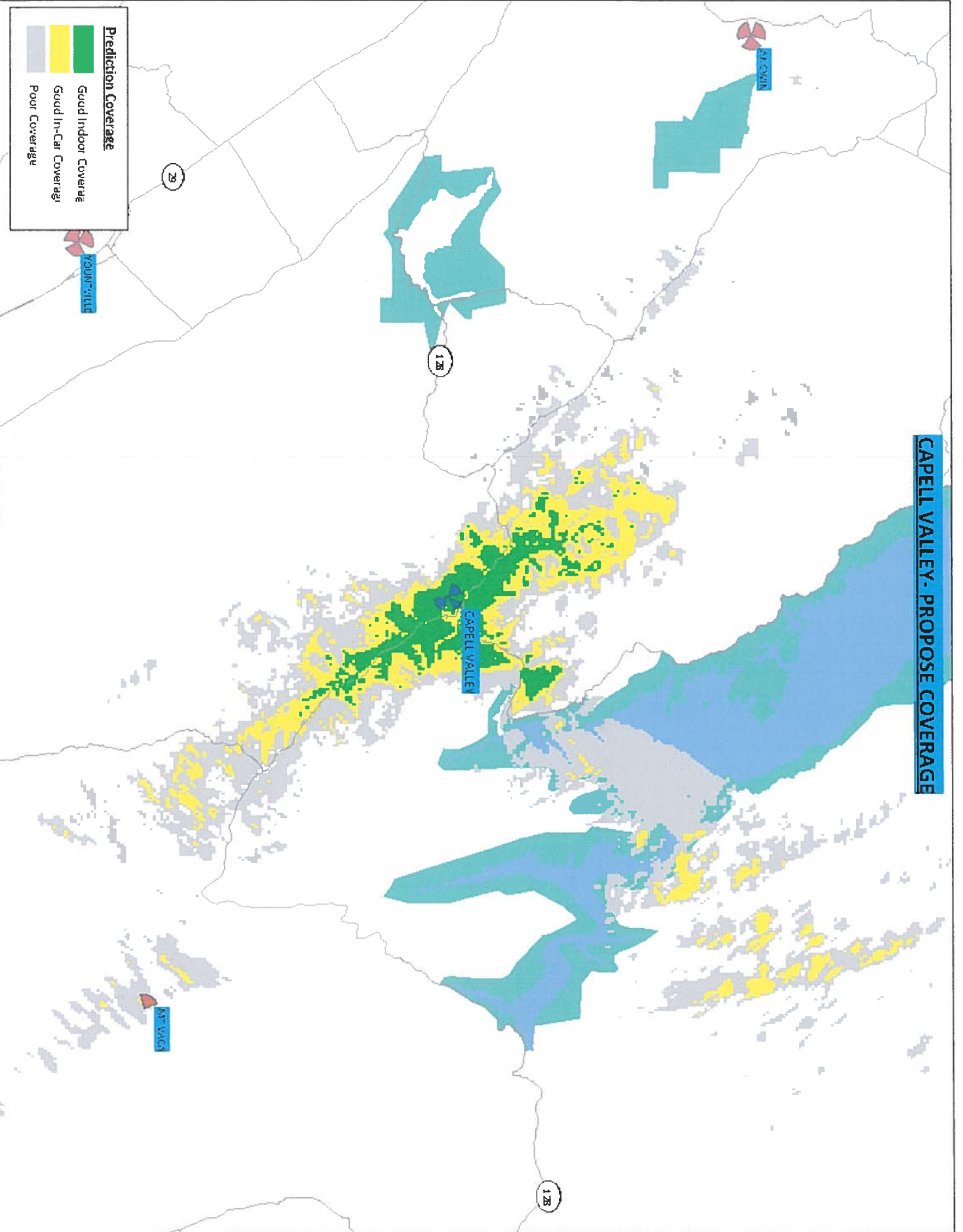
CAPEL VALLEY - EXISTING ON AIR COVERAGE



Prediction Coverage

- Good Indoor Coverage
- Good In-Car Coverage
- Poor Coverage

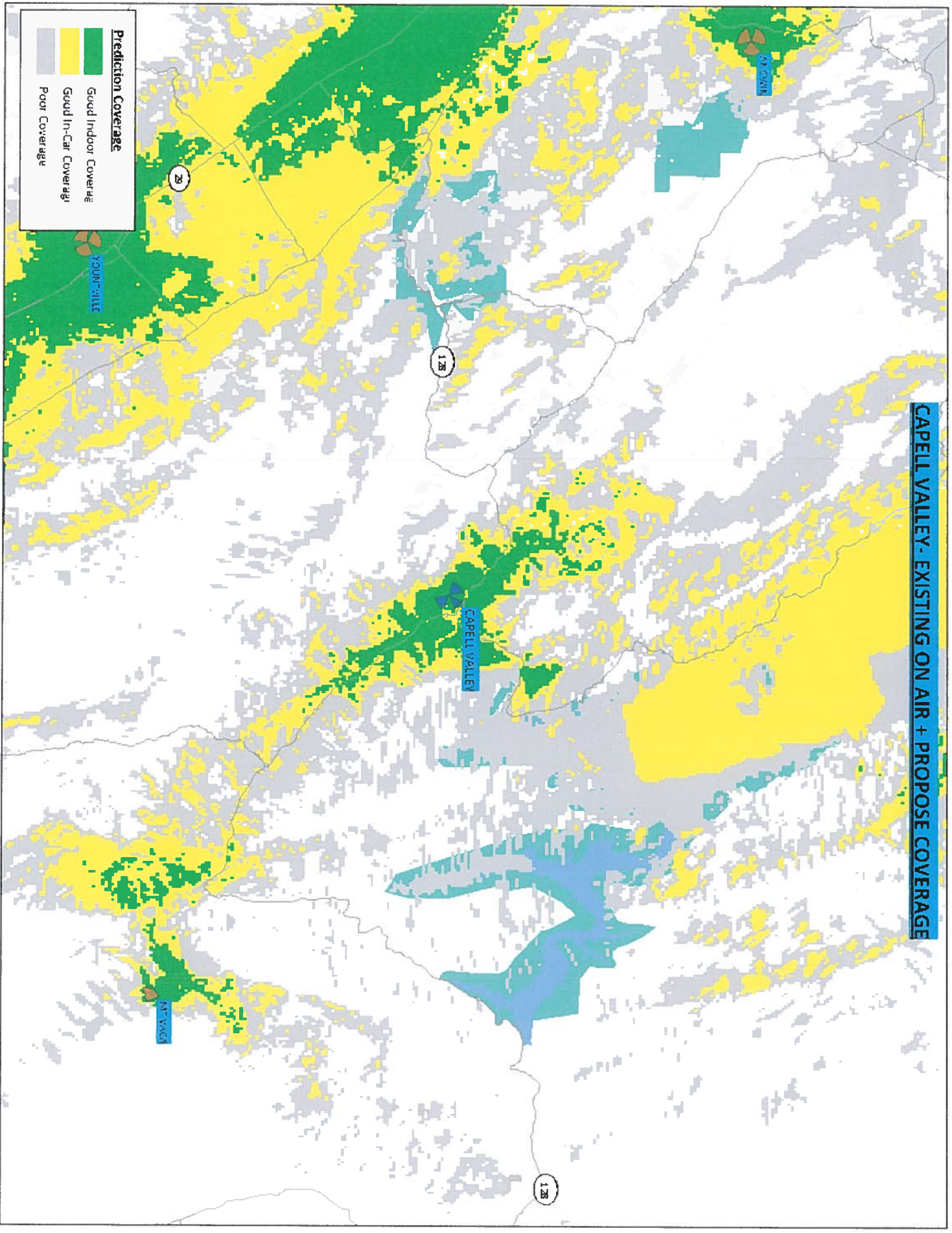
CAPELL VALLEY - PROPOSED COVERAGE



Prediction Coverage

- Good Indoor Coverage
- Good In-Car Coverage
- Poor Coverage

CAPELL VALLEY - EXISTING ON AIR + PROPOSE COVERAGE



Prediction Coverage

- Good Indoor Coverage
- Good In-Car Coverage
- Poor Coverage

**Verizon Wireless • Proposed Base Station (Site No. 249853 “Capell Valley”)
1998 Capell Valley Road • Napa, California**

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate the base station (Site No. 249853 “Capell Valley”) proposed to be located at 1998 Capell Valley Road in Napa, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

Executive Summary

Verizon proposes to install directional panel antennas on a tall lattice tower to be installed near Capell Valley Road and Berryessa Knoxville Road in Napa. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission (“FCC”) evaluate its actions for possible significant impact on the environment. A summary of the FCC’s exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Wireless Service	Frequency Band	Occupational Limit	Public Limit
Microwave (Point-to-Point)	5,000–80,000 MHz	5.00 mW/cm ²	1.00 mW/cm ²
BRS (Broadband Radio)	2,600	5.00	1.00
AWS (Advanced Wireless)	2,100	5.00	1.00
PCS (Personal Communication)	1,950	5.00	1.00
Cellular	870	2.90	0.58
SMR (Specialized Mobile Radio)	855	2.85	0.57
700 MHz	700	2.40	0.48
[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. A small antenna for reception of GPS signals is also required, mounted with a clear view of the sky. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the



**Verizon Wireless • Proposed Base Station (Site No. 249853 “Capell Valley”)
1998 Capell Valley Road • Napa, California**

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

Computer Modeling Method

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

Site and Facility Description

Based upon information provided by Verizon, including zoning drawings by HMM Design Group, LLC, dated February 29, 2012, it is proposed to install twelve Amphenol directional panel antennas – six Model BXA-70063/6, three Model BXA-70040/6, two Model WBX065X18M050, and one Model WBX045X20M050 – on a new 120-foot lattice tower to be installed on the hillside to the west of Highway 128 (Capell Valley Road) near the intersection with Berryessa Knoxville and Sage Canyon Roads. The antennas would be mounted with no downtilt at an effective height of about 117 feet above ground and would be oriented in groups of four toward 45°T, 140°T, and 315°T. The maximum effective radiated power in any direction would be 4,120 watts, representing simultaneous operation at 960 watts for PCS, 2,560 watts for cellular, and 600 watts for 700 MHz service. Proposed to be located on the same lattice tower are two 6-foot microwave “dish” antennas, for interconnection of this site with others in the Verizon network. There are reported no other wireless telecommunications base stations at the site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation, including the contribution of the microwave antennas, is calculated to be 0.0010 mW/cm², which is 0.17% of the applicable public exposure limit. The maximum calculated level at any nearby building* would be 0.16% of the public exposure limit. The maximum calculated level at the second-

* Located at least 100 feet away, based on photographs from Google Maps.



**Verizon Wireless • Proposed Base Station (Site No. 249853 "Capell Valley")
1998 Capell Valley Road • Napa, California**

floor elevation of any nearby residence[†] is 0.082% 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 from the proposed operation.

No Recommended Mitigation Measures

Due to their mounting locations, the Verizon antennas would not be accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. It is presumed that Verizon will, as an FCC licensee, take adequate steps to ensure that its employees or contractors comply with FCC occupational exposure guidelines whenever work is required near the antennas themselves.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the base station proposed by Verizon Wireless at 1998 Capell Valley Road in Napa, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2013. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



William F. Hammett
William F. Hammett, P.E.
707/996-5200

May 17, 2012

[†] Located at least 300 feet away, based on photographs from Google Maps.

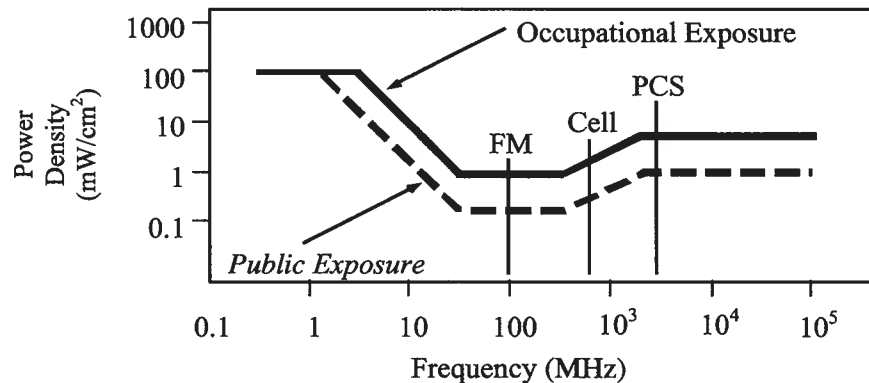


FCC Radio Frequency Protection Guide

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

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

Frequency Applicable Range (MHz)	Electromagnetic Fields (<i>f</i> is frequency of emission in MHz)					
	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm ²)	
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/f²</i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.89/f	<i>2.19/f</i>	900/f ²	<i>180/f²</i>
30 – 300	61.4	<i>27.5</i>	0.163	<i>0.0729</i>	1.0	<i>0.2</i>
300 – 1,500	3.54√ <i>f</i>	<i>1.59√f</i>	√ <i>f</i> /106	<i>√f/238</i>	<i>f/300</i>	<i>f/1500</i>
1,500 – 100,000	137	<i>61.4</i>	0.364	<i>0.163</i>	5.0	<i>1.0</i>



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



HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

FCC Guidelines
Figure 1

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

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

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

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/cm²,

where θ_{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

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



P13-00186

NSA Wireless, Inc.

Site Acquisition • Planning • Political Advocacy • Construction Management

Napa County Planning, Building
& Environmental Services

SEP 20 2013

RECEIVED

September 20, 2013

TO: Napa County
1195 Third Street, Suite 210
Napa, CA 94559

For: Verizon Wireless – Telecommunications Facility Proposal
Site Address: 1998 Capell Valley Road, Napa CA 94558
APN: 025-330-019
Owner: Bissett

Re: Response to August 21, 2013, and August 27 meeting with Jerry Haag/John McDowell

Submitted Herewith:

1. Verizon Response to August 21 and August 27 staff questions and concerns
2. Project Description
3. PGE Lattice Tower Photos and Verizon Lattice Photo sims
4. Alternative Location Maps
5. Propagation and Drive test Maps and results

Please let me know if you will need anything more to proceed.

Please Contact:

Pamela Nobel, Independent Contractor for:

NSA Wireless, Inc. representing Verizon Wireless

2010 Crow Canyon Place Suite 355

San Ramon, CA 94583

(707) 486-7252 Direct Line or NSA Wireless (925) 244-1890

(925) 355-0672 FAX

pdnobel@earthlink.net

TO: Jerry Haag **Verizon Response: September 20, 2013**

August 21, 2013 and August 27, 2013 Meeting - Jerry Haag & John McDowell

Re: Napa County File No.P13-00186-Verizon/Capell Valley

Pam—I met this morning with John McDowell, Deputy County Planning Director and Charlene Galena, Supervision Planner to discuss the Verizon application. Sorry that we didn't get to this earlier, but it has been difficult scheduling around various vacations.

Bottom line—here are staff concerns.

- 1) There is concern about the height and appearance of the proposed lattice tower. The Code requires facilities to be “effectively unnoticeable” and to blend in the with the surrounding natural environment to the fullest extent feasible. The proposal is really not consistent with these requirements, in staff's opinion.

Verizon Response:

The Lattice Tower for our site is the best design to blend naturally into the surrounding environment. The area has existing "Lattice" PGE towers seen on the ridge lines. From public highways, the proposed Verizon tower will be consistent and blend in nicely. While driving on public roads and from surrounding areas, utility lattice towers run throughout the natural environment and have become “effectively unnoticeable “

Therefore, the proposed Verizon lattice tower will simply blend in with its surrounding and will be consistent with Section 18.119.030 D that allows projects on exposed ridgeline or public trails providing that it will *“blend with the surrounding existing natural and man-made environment in such a manner as to be effectively unnoticeable”*. To place a 120 foot faux tree or monopole structure would be more noticeable and distracting and may not be consistent with this section.

Section 18.119.140 C “Additional trees and other native or adapted vegetation shall be planted and henceforth maintained around the facility in the vicinity of the project site and/or along the access road.”

Verizon Response:

At our meeting on August 27, 2013 it was discussed that the area's Serpentine Soil base and natural environment would preclude the requirement for additional trees or landscaping to be added.

Staff requests that Verizon submit supplemental information analyzing other potential facility configurations, including but not limited to a slim-line pole, water tank or other design to better meet County requirements, including any feasible methods to screen the facility. Also see item 2, below, about the possibility of reducing the height of the proposed tower.

Verizon Response:

To place a 120 faux tree or other structure rather than to match the existing PGE Lattice Towers would be more distracting to the “surrounding existing natural and man-made environment”.

- 2) The Code also requires that applicants submit technical information supporting the need for the proposed height of the facility. Please submit this information at your earliest convenience. If not supported by technical information, the height of the tower should be reduced.

Verizon Response:

Verizon Radio Frequency Engineer conducted an actual Drive Test by placing a 100 foot pole with antenna at the proposed site and tested for “actual” coverage. See Map Attached. Due to the topographic challenge in the area, at 100 feet the coverage still drops down and out along some portions of Highway 128, Sage Canyon Road and Lake Berryessa Knoxville Road. It was determined that adding an additional 20 feet will substantially provide more reliable coverage. See Coverage Maps with Existing Coverage, coverage without site, and coverage with both existing and proposed location. These propagation maps, together with the “actual” drive results support a minimum of 120 foot tower.

- 3) Note that the County ordinance requires structural setbacks equivalent or greater than 20% of the height of the facility. Please confirm that the facility meets this standard.

Verizon Response:

Distance from nearest property line is more than 20% of the height of the facility.

- 4) Please confirm that the access road to serve the proposed facility is all located on the parcel of land owned by the Bissetts.

Verizon Response:

Confirmed by a Title Report issued 9/19/1 by Fidelity National Title Company,
Survey dated 5/24/12 and County of Napa Land and Engineering Division.

Please let me know if I can provide any further information or clarification.

*Pamela Nobel
Independent Contractor
NSA Wireless, Inc.
Representing Verizon Wireless
2010 Crow Canyon Place - Suite 355
San Ramon, CA 94583
(707) 486-7252*

Project Description

Site Name: Capell Valley # 249853
Proposed Verizon Wireless facility located at
1998 Capell Valley Road
Napa, CA

Owner: Richard and Julie Bissett
APN: 025-330-019 – Zoned: AW

Introduction

Verizon Wireless is the largest wireless communications provider in the U.S. with more than 27 million wireless voice and data customers. The coast-to-coast wireless provider was formed by the combination of the U.S. wireless businesses of Bell Atlantic Corp. and GTE Corp - now Verizon Communications (NYSE:VZ) - and Vodafone (NYSE and LSE: VOD). The new company includes the assets of Bell Atlantic Mobile, AirTouch Cellular, GTE Wireless and PrimeCo Personal Communications.

Verizon and its affiliates have acquired licenses from the Federal Communication Commission ("FCC") and the CPUC. These licenses include Napa County, California. The regional system operates under the name GTE Mobilnet of California Limited Partnership, a California limited partnership, d/b/a Verizon Wireless, by Celco Partnership, its general partner.

Applicant's Request

GTE Mobilnet of California Limited Partnership, a California limited partnership, d/b/a Verizon Wireless formally requests pursuant to the Napa County Telecommunications Facility Code Section 18.119, approval of a Use Permit for the installation a new unmanned telecommunications facility located at 1998 Capell Valley Road in Napa, California. APN: 025-330-019, zoned AW.

Project Description

Pursuant to Napa County Telecommunication Facilities Code, Section 18.119, GTE Mobilnet of California Limited Partnership, a California limited partnership, dba Verizon Wireless proposes to install an unmanned telecommunication facility consisting of a new 120 foot high free standing Lattice Tower to hold 12 (six foot) antennas, 2 (six foot) micro dishes, 2 GPS, with a new 12' by 16' prefabricated equipment shelter and a stand by generator * within a 30' x 30' fenced in lease area. Access to the site is from a public right of way Hwy 128 on an existing paved road that will be extended with gravel approximately 90 feet +/-, to include a turnout per Napa County Fire department requirements.

*Verizon will include a new stand-by 30KW diesel generator with a 132-gallon diesel fuel tank. This generator will supply power in emergency situations only. This is part of Verizon's homeland security initiative. Verizon wants the entire network to be able to sustain itself in the event of blackout situations. The generator shall meet all noise standards of the County of Napa.

Maintenance

The facility will be unmanned and will be visited only monthly for routine maintenance. The facility will emit no glare, odor or noise above acceptable levels, and will not have any signage other than those required for identification as mandated by the FCC and FAA, which are designed to protect public safety. To ensure structural integrity of the facility, the facility will be constructed and maintained in compliance with all federal, state and local building codes and standards. In addition, each facility is monitored 24 hours a day, electronically for intrusion and environmental disruption. The facility will also contain a sign identifying a 1-800 number to call in case of an emergency (manned 24 hours a day by Verizon employees) and identifying it as a Verizon facility. Verizon will be in compliance with all FCC regulations regarding signage at the facility.

Need for Site and Location Justification

Wireless phone systems operate on a “grid” system, whereby overlapping “cells” mesh to form a seamless wireless network. The technical criteria for establishing cell sites are very exacting as to both the height and location of the telecommunication facility. Based on a computerized engineering study, which takes into account, among other things, local population density, traffic patterns, and topography, Verizon Wireless’s RF engineers have identified this location as being a necessary and appropriate location for a cell site in order to provide coverage along Highway 128 and Knoxville Road. Residents and tourists traveling between Lake Berryessa and City of Napa as well as to the surrounding Napa County community use these roads.

Types of Services provided by applicant will include wireless, voice, and data to its customers.

No Existing Telecommunications Towers within 1 mile of proposed location.

SEE COLOR CODED RF COMPUTER GENERATED MAP FOR EXISTING AND PROPOSED COVERAGE And RESULTS FROM AN ACTUAL DRIVE TEST.

Alternative Site Analysis

Verizon Wireless investigated existing structures, towers and buildings high enough to accommodate the coverage objectives. (No existing buildings, towers or structures were identified in the objective search area except the proposed location)

(1) Monticello PGE Station –1525 Berryessa Knoxville Road – Did not provide needed coverage due to topography

(2) 1965 Capell– RF rejected site as “too low” to provide coverage objective

(3) Top of Hill Napa County Regional park & Open Space District- APN: 019-220-018 Area owned by BLM and Napa County. Researched with Regional Parks Dept. John

Woodbury and confirmed that County owned land was land locked and not accessible other than boat- also no utilities available.

(4) PGE Towers along Sage Canyon Road – RF engineer rejected as “being shadowed” by terrain and not providing coverage to Highway 128 or Berryessa Knoxville Road.

(5) 50 Capell Valley Crest – Shadowed by hills and topography

Radio Frequency

The proposed facility will be designed and constructed to meet applicable governmental and industry safety standards. Verizon Wireless continues to comply with all FCC governing construction requirements, technical standards, interference protection, power limitations, and radio frequency standards. Any and all RF emissions are subject to the exclusive jurisdiction of the FCC. (See EMF Evaluation dated May 17, 2012)

Standby Generator for emergency back up power supply

In order for Verizon to maintain the site’s operational capability in the event of an emergency or extended power outage, a 30 kW diesel fired generator will be installed at time of construction. The generator itself is enclosed in a sound attenuated enclosure, utilizes a muffler with the exhaust pipe directed vertically approximately 8 feet above ground level. The generator would run for extended periods of time only in the event of a natural disaster, other emergency or prolonged power outage. Sound test results are available for the proposed generator and are attached for review.

Safety

The proposed site will be entirely self-monitored by sophisticated computers which connect directly to a central office and which alert personnel to equipment malfunction or breach of security. Moreover, no smoke, debris or other nuisance will be generated by the proposed facility.

The proposed facility will not be detrimental to nor will it endanger the public health, safety, morals, comfort, or general welfare of the community. The proposed facility will not pose a risk of explosion, fire or other danger to life or property due to proximity to other materials and the facility will be designed and a State of California qualified engineer will certify that the proposed facility will be structurally sound.

In Conclusion

Everyday, more than 296,000 “911” calls are made from wireless phones. According to the National Center for Health Statistics Interview Survey January – June 2010, 26.6% of U.S. Households are Wireless “Only” households. The proposed Verizon Wireless Telecommunications Facility enhances the general welfare of the community by

providing the infrastructure for these calls, as well as providing vital means of communication during times of emergency when traditional land lines are not available or in cases of power failure. The carefully selected and designed facility allows these calls to occur while remaining a site that meets the needs of the community now and in the future.

For the purpose and duration of this application, the project manager is **NSA Wireless, Inc. located at 2010 Crow Canyon Place #355 San Ramon CA 94583, contact Pamela Nobel direct at (707) 486-7252, email: pdnobel@earthlink.net** or NSA Wireless at (925) 244-1890, and Fax: (925) 355-0672.

Verizon Wireless long-term responsible party and agent for service of process is:

GTE Mobilnet of California Limited Partnership,
dba Verizon Wireless
180 Washington Valley Road
Bedminster, New Jersey 07921
Attention: Network Real Estate

Alternative Locations

Monticello PGE Station – 1525 Berryessa Knoxville Road

RF rejected as too far from intended coverage objective

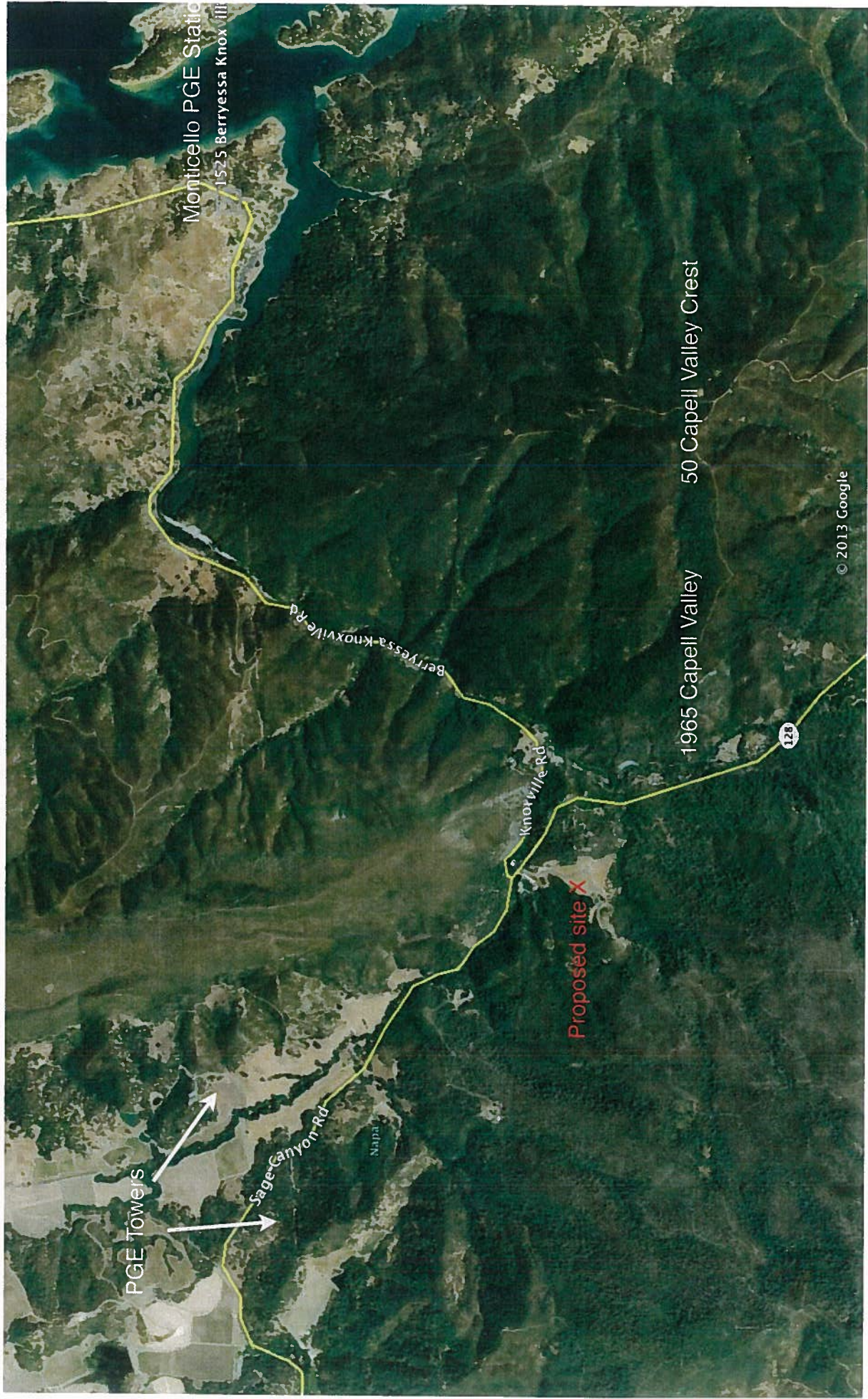
50 Capell Valley Crest – Shadowed by hills and topography

PGE Towers – Possible existing Lattice PGE towers were carefully evaluated by RF – Rejected as “shadowed by terrain” and did not achieve coverage objective

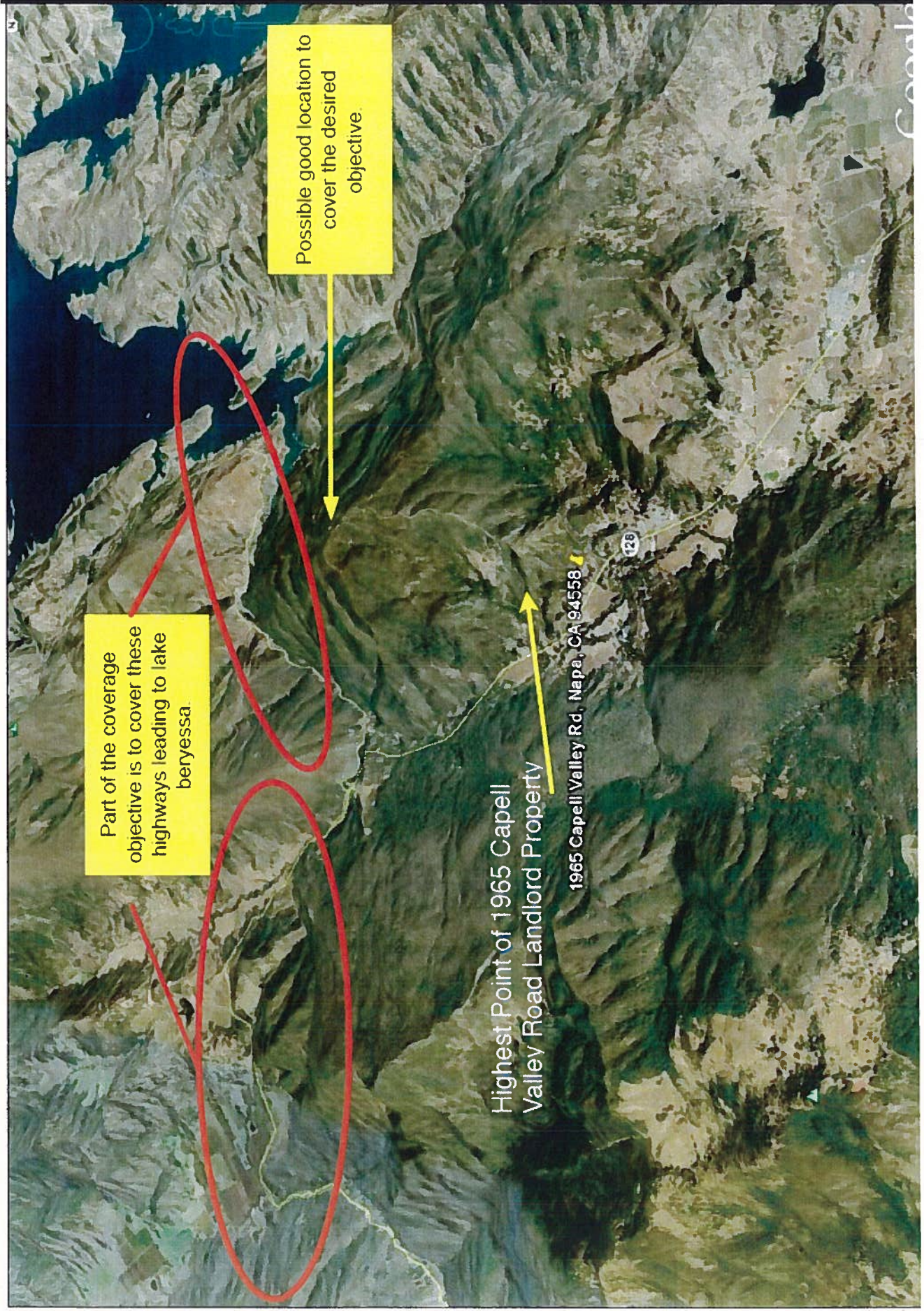
1965 Capell Valley Road – Too low to reach Sage Canyon Road and Berryessa Knoxville Road.

BLM and Napa County Regional Park and Open Space District – Land locked – accessible only by boat and no utilities available.

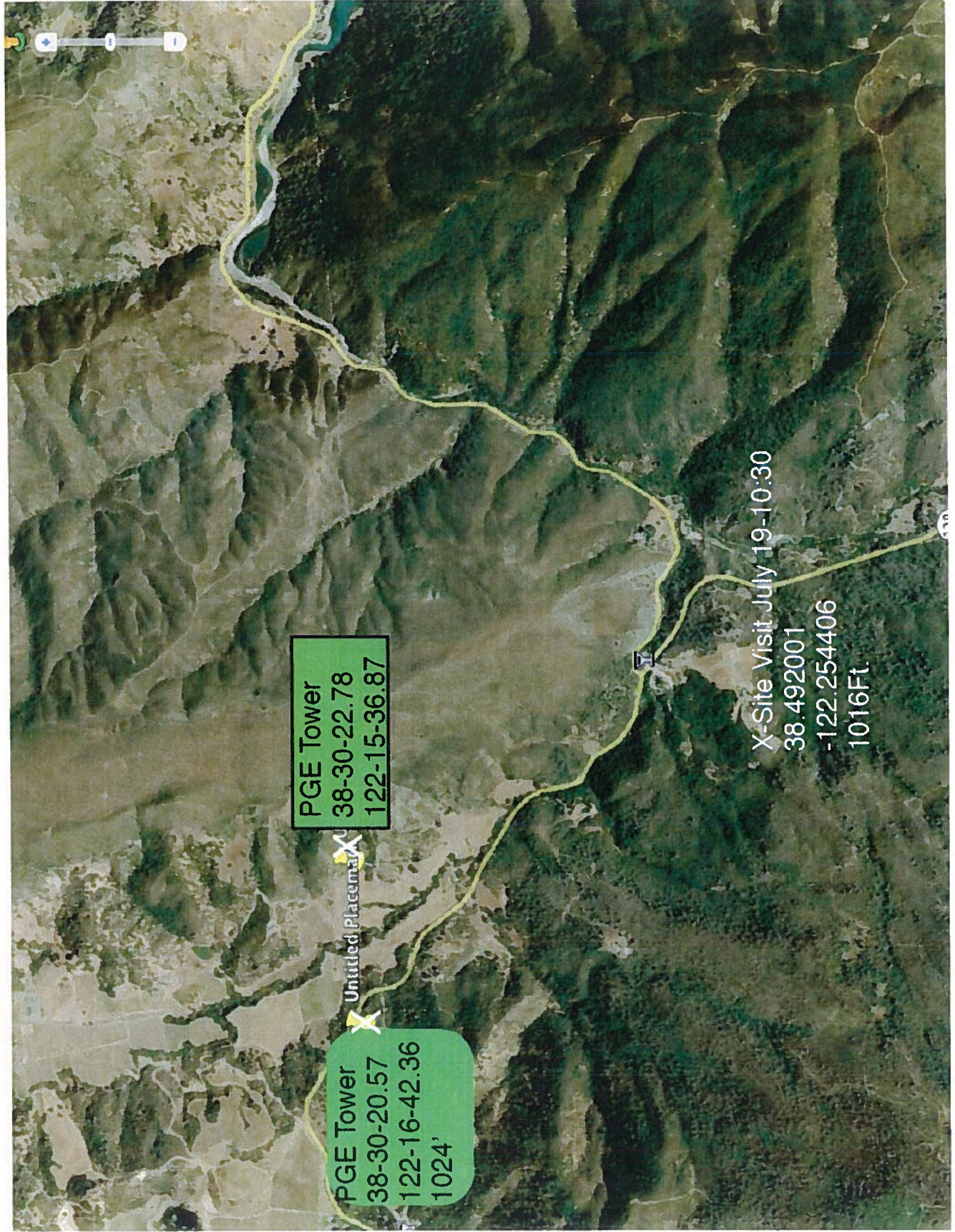
Monticello PGE Station - RF rejected as too far from intended coverage objective - 50 Capell Valley Crest - Shadowed by hills
PGE Towers - Shadowed by Terrain - 1965 Capell Valley Road - Too low to reach Sage Canyon and Berryessa Knoxville Rd.



1965 Capell Valley Road - Too low to reach Berryessa Knoxville and Sage Canyon Roads



PGE Towers - RF evaluated and rejected as "being shadowed" by terrain.



Propagation Maps with Drive Test Results

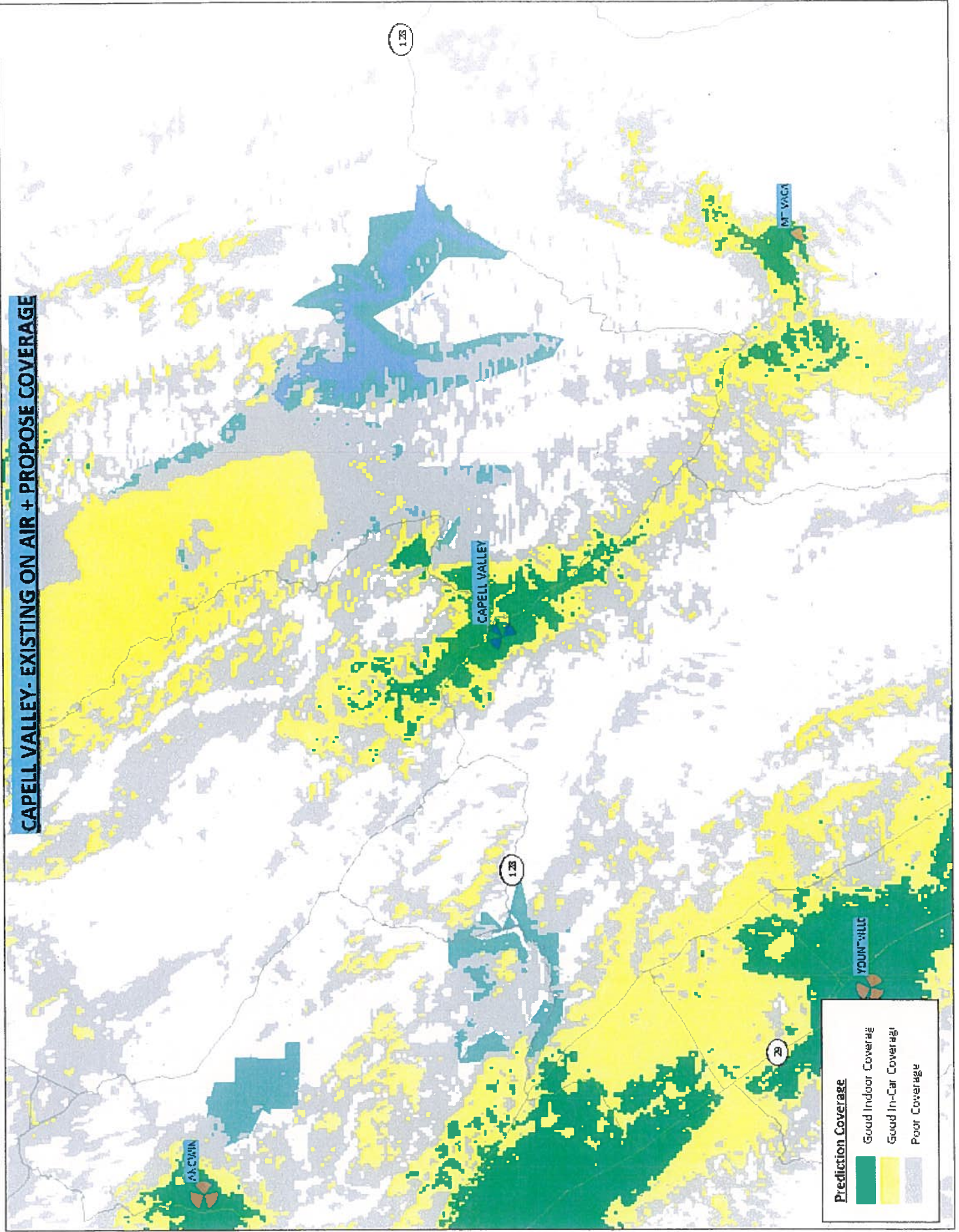
Propagation Mapping is a computer simulation of “projected” coverage. It is used roughly to predict projected coverage only. We have a baseline projection at 120’ with the tower, without the tower and with the tower and existing operating towers.

For a more accurate representation of proposed coverage, a Drive test was conducted by hoisting a 100’ pole with an antenna at the top and then recording “actual signal”. 100 feet represents an acceptable minimum height. However, adding 20 feet will greatly enhance the reliability and signal strength to provide better signal to the intended coverage objective and additionally will provide an opportunity for another carrier to collocate on this tower instead of having to place another cell. (Napa County Wireless Ordinance requires collocation when possible)

The attached Maps are included:

- Drive Test Actual Results at 100 feet
- Existing Coverage Signal @ 120 feet
- Computerized Anticipated Proposed Coverage with Site @ 120 feet
- Computerized Anticipated Proposed Coverage with Site & Existing Sites @120

CAPELL VALLEY- EXISTING ON AIR + PROPOSE COVERAGE



Prediction Coverage

Good Indoor Coverage
Good In-Car Coverage
Poor Coverage