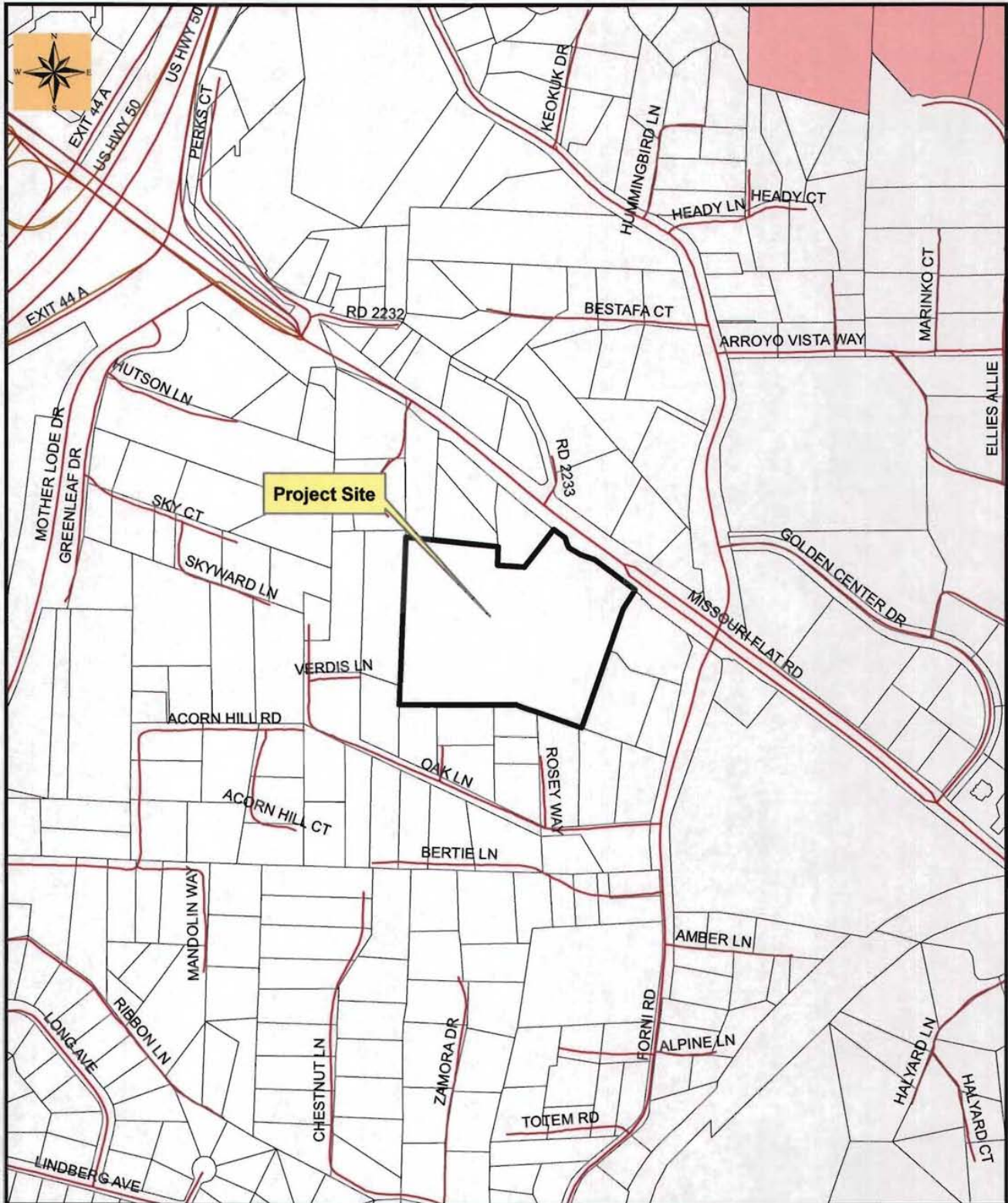


Verizon Wireless Facility Special Use Permit S14-0007



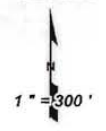
Map prepared by:
Mel Prober
El Dorado County
Development Services Planning

Exhibit A- Location Map

0 80 160 320 Feet

POR'S. SEC'S. 23 & 24, T.10N., R.10E., M.D.M.

327:21



- *Parcel Notes - Block 1**
- ① - 0.301 A
 - ③ - 0.279 A
 - ⑥ - AW, 0.128 A

- *Parcel Notes - Block 2**
- ⑥ - PPM 32/53/2, 0.64 A, NA
 - ⑧ - PPM 33/76/A
 - ⑨ - PPM 33/76/A, 0.12 A, NA
 - ⑪ - PPM 33/76/B, 0.14 A, NA
 - ⑬ - PPM 33/76/C, 0.12 A, NA
 - ⑭ - PPM 33/76/D, 0.13 A, NA

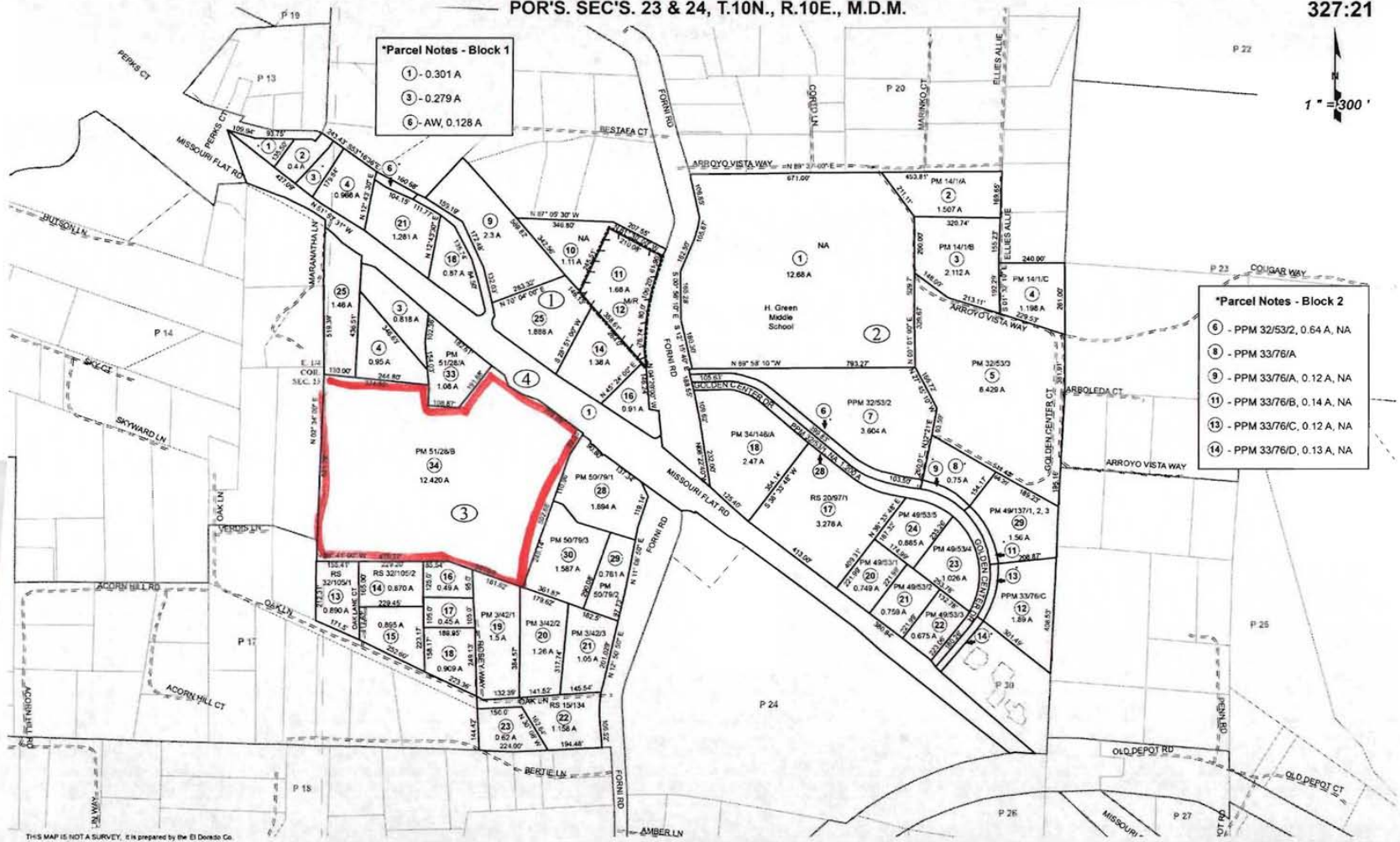


EXHIBIT B

THIS MAP IS NOT A SURVEY, it is prepared by the El Dorado Co. Assessor's office for assessment purposes only. Area calculations and characteristics are not guaranteed. Users should verify items such as dimensions and acreage.

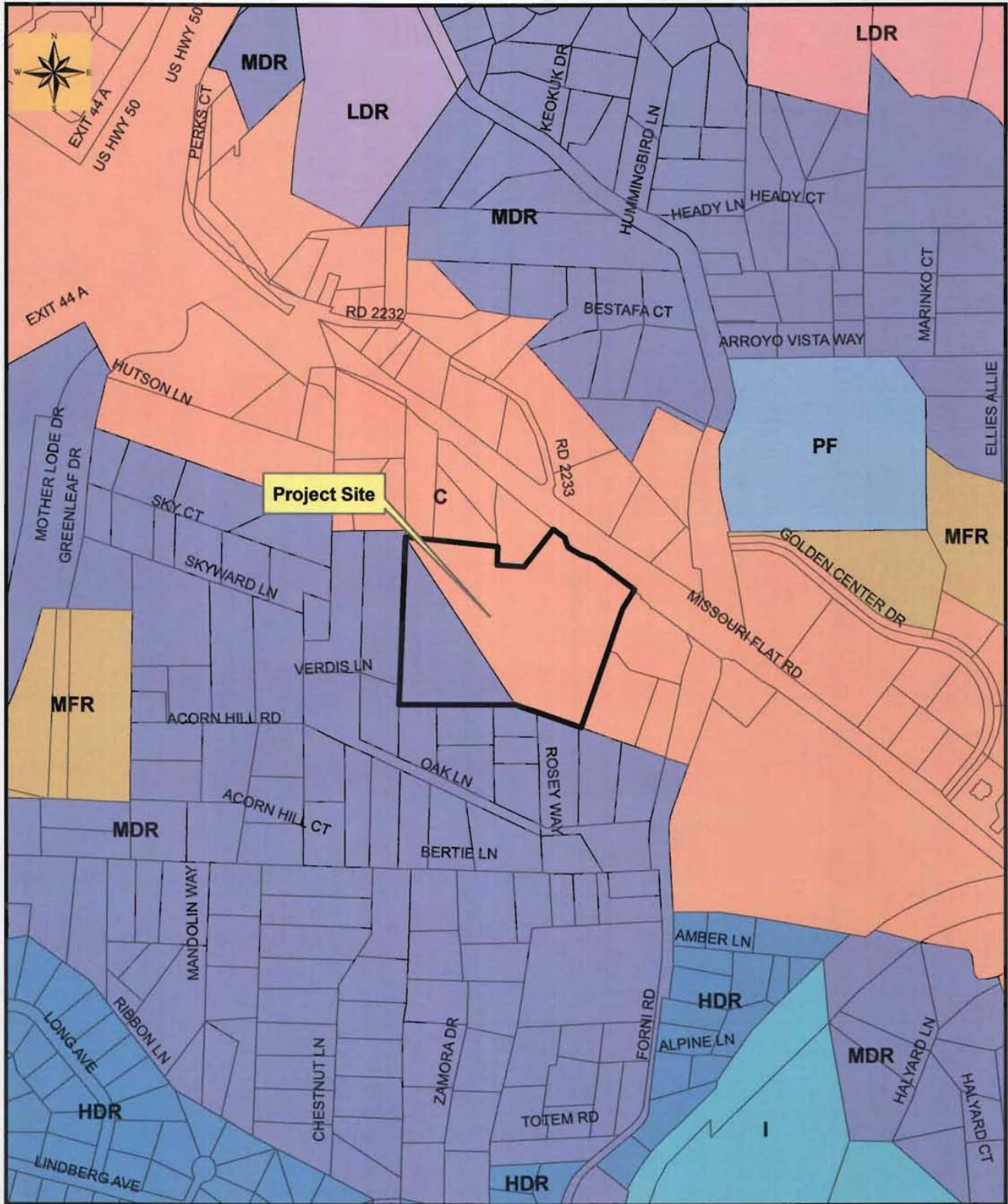
Acreages Are Estimates

Adjacent Map Pages Shown in Grey Text
Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles

Rev. Dec 16, 2013

Assessor's Map Bk. 327, Pg. 21
County of El Dorado, CA

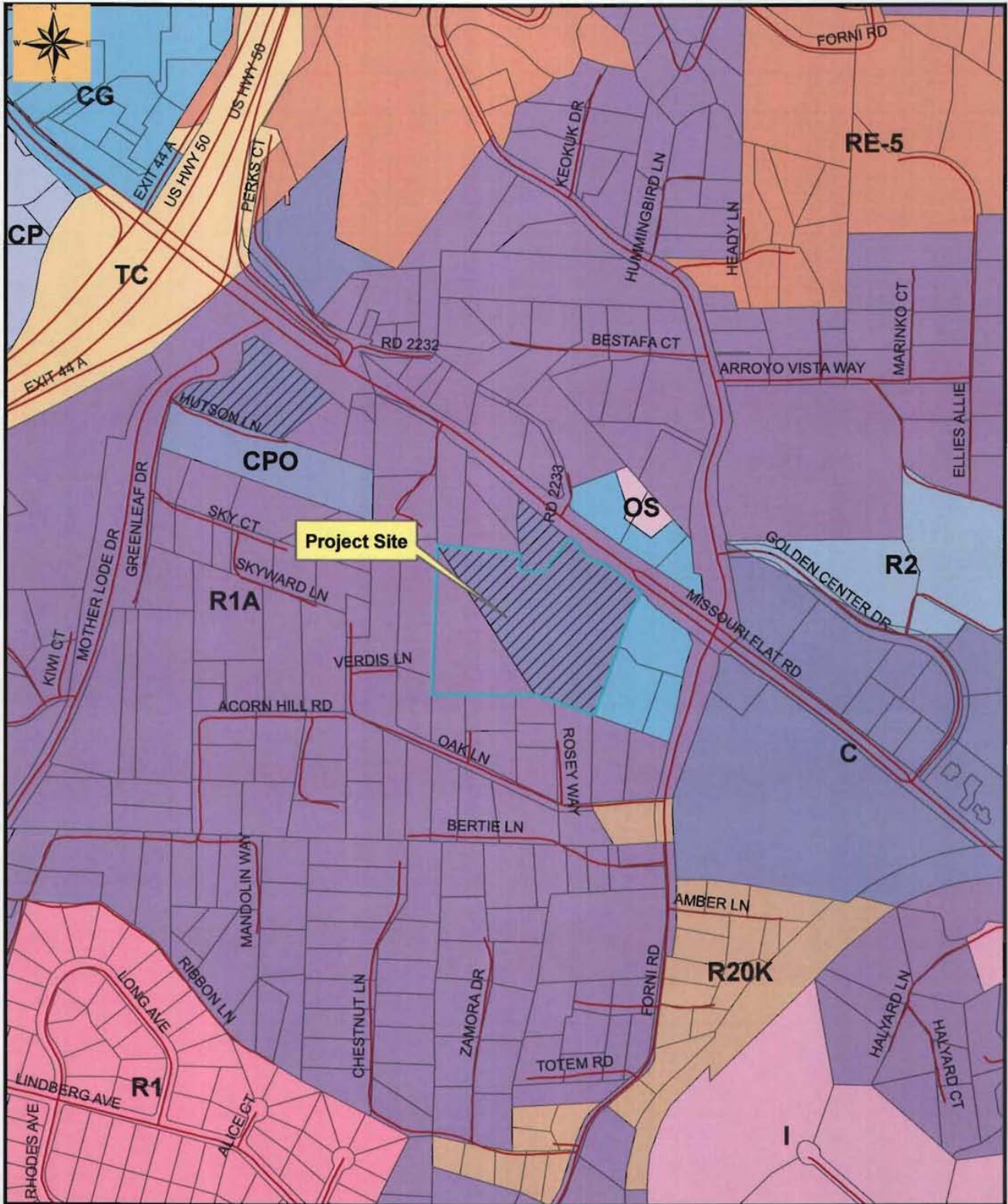
Verizon Wireless Facility Special Use Permit S14-0007



Map prepared by
Map Fabricators
© Orange County
Development Services Planning

Exhibit C- General Plan Land Use Map

Verizon Wireless Facility Special Use Permit S14-0007

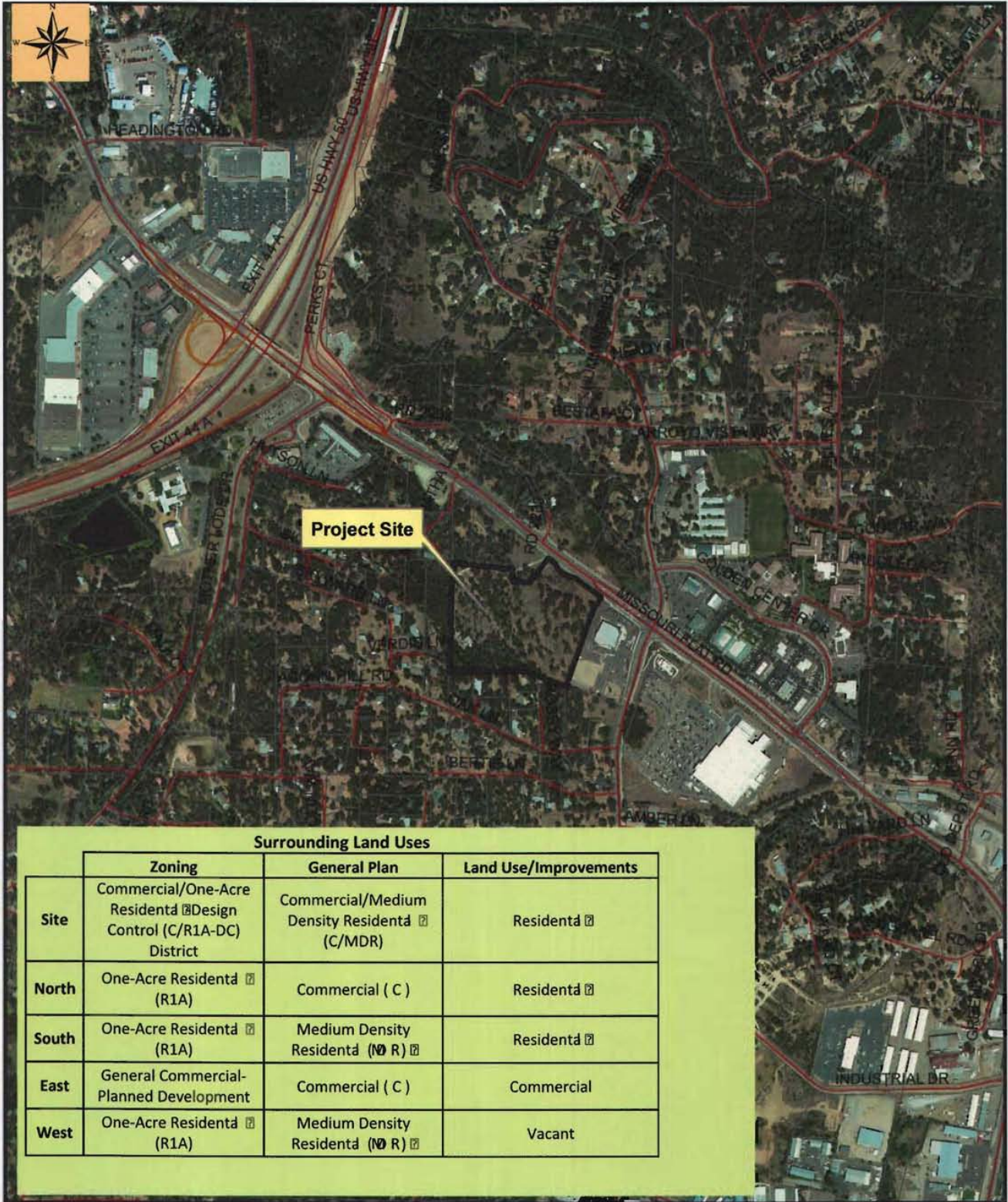


Map prepared by
MFL Planning
© Council County
Development Services Planning

0 105 210 420 Feet

Exhibit D- Zoning Map

Verizon Wireless Facility Special Use Permit S14-0007



Map prepared by:
Map Associates
© Orange County
Development Services Planning

0 145 290 580 Feet

Exhibit E- Aerial Map

November 5, 2014

Mark Lobaugh
 Leasing/Zoning Manager
 Epic Wireless Group, Inc.
 8700 Auburn Folsom Road, Suite 400
 Granite Bay, CA 95746

RE: Revised Tree Survey, Preservation, and Replacement Plan for the Missouri Flat Verizon Site, El Dorado County, California

Dear Mark:

The purpose of this letter is to document the existing trees and oak woodland canopy on the Missouri Flat Verizon Site, evaluate impacts to the oak woodland canopy, and provide recommendations for tree preservation and mitigation. This letter updates and replaces the previous letter reports dated May 9, 2014 and September 23, 2014. Changes in the project design and construction techniques have significantly reduced the impact to oak canopy as described further in this report.

The project site is located at 4212 Missouri Flat Road in Placerville, California. The Proposed Project will construct cellular facilities, including a monopine, equipment building, and generator, within a 30' x 40' lease area. An existing dirt and gravel road will be improved by the placement of aggregate base to serve as a 12-foot all-weather access road. No grading will be done on the access road. Utility lines to the lease area will be installed from existing utility poles to the south. The utility lines will be installed by boring beneath any existing oak trees.

El Dorado County regulates impacts to oak woodlands under Option A of General Plan Policy 7.4.4.4. This policy applies to all projects which would result in soil disturbance on parcels larger than 1 acre with at least 1 percent total canopy cover and on parcels less than 1 acre with at least 10 percent total canopy cover. Existing canopy must be retained as shown in **Table 1** below.

Table 1 — Allowable Oak Canopy Impacts

Percent Existing Canopy Cover	Canopy Cover to be Retained
80–100	60% of existing canopy
60–79	70% of existing canopy
40–59	80% of existing canopy
20–39	85% of existing canopy
10-19	90% of existing canopy
1-9 for parcels > 1 acre	90% of existing canopy

Source: Table from General Plan Policy 7.4.4.4 Option A

In addition to preservation of existing oak woodland canopy, mitigation for impacts to oak woodland canopy is required at a 1:1 ratio. Application of the policy is described in the *Interim Interpretive Guidelines for El Dorado County General Plan Policy 7.4.4.4 (Option A)*, which was last amended on October 12, 2007.

Methods

The site was surveyed on April 29, 2014 and October 24, 2014 by an ISA-Certified Arborist. Existing trees in the vicinity of the lease site were examined to determine species and general condition. The extent of the oak woodland canopy was mapped using the tree data, site observation, and interpretation of a 2012 aerial photograph with 1-meter resolution.

Results

The site is located in a mixed oak woodland dominated by blue oak (*Quercus douglasii*) with interior live oak (*Quercus wislizeni*). The understory is relatively open and includes poison oak (*Toxicodendron diversiloba*) and various grasses and forbs including miner's lettuce (*Claytonia* sp.), wild oat (*Avena* sp.), bedstraw (*Gallium* sp.), and bur chervil (*Anthriscus caucalis*). A total of 6.73 acres of oak woodland canopy were mapped on the 12.42 acre property, resulting in a total canopy cover of 54 percent (**Figure 1**).

Impacts from Proposed Project

The Proposed Project will improve an existing dirt roadway for the access road, thereby limiting the impacts to oak woodland canopy. Since the access road will be constructed with the placement of aggregate and no grading is required, canopy over the existing road is not expected to be impacted by the Proposed Project. The utility connections will be installed utilizing boring methods to avoid trenching within the root zone of existing trees. Oak woodland habitat will be impacted primarily for construction of the equipment enclosure. In the lease area, the Proposed Project will remove approximately 14 interior live oak and blue oak trees ranging from 2-10 inches in trunk diameter. A total of 0.02 acre (<1%) of oak woodland canopy is expected to be impacted from the Proposed Project. Since over 80 percent of the existing canopy will be preserved, the project complies with General Plan Policy 7.4.4.4. Removal of these trees will have no significant effect on the quality of oak woodland habitat in and around the project site.

Tree Preservation Recommendations

There are a number of existing trees in and around the project site that will be preserved. The following recommendations are based on standard local and industry practices. The following tree protection measures should be integrated into the project construction documents.

- Install Tree Protection Fencing around all trees to remain within 50 feet of the lease area, staging and storage areas, or any other areas of grading or ground disturbance;
- Tree Protection Fencing, consisting of a minimum 4-foot tall high-visibility fence (orange plastic snow fence or similar), shall be placed around the perimeter of the tree protection zone (TPZ) (dripline radius + 1 foot). The TPZ is the minimum distance for placing protective fencing, but tree protection fencing should be placed as far outside of the TPZ as possible. Signs shall be placed along the fence at approximately 50 foot intervals. Each sign shall be a minimum of 2 feet by 2 feet and shall include the following:

TREE PROTECTION ZONE
DO NOT MOVE OR RELOCATE FENCE
UNTIL PROJECT COMPLETION WITHOUT
PERMISSION OF PROJECT ARBORIST
OR COUNTY OF EL DORADO

- If permanent site improvements (e.g. paving, fencing) encroach into the TPZ, install fence at limit of work. If temporary impacts (e.g. grading, utility installation) require encroachment into the TPZ, move fence to limit of work during active construction of item and return to edge of TPZ once work is completed;
- Whenever possible, fence multiple trees together in a single TPZ;
- For trees located around the perimeter of the work site, tree protection fencing may be placed only on the side of the tree facing the project area;
- Tree protection fencing shall not be moved without prior authorization from the Project Arborist or County of El Dorado or as detailed on approved plans;
- No parking, portable toilets, dumping or storage of any construction materials, grading, excavation, trenching, or other infringement by workers or domesticated animals is allowed in the TPZ;
- No signs, ropes, cables, or any other item shall be attached to a protected tree, unless recommended by an ISA-Certified Arborist;
- Underground utilities should be avoided in the TPZ, but if necessary shall be bored or drilled. If boring is impossible, trench by hand under the supervision of an ISA-Certified Arborist, and avoid cutting roots over 2" in diameter to the greatest extent feasible;
- Cut or fill within the dripline of existing native oaks should be avoided to the greatest extent possible. Under no circumstances should fill soil be placed against the trunk of an existing tree;
- Pruning of living limbs or roots over one inch in diameter shall be done under the supervision of an ISA-Certified Arborist. All pruning should be done in accordance with ISA standards using tree maintenance best practices. Climbing spikes should not be used on living trees. Limbs should be removed with clean cuts just outside the crown collar;
- Minimize disturbance to the native ground surface (grass, leaf, litter, or mulch) under preserved trees to the greatest extent feasible; and
- Native woody plant material (trees and shrubs to be removed) may be chipped or mulched on site and placed in a 4 to 6 inch deep layer around existing trees to remain. Do not place mulch in contact with the trunk of preserved trees.

Mitigation and Maintenance Plan

A total of 0.02 acre of mitigation will be required. This may take the form of either on-site or off-site mitigation planting or protection of existing off-site oak woodlands through a conservation easement. The project is currently planning on implementing on-site mitigation planting of oak seedlings. If a conservation bank becomes available or new mitigation

guidelines are adopted before the project is constructed, then alternate mitigation measures may be implemented.

An area of 0.03 acre has been identified as the potential planting area (**Figure 1**). This is slightly larger than the required 0.02 acre of mitigation to allow for placement of mitigation trees in the most suitable locations. Additionally, mitigation trees may be planted in openings in the oak woodland surrounding the identified planting areas, based on site-specific conditions. The *Interim Guidelines* recommend mitigation planting at a density of 200 trees (~15' on center) per acre, which would result in 4 mitigation trees being required for the Proposed Project. Mitigation trees may be 1-gallon or D-pot sapling trees and should be planted in accordance with **Figure 2**. It is recommended that the planting consist of 3 blue oaks and 1 interior live oak to reflect the trees being removed.

Ten years of maintenance and monitoring are required by the *Interim Guidelines* for sapling planting. A minimum 90 percent survival rate, in this case 4 trees, is required at the end of the monitoring period for mitigation to be considered successful. Maintenance will be most intensive in the first three years to establish the trees, as shown in **Table 2** below. Supplemental water should be provided as noted below during the dry season, which is typically May through October, but may vary depending on the rainfall in any given year. After three years no supplemental water should be required and maintenance will be minimal.

Table 2 — Mitigation Maintenance Schedule for Saplings

Year	Maintenance Activities
Planting	Plant trees between October and December, after the first significant rain event, to allow initial establishment during the winter wet season. Water as needed to ensure survival if rain is inconsistent. Clear weeds around tree planting area and place 6"-deep layer of bark mulch/ wood chips in a 4-foot diameter circle surrounding tree.
One	Water trees weekly. Replenish bark mulch in spring. Remove weeds from planting area as needed.
Two	Remove support stakes in spring. Prune out sucker growth and as needed to develop strong structure. Do not cut leader or remove small feeder twigs along trunk. Water trees twice per month. Replenish bark mulch in spring. Remove weeds from planting area as needed.
Three	Water trees monthly. Replenish bark mulch in spring. Remove weeds from planting area as needed.
Four – Ten	Discontinue supplemental water. Replenish mulch and remove weeds from planting area annually as needed. Prune lightly to improve structure as needed in Year 6.

Mitigation planting shall be monitored annually in September to assess tree condition and overall mitigation success. The condition of each tree should be evaluated and given a rating according to **Table 3** below. Only trees ranked fair or higher will be considered successful.

Table 3 — Health Rating Scale

Rating	Tree Health
Excellent	Free of any signs of stress, disease, nutrient deficiency, or parasites. Size, color, and density of foliage are normal with above average growth rate.
Good	Minor evidence of stress, disease, nutrient deficiency, or parasites. Size, color, and density of foliage are normal with average growth rate.
Fair	Moderate evidence of stress, disease, nutrient deficiency, or parasites. Size, color, and density of foliage are less than normal with below average growth rate.
Poor	Widespread evidence of stress, disease, nutrient deficiency, or parasites. Size, color, and density of foliage are abnormal with very little growth. High potential for tree mortality.

The project will be considered successful if 4 trees survive at the end of the monitoring period. The annual monitoring report will evaluate the success of the mitigation efforts and provide recommendations for additional maintenance and replanting efforts needed in the following year to meet the success criteria. The annual report will be provided to the owner by November 15 of each year. At the completion of the final year of monitoring a summary report documenting completion of the mitigation requirements will be submitted to the County of El Dorado.

Please do not hesitate to call me at (916) 435-1202 or e-mail me at mbranstad@foothill.com if you have any questions about this report or the mitigation and maintenance plan.

Sincerely,

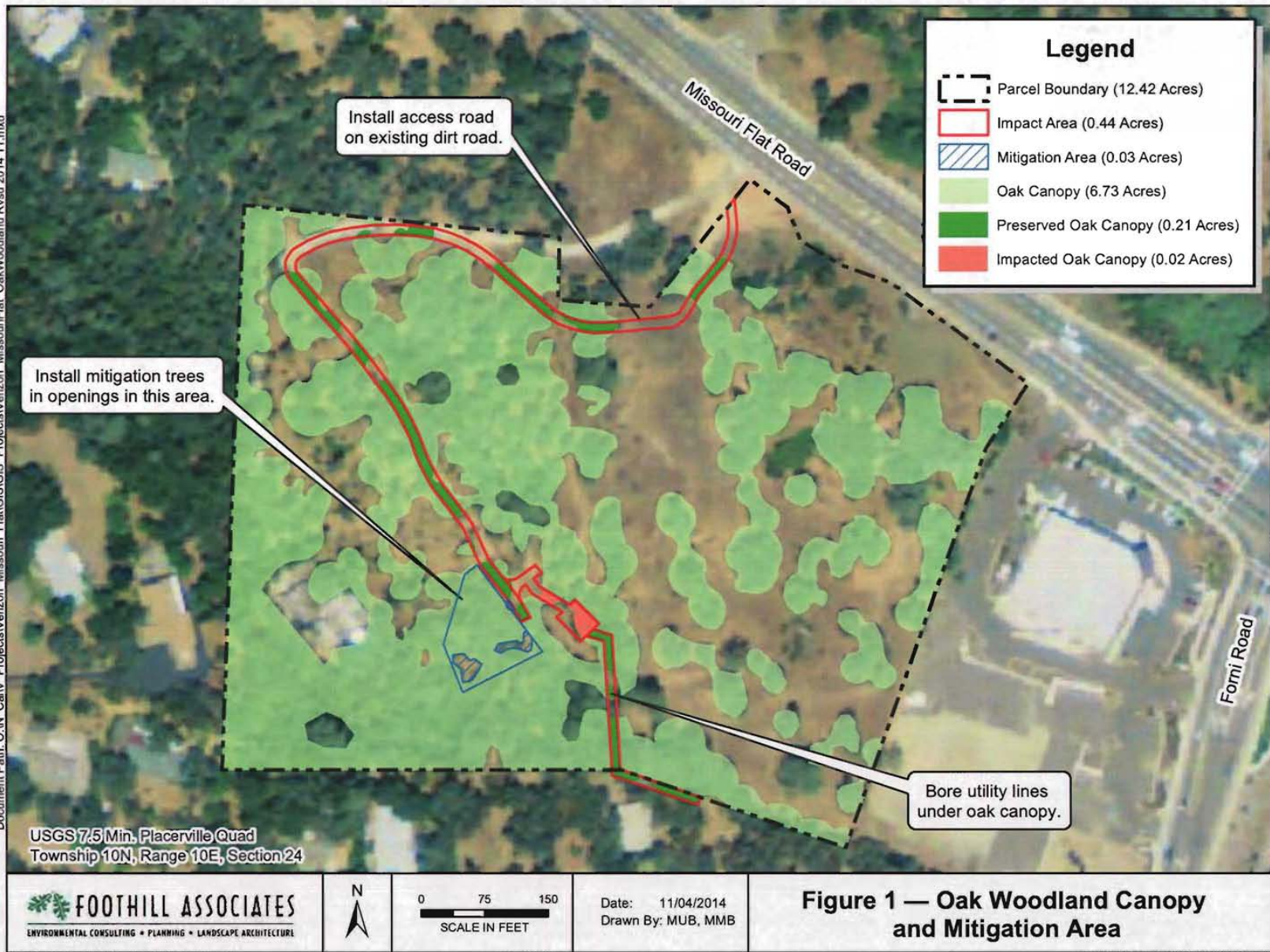


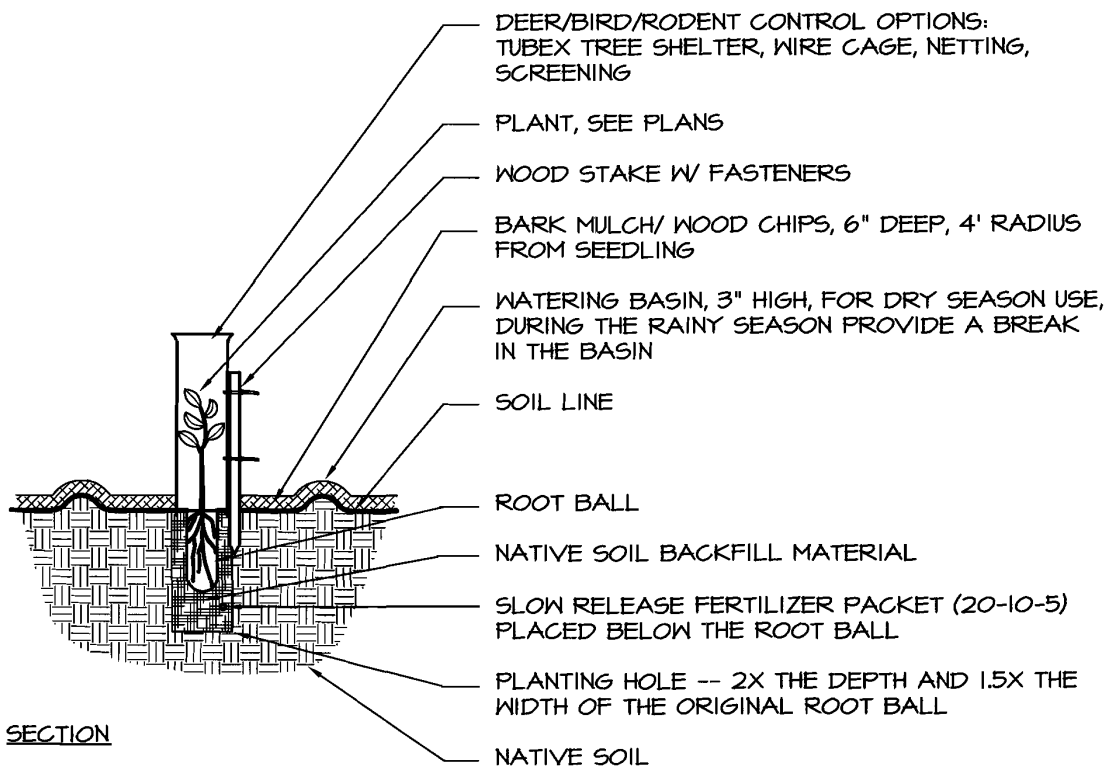
Meredith Branstad
ISA-Certified Arborist #WE-6727A

Enclosures:

- Figure 1 — Oak Woodland Canopy and Mitigation Area Map
- Figure 2 — Planting Details

Document Path: O:\N. CallV. Projects\Verizon. Missouri Flat\GIS\GIS. Projects\Verizon. Missouri Flat. OakWoodland Rvsd 2014 11.mxd





SECTION

OAK/CANOPY SITE ASSESSMENT FORM

El Dorado County

OAK/CANOPY SITE ASSESSMENT FORM

Qualified Professional & Contact Information: <i>(attach qualifications)</i>	Meredith Branstad, ISA-Certified Arborist #WE-6727A mbranstad@foothill.com, 916-435-1202	
Property Owner's Name/APN(s):	Campbell 20132 Family Living Trust/ 327-213-08-100	
Address:	4212 Missouri Flat Road Placerville, CA 95667	
General Plan Designation:	Commercial/ Medium Density Residential	
Zoning:	Commerical/ One-Acre Residential	
Project Description: <i>(attach site photos)</i>	Construction of cellular tower and associated structures. Installation of gravel on existing access road, boring of utility connections.	
Would the project, directly or indirectly, have the potential to cause any impact, conflict with, or disturbance to:	YES	NO
a) Individual landmark or heritage trees (of any species) subject to review under General Plan Policy 7.4.5.2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Oak woodland corridor continuity (General Plan Policy 7.4.4.5)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Sensitive or important oak woodland habitat as defined in the Guidelines?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Movement of Wildlife and/or Any Wildlife Migration Corridor?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Any Candidate, Listed or Special Status Plant or Animal Species observed or expected to occur on or adjacent to the project site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Is the affected area of oak canopy within or directly adjacent to an Important Biological Corridor or Ecological Preserve overlay?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Does the removal of oak canopy comply with the retention requirements of Policy 7.4.4.4?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Was project subject to prior County approval? (If yes, provide Tentative Map # and environmental documents if available)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) For Discretionary Projects, would the project have the potential to cause a significant environmental impact on biological resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>I affirm that all of the information contained in this document is true and correct to the best of my knowledge and I acknowledge and agree that any material misinformation in this document can result in the denial or revocation of any permits or County approvals for this project.</i>		
Qualified Professional: Meredith Branstad	<small>Digitally signed by Meredith Branstad DN: cn=Meredith Branstad, o=El Dorado County, ou=El Dorado County, email=mbranstad@foothill.com, c=US</small>	Date: 11/19/14
Applicant/Owner: mark lobaugh	<small>Digitally signed by mark lobaugh DN: cn=mark lobaugh, o=El Dorado County, ou=El Dorado County, email=mark.lobaugh@co.eldorado.ca.us, c=US</small>	Date: 11/19/14

Required Attachments: 1) Qualified Professional Qualifications; 2) Site Photos; 3) Required Tree Survey, Preservation, and Replacement Plan or Biological Resources Study and Important Habitat Mitigation Program (see Interim Interpretive Guidelines for El Dorado County Policy 7.4.4.4 Option A)

H:\D-drive\MyDocuments\Oak Woodlands\Oak Site Assessment Form.doc





Existing

Photosimulation of the view looking northwest from in front of MacDonald's on Missouri Flat Rd.

Missouri Flat
 4242 Missouri Flat Road
 Placerville, CA 95667



Proposed

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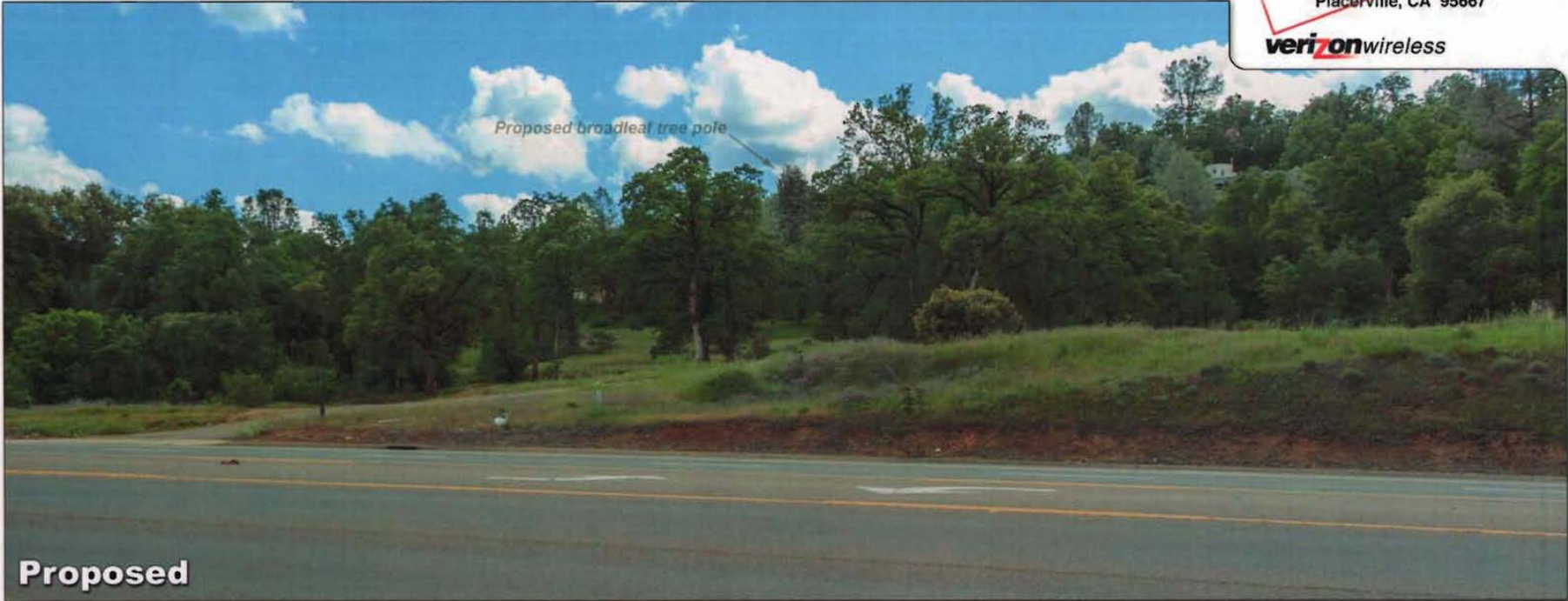
EXHIBIT K



Existing

Photosimulation of the view looking southwest from Missouri Flat Road, first potential view southbound.

Missouri Flat
 4242 Missouri Flat Road
 Placerville, CA 95667

Proposed broadleaf tree pole

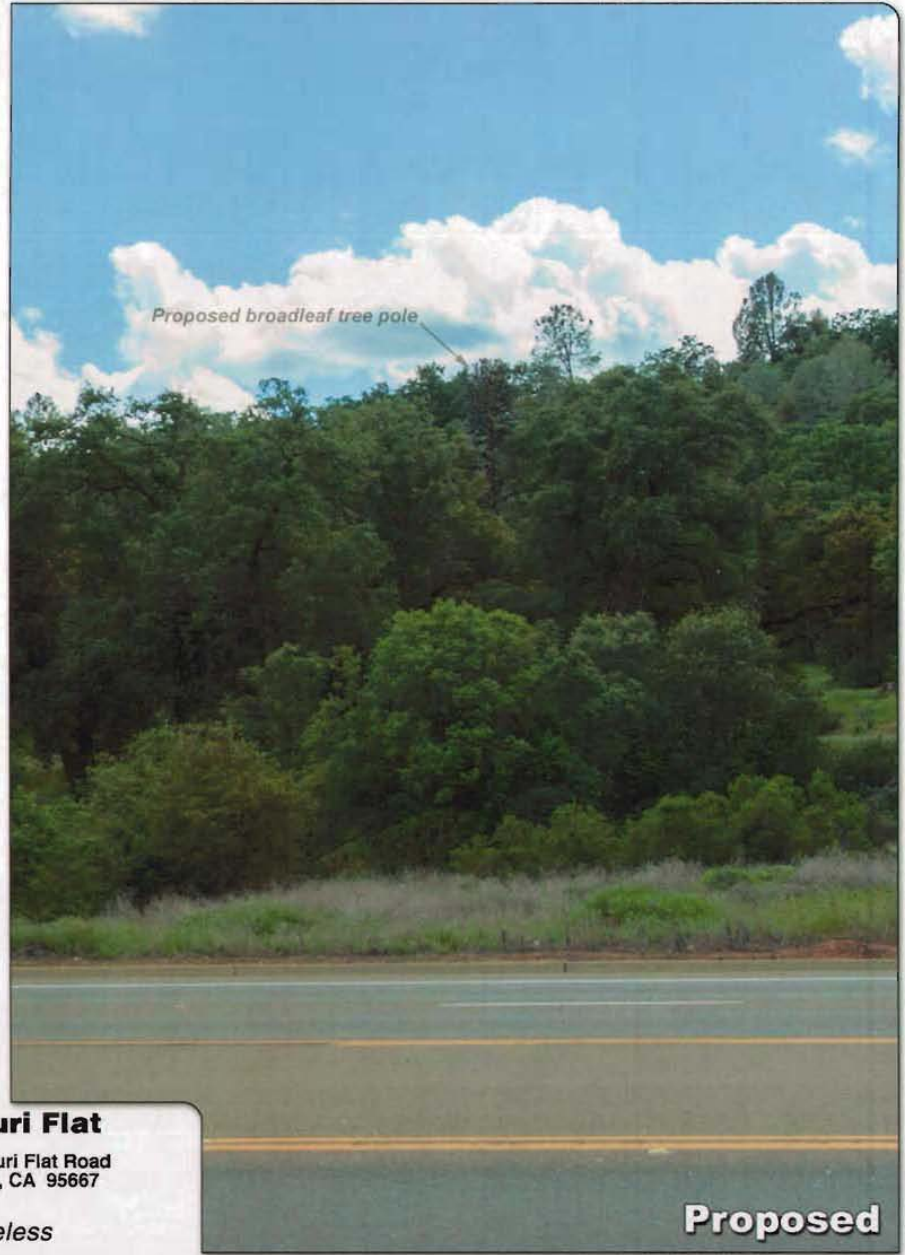
Proposed

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Photosimulation of the view looking southwest from the nearest point along Missouri Flat Road.



Existing



Proposed broadleaf tree pole

Proposed

Missouri Flat

4242 Missouri Flat Road
Placerville, CA 95667



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WATERFORD
COMPLIANCE...FROM START TO SIGNAL

RF EMISSIONS COMPLIANCE REPORT

Verizon Wireless

Site: Missouri Flat
4212 Missouri Flat Road
Placerville, CA 95667

Latitude/Longitude:
38.706178/-120.833789

June 30, 2014

Report Status:

Verizon Wireless Is under 5% Threshold

Prepared By:

Waterford Consultants, LLC

201 Loudoun Street SE, Suite 300
Leesburg, VA 20175

Voice (703) 596-1022
www.waterfordconsultants.com

EXHIBIT L

ENGINEERING STATEMENT CONFIRMING COMPLIANCE
With Radiofrequency Radiation Exposure Limits

Compliance Statement

Subject site COMPLIES with Radiofrequency Radiation Exposure Limits of 47 C.F.R. § 1.1307(b)(3) and 1.1310

Technical Framework: Basis for Compliance Statement

Criteria for evaluation are listed in Table 1 of 47 C.F.R. § 1.1310. Calculations using input data provided to Waterford by client or client's representative numerically confirm the subject site can operate at a 100% duty cycle without creating situations that exceed MPE limits in areas of uncontrolled access. Because the subject facility is commercial infrastructure, general public access to the immediate vicinity of the equipment is likely to diminish the quality of wireless service available to the community. For that reason, whether signage is, or is not required as a safety precaution, Waterford recommends placement of signage at the subject site for the purpose of improving network reliability by discouraging public access.

Power density decreases significantly over a short distance from any antenna. Specifically with respect to directional panel antennas, the design, oriented in azimuth and elevation as documented, reasonably precludes potential to exceed MPE limits at any location other than directly in front of the antenna. Areas in front of the antenna that are restricted by barriers, would require climbing or are otherwise beyond the reach of a standing individual of average height are not considered accessible. Analysis or measurement of instantaneous energy levels is performed for use as proof of compliance with FCC rules and regulations applicable to non-occupational persons, those individuals who are not authorized to access portions of the antenna support structure above ground level. To assess time-weighted exposure to occupational personal working within secured areas of the site, on the supporting structure, or in the immediate proximity of the antenna equipment is a separate study requiring detailed ergonomic information.

Regulatory Framework

The FCC requires licensees to assure that persons are not exposed to radiofrequency electromagnetic energy power densities in excess of the applicable MPE (Maximum Permissible Exposure) limit. These rules apply to both Occupational Personnel and the General Population. Applicable FCC rules are found at 47 C.F.R. §§ 1.1307(b)(3) and 1.1310. The FCC rules define two tiers of permissible exposure that are dependent on the situation in which the exposure takes place and/or the status of the individuals who are subject to exposure.

General Population / uncontrolled exposure limits apply to those situations in which persons may not be aware of the presence of electromagnetic energy, where exposure is not employment-related, or where persons cannot exercise control over their exposure.

Occupational / controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment, have been made fully aware of the potential for exposure, and can exercise control over their exposure.

Maximum Permissible Exposure ("MPE") is defined in OET 65 as being 100% of the exposure limit for the situation or tier of permissible exposure. The time averaged maximum permissible exposure to radiofrequency electromagnetic energy (RF), shown in Table 1 of Appendix A, expressed in milliwatt-minutes per square centimeter, is the same value for both tiers. FCC intention regarding time averaged exposure is expressed in this quote from page 10 of OET 65:

"Another feature of the exposure guidelines is that exposures, in terms of power density, E2 or H2, may be averaged over certain periods of time with the average not to exceed the limit for continuous exposure.¹¹ As shown in Table 1 of Appendix A, the averaging time for occupational/controlled exposures is 6 minutes, while the averaging time for general population/uncontrolled exposures is 30 minutes. It is important to note that for general population/uncontrolled exposures it is often not possible to control exposures to the extent that averaging times can be applied. In those situations, it is often necessary to assume continuous exposure.

As an illustration of the application of time-averaging to occupational/controlled exposure consider the following. The relevant interval for time-averaging for occupational/controlled exposures is six minutes. This means, for example, that during any given six-minute period a worker could be exposed to two times the applicable power density limit for three minutes as long as he or she were not exposed at all for the preceding or following three minutes. Similarly, a worker could be exposed at three times the limit for two minutes as long as no exposure occurs during the preceding or subsequent four minutes, and so forth.

¹¹ *Note that although the FCC did not explicitly adopt limits for peak power density, guidance on these types of exposures can be found in Section 4.4 of the ANSI/IEEE C95.1-1992 standard."*

At the entry to any area in excess of 100% General Population MPE, access controls must be put in place and maintained to restrict access, preventing occupancy by the general population. For persons who have been properly trained and meet the definition of being Occupational Personnel, access to areas at the Occupational MPE limit may be granted for six minutes, so long as the preceding six minute period and the following six minute period are free from exposure; the worker is not exposed to any RF energy. Subject to other site security requirements, Occupational Personnel trained in RF safety and equipped with personal protective equipment designed for safe work in the vicinity of RF may be granted access. Controls such as physical barriers to entry imposed by locked doors, locked passageways, or other access control mechanisms may be supplemented by alarms that notify site management of a breach in access control. Controls may include administrative policies and procedures requiring proof of personal protective equipment (e.g. RF attenuating eyewear, wearable RF shielding), RF training requirements to obtain site access cards, presentation of appropriate RF awareness training certifications to security personnel, requirement to wear a personal RF monitor, or other measures that control access.

FCC regulations regarding Radiofrequency radiation exposure, expressed in 47 CFR § 1.1310 are further clarified with respect to the value of 5% of exposure limits for the subject transmitters in the following section of 47 CFR § 1.1307 (b):

⁽³⁾ *In general, when the guidelines specified in § 1.1310 are exceeded in an accessible area due to the emissions from multiple fixed transmitters, actions necessary to bring the area into compliance are the shared responsibility of all licensees whose transmitters produce, at the area in question, power density levels that exceed 5% of the power density exposure limit applicable to their particular transmitter or field strength levels that, when squared, exceed 5% of the square of the electric or magnetic field strength limit applicable to their particular transmitter. Owners of transmitter sites are expected to allow applicants and licensees to take reasonable steps to comply with the requirements contained in §1.1307(b) and, where feasible, should encourage co-location of transmitters and common solutions for controlling access to areas where the RF exposure limits contained in § 1.1310 might be exceeded.*

Following these FCC requirements, predictive modeling was performed. That modeling indicates power density levels from client transmitters do not exceed 5% of the power density MPE limit applicable to their transmitters.

Qualifications of Waterford

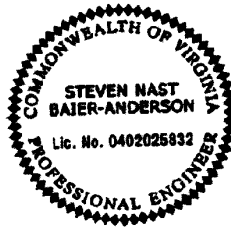
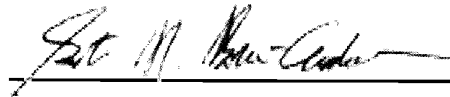
With more than 40 team-years of experience, Waterford Consultants, LLC [Waterford] provides technical consulting services to clients in the Radio Communications and antenna siting industry. Waterford retains professional engineers who are placed in responsible charge of the processes for analysis.

Waterford is familiar with 47 C.F.R. § § 1.1307(b)(3) and 1.1310 along with the general Rules, Regulations and policies of the FCC. Waterford processes incorporate all specifications of FCC Office of Engineering and Technology, Bulletin 65 ("OET65"), from the website: [Uwww.fcc.gov/oet/rfsafety,U](http://www.fcc.gov/oet/rfsafety) and follow criteria detailed in 47 CFR § 1.1310 "Radiofrequency radiation exposure Limits".

Within the technical and regulatory framework detailed above, Waterford created sophisticated computer modeling tools that operate on data provided by Waterford clients through the Waterford web portal. In developing these tools, Waterford chose each program step encoded into computer modeling tools according to recognized and generally accepted good engineering practices. Permissible exposure limits are band specific, and the Waterford computerized modeling tools correctly calculate permissible exposure based on the band(s) specified in the input data. Only clients and client representatives are authorized to provide input data through the Waterford web portal. In securing that authorization, clients and client representatives warrant the accuracy of all input data. Waterford Consultants, LLC attests to the accuracy of the engineering calculations. Waterford also attests that the results of those engineering calculations are correctly summarized in this report.

Certification

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the law.



Steven Nast Baier-Anderson
Registered Professional Engineer
Commonwealth of Virginia Reg. No. 0402-025832
July 2, 2014

2014.07.02 10:34:57 -04'00'



WATERFORD
COMPLIANCE FROM START TO SIGNAL

6/30/2014 9:28:29 AM

**Verizon Wireless
Missouri Flat
Site Summary**

Source	Predicted Power Density, % of MPE
Verizon Wireless	< 1 %
Verizon Wireless	< 1 %
Verizon Wireless	< 1 %
Verizon Wireless	< 1 %
Sum of Listed Sources	1%

**Verizon Wireless
Missouri Flat
Summary**

Frequency: 850 (MHz)
MPE 566 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.2 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0 %

Make / Model	Height(ft)	Orient°	DT°	ERP(W)	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ANDREW SBNHH-1D65B_Port 1 - +45_04DT_0850	67	40	0	288	0.2	0
ANDREW SBNHH-1D65B_Port 1 - +45_04DT_0850	67	120	0	288	0.2	0
ANDREW SBNHH-1D65B_Port 1 - +45_04DT_0850	67	320	0	288	0.2	0

**Verizon Wireless
Missouri Flat
Summary**

Frequency: 1900 (MHz)
MPE 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 3 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.3 %

Make / Model	Height(ft)	Orient°	DT°	EiRP(W)	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ANDREW SBNHH-1D65B_Port 3 - +45_04DT_1920	67	40	0	6906	3	0.3
ANDREW SBNHH-1D65B_Port 3 - +45_04DT_1920	67	120	0	6906	3	0.3
ANDREW SBNHH-1D65B_Port 3 - +45_04DT_1920	67	320	0	6906	3	0.3

**Verizon Wireless
Missouri Flat
Summary**

Frequency: 700 (MHz)
MPE 466 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.6 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.3 %

Make / Model	Height(ft)	Orient^o	DT^o	ERP(W)	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ANDREW SBNHH-1D65B_Port 1 - +45_04DT_0728	67	40	0	1378	1.6	0.3
ANDREW SBNHH-1D65B_Port 1 - +45_04DT_0728	67	120	0	1378	1.6	0.3
ANDREW SBNHH-1D65B_Port 1 - +45_04DT_0728	67	320	0	1378	1.6	0.3

**Verizon Wireless
Missouri Flat
Summary**

Frequency: 2100 (MHz)
MPE 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 3 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.3 %

Make / Model	Height(ft)	Orient°	DT°	EIRP(W)	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ANDREW SBNHH-1D65B_Port 3 - +45_04DT_2110	67	40	0	7400	3	0.3
ANDREW SBNHH-1D65B_Port 3 - +45_04DT_2110	67	120	0	7400	3	0.3
ANDREW SBNHH-1D65B_Port 3 - +45_04DT_2110	67	320	0	7400	3	0.3

Verizon Wireless
Missouri Flat
ANDREW - SBNHH-1D65B_Port 1 - +45_04DT_0850 40° Sector

Maximum Permissible Exposure
(MPE): 566 $\mu\text{W}/\text{cm}^2$

ERP (Watts)		Height (feet)		Downtilt (Degrees)			
		288		67			0
Depression Angle	Relative dB	Relative Gain	ERP (Watts) in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
1	1.02	0.791	227.72	1168.8	1169.0	0.006	0.001
5	0.13	0.971	279.51	233.2	234.1	0.17	0.03
10	4.65	0.343	98.72	115.7	117.5	0.24	0.04
20	12.09	0.062	17.80	56.0	59.6	0.17	0.03
30	20.86	0.008	2.36	35.3	40.8	0.05	0.008
35	15.41	0.029	8.29	29.1	35.6	0.22	0.04
40	17.88	0.016	4.69	24.3	31.7	0.16	0.03
45	20.64	0.009	2.49	20.4	28.8	0.1	0.02
50	26.37	0.002	0.66	17.1	26.6	0.03	0.006
55	25.52	0.003	0.81	14.3	24.9	0.04	0.008
60	24.07	0.004	1.13	11.8	23.6	0.07	0.01
65	26.71	0.002	0.61	9.5	22.5	0.04	0.007
70	29.40	0.001	0.33	7.4	21.7	0.02	0.004
71	29.35	0.001	0.33	7.0	21.6	0.02	0.004
72	29.02	0.001	0.36	6.6	21.4	0.03	0.005
73	28.45	0.001	0.41	6.2	21.3	0.03	0.005
74	27.75	0.002	0.48	5.8	21.2	0.04	0.006
75	27.01	0.002	0.57	5.5	21.1	0.04	0.008
76	26.33	0.002	0.67	5.1	21.0	0.05	0.009
77	25.78	0.003	0.76	4.7	20.9	0.06	0.01
78	25.37	0.003	0.84	4.3	20.9	0.06	0.01
79	25.08	0.003	0.89	4.0	20.8	0.07	0.01
80	24.87	0.003	0.94	3.6	20.7	0.07	0.01
81	24.66	0.003	0.98	3.2	20.7	0.08	0.01
82	24.41	0.004	1.04	2.9	20.6	0.08	0.01
83	24.11	0.004	1.12	2.5	20.6	0.09	0.02
84	23.77	0.004	1.21	2.1	20.5	0.1	0.02
85	23.46	0.005	1.30	1.8	20.5	0.1	0.02
86	23.21	0.005	1.38	1.4	20.4	0.11	0.02
87	23.04	0.005	1.43	1.1	20.4	0.11	0.02
88	22.95	0.005	1.46	0.7	20.4	0.12	0.02
89	22.92	0.005	1.47	0.4	20.4	0.12	0.02
90	22.91	0.005	1.47	0.0	20.4	0.12	0.02

**Verizon Wireless
Missouri Flat
ANDREW - SBNHH-1D65B_Port 1 - +45_04DT_0850 120° Sector**

**Maximum Permissible Exposure
(MPE): 566 $\mu\text{W}/\text{cm}^2$**

ERP (Watts)	288		Height (feet)	67		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP (Watts) in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
1	1.02	0.791	227.72	1168.8	1169.0	0.006	0.001
5	0.13	0.971	279.51	233.2	234.1	0.17	0.03
10	4.65	0.343	98.72	115.7	117.5	0.24	0.04
20	12.09	0.062	17.80	56.0	59.6	0.17	0.03
30	20.86	0.008	2.36	35.3	40.8	0.05	0.008
35	15.41	0.029	8.29	29.1	35.6	0.22	0.04
40	17.88	0.016	4.69	24.3	31.7	0.16	0.03
45	20.64	0.009	2.49	20.4	28.8	0.1	0.02
50	26.37	0.002	0.66	17.1	26.6	0.03	0.006
55	25.52	0.003	0.81	14.3	24.9	0.04	0.008
60	24.07	0.004	1.13	11.8	23.6	0.07	0.01
65	26.71	0.002	0.61	9.5	22.5	0.04	0.007
70	29.40	0.001	0.33	7.4	21.7	0.02	0.004
71	29.35	0.001	0.33	7.0	21.6	0.02	0.004
72	29.02	0.001	0.36	6.6	21.4	0.03	0.005
73	28.45	0.001	0.41	6.2	21.3	0.03	0.005
74	27.75	0.002	0.48	5.8	21.2	0.04	0.006
75	27.01	0.002	0.57	5.5	21.1	0.04	0.008
76	26.33	0.002	0.67	5.1	21.0	0.05	0.009
77	25.78	0.003	0.76	4.7	20.9	0.06	0.01
78	25.37	0.003	0.84	4.3	20.9	0.06	0.01
79	25.08	0.003	0.89	4.0	20.8	0.07	0.01
80	24.87	0.003	0.94	3.6	20.7	0.07	0.01
81	24.66	0.003	0.98	3.2	20.7	0.08	0.01
82	24.41	0.004	1.04	2.9	20.6	0.08	0.01
83	24.11	0.004	1.12	2.5	20.6	0.09	0.02
84	23.77	0.004	1.21	2.1	20.5	0.1	0.02
85	23.46	0.005	1.30	1.8	20.5	0.1	0.02
86	23.21	0.005	1.38	1.4	20.4	0.11	0.02
87	23.04	0.005	1.43	1.1	20.4	0.11	0.02
88	22.95	0.005	1.46	0.7	20.4	0.12	0.02
89	22.92	0.005	1.47	0.4	20.4	0.12	0.02
90	22.91	0.005	1.47	0.0	20.4	0.12	0.02

**Verizon Wireless
Missouri Flat
ANDREW - SBNHH-1D65B_Port 1 - +45_04DT_0850 320° Sector**

**Maximum Permissible Exposure
(MPE): 566 $\mu\text{W}/\text{cm}^2$**

ERP (Watts)		288	Height (feet)		67	Downtilt (Degrees)		0
Depression Angle	Relative dB	Relative Gain	ERP (Watts) in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	
1	1.02	0.791	227.72	1168.8	1169.0	0.006	0.001	
5	0.13	0.971	279.51	233.2	234.1	0.17	0.03	
10	4.65	0.343	98.72	115.7	117.5	0.24	0.04	
20	12.09	0.062	17.80	56.0	59.6	0.17	0.03	
30	20.86	0.008	2.36	35.3	40.8	0.05	0.008	
35	15.41	0.029	8.29	29.1	35.6	0.22	0.04	
40	17.88	0.016	4.69	24.3	31.7	0.16	0.03	
45	20.64	0.009	2.49	20.4	28.8	0.1	0.02	
50	26.37	0.002	0.66	17.1	26.6	0.03	0.006	
55	25.52	0.003	0.81	14.3	24.9	0.04	0.008	
60	24.07	0.004	1.13	11.8	23.6	0.07	0.01	
65	26.71	0.002	0.61	9.5	22.5	0.04	0.007	
70	29.40	0.001	0.33	7.4	21.7	0.02	0.004	
71	29.35	0.001	0.33	7.0	21.6	0.02	0.004	
72	29.02	0.001	0.36	6.6	21.4	0.03	0.005	
73	28.45	0.001	0.41	6.2	21.3	0.03	0.005	
74	27.75	0.002	0.48	5.8	21.2	0.04	0.006	
75	27.01	0.002	0.57	5.5	21.1	0.04	0.008	
76	26.33	0.002	0.67	5.1	21.0	0.05	0.009	
77	25.78	0.003	0.76	4.7	20.9	0.06	0.01	
78	25.37	0.003	0.84	4.3	20.9	0.06	0.01	
79	25.08	0.003	0.89	4.0	20.8	0.07	0.01	
80	24.87	0.003	0.94	3.6	20.7	0.07	0.01	
81	24.66	0.003	0.98	3.2	20.7	0.08	0.01	
82	24.41	0.004	1.04	2.9	20.6	0.08	0.01	
83	24.11	0.004	1.12	2.5	20.6	0.09	0.02	
84	23.77	0.004	1.21	2.1	20.5	0.1	0.02	
85	23.46	0.005	1.30	1.8	20.5	0.1	0.02	
86	23.21	0.005	1.38	1.4	20.4	0.11	0.02	
87	23.04	0.005	1.43	1.1	20.4	0.11	0.02	
88	22.95	0.005	1.46	0.7	20.4	0.12	0.02	
89	22.92	0.005	1.47	0.4	20.4	0.12	0.02	
90	22.91	0.005	1.47	0.0	20.4	0.12	0.02	

**Verizon Wireless
Missouri Flat
ANDREW - SBNHH-1D65B_Port 3 - +45_04DT_1920 40° Sector**

**Maximum Permissible Exposure
(MPE): 1000 μW/cm²**

ERP (Watts)		6906		Height (feet)		67		Downtilt (Degrees)		0	
Depression Angle	Relative dB	Relative Gain	ERP (Watts) in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density (μW/cm²)	Percent of MPE				
1	3.13	0.486	2052.23	1168.8	1169.0	0.05	0.005				
5	0.64	0.863	3641.05	233.2	234.1	2.22	0.22				
10	25.26	0.003	12.57	115.7	117.5	0.03	0.003				
20	21.14	0.008	32.45	56.0	59.6	0.3	0.03				
30	21.46	0.007	30.15	35.3	40.8	0.6	0.06				
35	29.76	0.001	4.46	29.1	35.6	0.12	0.01				
40	31.95	0.001	2.69	24.3	31.7	0.09	0.009				
45	17.49	0.018	75.20	20.4	28.8	3.02	0.3				
50	21.18	0.008	32.15	17.1	26.6	1.51	0.15				
55	40.53	0.000	0.38	14.3	24.9	0.02	0.002				
60	35.10	0.000	1.30	11.8	23.6	0.08	0.008				
65	34.42	0.000	1.52	9.5	22.5	0.1	0.01				
70	33.86	0.000	1.73	7.4	21.7	0.12	0.01				
71	33.89	0.000	1.72	7.0	21.6	0.12	0.01				
72	34.19	0.000	1.61	6.6	21.4	0.12	0.01				
73	34.87	0.000	1.38	6.2	21.3	0.1	0.01				
74	36.01	0.000	1.06	5.8	21.2	0.08	0.008				
75	37.62	0.000	0.73	5.5	21.1	0.05	0.005				
76	39.61	0.000	0.46	5.1	21.0	0.03	0.003				
77	41.66	0.000	0.29	4.7	20.9	0.02	0.002				
78	43.25	0.000	0.20	4.3	20.9	0.02	0.002				
79	43.86	0.000	0.17	4.0	20.8	0.01	0.001				
80	43.49	0.000	0.19	3.6	20.7	0.01	0.001				
81	42.65	0.000	0.23	3.2	20.7	0.02	0.002				
82	41.93	0.000	0.27	2.9	20.6	0.02	0.002				
83	41.66	0.000	0.29	2.5	20.6	0.02	0.002				
84	41.77	0.000	0.28	2.1	20.5	0.02	0.002				
85	41.78	0.000	0.28	1.8	20.5	0.02	0.002				
86	41.04	0.000	0.33	1.4	20.4	0.03	0.003				
87	39.69	0.000	0.45	1.1	20.4	0.04	0.004				
88	38.37	0.000	0.62	0.7	20.4	0.05	0.005				
89	37.48	0.000	0.76	0.4	20.4	0.06	0.006				
90	37.12	0.000	0.82	0.0	20.4	0.07	0.007				

**Verizon Wireless
Missouri Flat
ANDREW - SBNHH-1D65B_Port 3 - +45_04DT_1920 120° Sector**

**Maximum Permissible Exposure
(MPE): 1000 $\mu\text{W}/\text{cm}^2$**

ERP (Watts)		6906		Height (feet)		67		Downtilt (Degrees)		0	
Depression Angle	Relative dB	Relative Gain	ERP (Watts) in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE				
1	3.13	0.486	2052.23	1168.8	1169.0	0.05	0.005				
5	0.64	0.863	3641.05	233.2	234.1	2.22	0.22				
10	25.26	0.003	12.57	115.7	117.5	0.03	0.003				
20	21.14	0.008	32.45	56.0	59.6	0.3	0.03				
30	21.46	0.007	30.15	35.3	40.8	0.6	0.06				
35	29.76	0.001	4.46	29.1	35.6	0.12	0.01				
40	31.95	0.001	2.69	24.3	31.7	0.09	0.009				
45	17.49	0.018	75.20	20.4	28.8	3.02	0.3				
50	21.18	0.008	32.15	17.1	26.6	1.51	0.15				
55	40.53	0.000	0.38	14.3	24.9	0.02	0.002				
60	35.10	0.000	1.30	11.8	23.6	0.08	0.008				
65	34.42	0.000	1.52	9.5	22.5	0.1	0.01				
70	33.86	0.000	1.73	7.4	21.7	0.12	0.01				
71	33.89	0.000	1.72	7.0	21.6	0.12	0.01				
72	34.19	0.000	1.61	6.6	21.4	0.12	0.01				
73	34.87	0.000	1.38	6.2	21.3	0.1	0.01				
74	36.01	0.000	1.06	5.8	21.2	0.08	0.008				
75	37.62	0.000	0.73	5.5	21.1	0.05	0.005				
76	39.61	0.000	0.46	5.1	21.0	0.03	0.003				
77	41.66	0.000	0.29	4.7	20.9	0.02	0.002				
78	43.25	0.000	0.20	4.3	20.9	0.02	0.002				
79	43.86	0.000	0.17	4.0	20.8	0.01	0.001				
80	43.49	0.000	0.19	3.6	20.7	0.01	0.001				
81	42.65	0.000	0.23	3.2	20.7	0.02	0.002				
82	41.93	0.000	0.27	2.9	20.6	0.02	0.002				
83	41.66	0.000	0.29	2.5	20.6	0.02	0.002				
84	41.77	0.000	0.28	2.1	20.5	0.02	0.002				
85	41.78	0.000	0.28	1.8	20.5	0.02	0.002				
86	41.04	0.000	0.33	1.4	20.4	0.03	0.003				
87	39.69	0.000	0.45	1.1	20.4	0.04	0.004				
88	38.37	0.000	0.62	0.7	20.4	0.05	0.005				
89	37.48	0.000	0.76	0.4	20.4	0.06	0.006				
90	37.12	0.000	0.82	0.0	20.4	0.07	0.007				

**Verizon Wireless
Missouri Flat
ANDREW - SBNHH-1D65B_Port 3 - +45_04DT_1920 320° Sector**

**Maximum Permissible Exposure
(MPE): 1000 $\mu\text{W}/\text{cm}^2$**

ERP (Watts)		6906		Height (feet)		67		Downtilt (Degrees)		0	
Depression Angle	Relative dB	Relative Gain	ERP (Watts) in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE				
1	3.13	0.486	2052.23	1168.8	1169.0	0.05	0.005				
5	0.64	0.863	3641.05	233.2	234.1	2.22	0.22				
10	25.26	0.003	12.57	115.7	117.5	0.03	0.003				
20	21.14	0.008	32.45	56.0	59.6	0.3	0.03				
30	21.46	0.007	30.15	35.3	40.8	0.6	0.06				
35	29.76	0.001	4.46	29.1	35.6	0.12	0.01				
40	31.95	0.001	2.69	24.3	31.7	0.09	0.009				
45	17.49	0.018	75.20	20.4	28.8	3.02	0.3				
50	21.18	0.008	32.15	17.1	26.6	1.51	0.15				
55	40.53	0.000	0.38	14.3	24.9	0.02	0.002				
60	35.10	0.000	1.30	11.8	23.6	0.08	0.008				
65	34.42	0.000	1.52	9.5	22.5	0.1	0.01				
70	33.86	0.000	1.73	7.4	21.7	0.12	0.01				
71	33.89	0.000	1.72	7.0	21.6	0.12	0.01				
72	34.19	0.000	1.61	6.6	21.4	0.12	0.01				
73	34.87	0.000	1.38	6.2	21.3	0.1	0.01				
74	36.01	0.000	1.06	5.8	21.2	0.08	0.008				
75	37.62	0.000	0.73	5.5	21.1	0.05	0.005				
76	39.61	0.000	0.46	5.1	21.0	0.03	0.003				
77	41.66	0.000	0.29	4.7	20.9	0.02	0.002				
78	43.25	0.000	0.20	4.3	20.9	0.02	0.002				
79	43.86	0.000	0.17	4.0	20.8	0.01	0.001				
80	43.49	0.000	0.19	3.6	20.7	0.01	0.001				
81	42.65	0.000	0.23	3.2	20.7	0.02	0.002				
82	41.93	0.000	0.27	2.9	20.6	0.02	0.002				
83	41.66	0.000	0.29	2.5	20.6	0.02	0.002				
84	41.77	0.000	0.28	2.1	20.5	0.02	0.002				
85	41.78	0.000	0.28	1.8	20.5	0.02	0.002				
86	41.04	0.000	0.33	1.4	20.4	0.03	0.003				
87	39.69	0.000	0.45	1.1	20.4	0.04	0.004				
88	38.37	0.000	0.62	0.7	20.4	0.05	0.005				
89	37.48	0.000	0.76	0.4	20.4	0.06	0.006				
90	37.12	0.000	0.82	0.0	20.4	0.07	0.007				

**Verizon Wireless
Missouri Flat
ANDREW - SBNHH-1D65B_Port 1 - +45_04DT_0728 40° Sector**

**Maximum Permissible Exposure
(MPE): 466 $\mu\text{W}/\text{cm}^2$**

ERP (Watts)		Height (feet)		Downtilt (Degrees)			
		1378		67		0	
Depression Angle	Relative dB	Relative Gain	ERP (Watts) in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
1	0.48	0.895	1233.81	1168.8	1169.0	0.03	0.006
5	0.12	0.973	1340.45	233.2	234.1	0.82	0.18
10	3.15	0.484	667.19	115.7	117.5	1.61	0.35
20	13.15	0.048	66.72	56.0	59.6	0.63	0.13
30	13.43	0.045	62.55	35.3	40.8	1.25	0.27
35	22.16	0.006	8.38	29.1	35.6	0.22	0.05
40	18.84	0.013	18.00	24.3	31.7	0.6	0.13
45	18.96	0.013	17.51	20.4	28.8	0.7	0.15
50	20.91	0.008	11.18	17.1	26.6	0.53	0.11
55	19.12	0.012	16.87	14.3	24.9	0.91	0.19
60	18.54	0.014	19.29	11.8	23.6	1.16	0.25
65	20.17	0.010	13.25	9.5	22.5	0.87	0.19
70	22.68	0.005	7.43	7.4	21.7	0.53	0.11
71	23.14	0.005	6.69	7.0	21.6	0.48	0.1
72	23.61	0.004	6.00	6.6	21.4	0.44	0.09
73	24.11	0.004	5.35	6.2	21.3	0.39	0.08
74	24.65	0.003	4.72	5.8	21.2	0.35	0.08
75	25.27	0.003	4.10	5.5	21.1	0.31	0.07
76	25.98	0.003	3.48	5.1	21.0	0.26	0.06
77	26.78	0.002	2.89	4.7	20.9	0.22	0.05
78	27.67	0.002	2.36	4.3	20.9	0.18	0.04
79	28.61	0.001	1.90	4.0	20.8	0.15	0.03
80	29.57	0.001	1.52	3.6	20.7	0.12	0.03
81	30.49	0.001	1.23	3.2	20.7	0.1	0.02
82	31.30	0.001	1.02	2.9	20.6	0.08	0.02
83	31.97	0.001	0.88	2.5	20.6	0.07	0.01
84	32.48	0.001	0.78	2.1	20.5	0.06	0.01
85	32.86	0.001	0.71	1.8	20.5	0.06	0.01
86	33.15	0.000	0.67	1.4	20.4	0.05	0.01
87	33.40	0.000	0.63	1.1	20.4	0.05	0.01
88	33.69	0.000	0.59	0.7	20.4	0.05	0.01
89	34.06	0.000	0.54	0.4	20.4	0.04	0.01
90	34.61	0.000	0.48	0.0	20.4	0.04	0.008

Verizon Wireless
Missouri Flat
ANDREW - SBNHH-1D65B_Port 1 - +45_04DT_0728 120° Sector

Maximum Permissible Exposure
(MPE): 466 $\mu\text{W}/\text{cm}^2$

ERP (Watts)		Height (feet)		Downtilt (Degrees)			
1378		67		0			
Depression Angle	Relative dB	Relative Gain	ERP (Watts) in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
1	0.48	0.895	1233.81	1168.8	1169.0	0.03	0.006
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70	22.68	0.005	7.43	7.4	21.7	0.53	0.11
71	23.14	0.005	6.69	7.0	21.6	0.48	0.1
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74	24.65	0.003	4.72	5.8	21.2	0.35	0.08
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83	31.97	0.001	0.88	2.5	20.6	0.07	0.01
84	32.48	0.001	0.78	2.1	20.5	0.06	0.01
85	32.86	0.001	0.71	1.8	20.5	0.06	0.01
86	33.15	0.000	0.67	1.4	20.4	0.05	0.01
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89	34.06	0.000	0.54	0.4	20.4	0.04	0.01
90	34.61	0.000	0.48	0.0	20.4	0.04	0.008

**Verizon Wireless
Missouri Flat
ANDREW - SBNHH-1D65B_Port 1 - +45_04DT_0728 320° Sector**

**Maximum Permissible Exposure
(MPE): 466 $\mu\text{W}/\text{cm}^2$**

ERP (Watts)		1378		Height (feet)		67		Downtilt (Degrees)		0	
Depression Angle	Relative dB	Relative Gain	ERP (Watts) in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE				
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35	22.16	0.006	8.38	29.1	35.6	0.22	0.05				
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83	31.97	0.001	0.88	2.5	20.6	0.07	0.01				
84	32.48	0.001	0.78	2.1	20.5	0.06	0.01				
85	32.86	0.001	0.71	1.8	20.5	0.06	0.01				
86	33.15	0.000	0.67	1.4	20.4	0.05	0.01				
87	33.40	0.000	0.63	1.1	20.4	0.05	0.01				
88	33.69	0.000	0.59	0.7	20.4	0.05	0.01				
89	34.06	0.000	0.54	0.4	20.4	0.04	0.01				
90	34.61	0.000	0.48	0.0	20.4	0.04	0.008				

**Verizon Wireless
Missouri Flat
ANDREW - SBNHH-1D65B_Port 3 - +45_04DT_2110 40° Sector**

**Maximum Permissible Exposure
(MPE): 1000 μW/cm²**

ERP (Watts)		7400		Height (feet)		67		Downtilt (Degrees)		0	
Depression Angle	Relative dB	Relative Gain	ERP (Watts) in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density (μW/cm ²)	Percent of MPE				
1	4.17	0.383	1730.74	1168.8	1169.0	0.04	0.004				
5	0.72	0.847	3830.29	233.2	234.1	2.33	0.23				
10	14.49	0.036	160.78	115.7	117.5	0.39	0.04				
20	27.60	0.002	7.86	56.0	59.6	0.07	0.007				
30	32.96	0.001	2.29	35.3	40.8	0.05	0.005				
35	30.73	0.001	3.82	29.1	35.6	0.1	0.01				
40	20.60	0.009	39.38	24.3	31.7	1.31	0.13				
45	30.73	0.001	3.82	20.4	28.8	0.15	0.02				
50	27.18	0.002	8.65	17.1	26.6	0.41	0.04				
55	19.66	0.011	48.89	14.3	24.9	2.63	0.26				
60	19.59	0.011	49.69	11.8	23.6	2.99	0.3				
65	25.64	0.003	12.34	9.5	22.5	0.81	0.08				
70	37.74	0.000	0.76	7.4	21.7	0.05	0.005				
71	41.65	0.000	0.31	7.0	21.6	0.02	0.002				
72	47.05	0.000	0.09	6.6	21.4	0.007	0.0007				
73	57.18	0.000	0.01	6.2	21.3	0.0007	0.00007				
74	63.06	0.000	0.00	5.8	21.2	0.0003	0.00003				
75	53.77	0.000	0.02	5.5	21.1	0.001	0.0001				
76	50.22	0.000	0.05	5.1	21.0	0.003	0.0003				
77	47.34	0.000	0.08	4.7	20.9	0.006	0.0006				
78	44.48	0.000	0.16	4.3	20.9	0.01	0.001				
79	41.96	0.000	0.29	4.0	20.8	0.02	0.002				
80	40.18	0.000	0.43	3.6	20.7	0.03	0.003				
81	39.29	0.000	0.53	3.2	20.7	0.04	0.004				
82	39.09	0.000	0.56	2.9	20.6	0.04	0.004				
83	39.20	0.000	0.54	2.5	20.6	0.04	0.004				
84	39.38	0.000	0.52	2.1	20.5	0.04	0.004				
85	39.89	0.000	0.47	1.8	20.5	0.04	0.004				
86	41.15	0.000	0.35	1.4	20.4	0.03	0.003				
87	43.36	0.000	0.21	1.1	20.4	0.02	0.002				
88	46.24	0.000	0.11	0.7	20.4	0.009	0.0009				
89	49.08	0.000	0.05	0.4	20.4	0.004	0.0004				
90	51.12	0.000	0.04	0.0	20.4	0.003	0.0003				

**Verizon Wireless
Missouri Flat
ANDREW - SBNHH-1D65B_Port 3 - +45_04DT_2110 120° Sector**

**Maximum Permissible Exposure
(MPE): 1000 μW/cm²**

ERP (Watts)		7400		Height (feet)		67		Downtilt (Degrees)		0	
Depression Angle	Relative dB	Relative Gain	ERP (Watts) in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density (μW/cm²)	Percent of MPE				
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**Verizon Wireless
Missouri Flat
ANDREW - SBNHH-1D65B_Port 3 - +45_04DT_2110 320° Sector**

**Maximum Permissible Exposure
(MPE): 1000 $\mu\text{W}/\text{cm}^2$**

ERP (Watts)		7400		Height (feet)		67		Downtilt (Degrees)		0	
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89	49.08	0.000	0.05	0.4	20.4	0.004	0.0004				
90	51.12	0.000	0.04	0.0	20.4	0.003	0.0003				

PROJECT SUPPORT STATEMENT

DEVELOPMENT APPLICATION FOR VERIZON SITE "MISSOURI FLAT"

APN 327-213-08-10

4212 MISSOURI FLAT RD, PLACERVILLE, CA. 95667

INTRODUCTION

Verizon Wireless is seeking to improve communications service in the El Dorado area near Missouri Flat Rd and Hwy 50. Verizon would like to increase coverage and capacity in the area by constructing a new telecommunications facility in to improve service for both current and potential customers. Additionally, this network development will increase public safety within these areas and bring wireless service to areas that currently have poor capacity service.

This tower will help alleviate an area of poor coverage and inadequate capacity within this service area, which causes reoccurring lost calls and ineffective service. This site will relieve inadequate capacity issues along the high traffic, Missouri Flat commercial corridor. The proposed location of the tower is set within an unutilized portion of this parcel and will be designed to comply with all County of El Dorado's wireless design guidelines. The proposed Verizon Communications facility will be located within a 30' x 40' fenced compound including: (1) proposed 12' x 16' precast, concrete equipment shelter 10'x5' pad for a 30kw emergency standby generator and a 70' stealth, mono-oak (75' overall with crown), that will accommodate (3) sectors with (2) antennas per sector, (2) remote radio units (RRU's) per sector. This tower has been designed to accommodate future collocation by other carriers.

The parcel select selected for this communication is owned by Robert and Lynn Campbell, and totals 12.52 acres. The location for this project is situated 153" away from the nearest adjacent residential parcel and 530" from Missouri Flat Rd. The project has been designed as a stealth mono-oak that will blend in with the heavy vegetation and large mature tree canopy in the area and the compound will not be visible from Missouri Flat Rd.

This unmanned facility will provide service to area travelers, residents and businesses 24 hours a day, 7 days a week. This site will also serve as a back up to the existing landline service in the area and will provide improved mobile communications, essential to modern day commerce and recreation.

ALTERNATIVE SITE ANALYSIS

Numerous alternative sites were explored during the due diligence phase of this project. The following sites were reviewed and ultimately rejected for a variety of reasons.

6850 Green Leaf Dr. Best Western Hotel: This site was rejected as being too close to HWY 50 and would not have the required proximity to the existing Verizon Wedge Hill site.

6831 Mother Lode Drive, Existing Crown Castle tower: This site was rejected as being too close to HWY 50 and would not provide the desired coverage of Missouri Flat Rd.

1930 Verdis Lane: This site was rejected due to the proximity to residential parcels lack of adequate space for proper access to the proposed tower site.

3051 Sky Court: This site was rejected due to the proximity to residential parcels lack of adequate space for proper access to the proposed tower site.

3101 Sky Court: This site was rejected due to the proximity to residential parcels lack of adequate space for proper access to the proposed tower site.

4220 Missouri Flate Rd. Walgreens: This site was rejected as having inadequate elevation and an unwilling landlord.

6661 Oak Lane: This site was rejected as having inadequate elevation and an unwilling landlord.

SAFETY BENEFITS OF IMPROVED WIRELESS SERVICE

Mobile phone use has become an extremely important system for public safety. Along roads and highways without public call boxes, mobile phones are often the only means for emergency roadside communication. Motorists with disabled vehicles (or worse) can use their phone to call in and request appropriate assistance. With good cellular coverage along important roadways, emergency response is just a phone call away. Furthermore, as a back up system to traditional landline phone service, mobile phones have proven to be extremely important during natural disasters and other catastrophes.

Verizon has taken the responsibility for back-up service very seriously. As such, Verizon has incurred increased expense to install a standby diesel generator at this facility to insure quality communication for the surrounding community regardless of any disaster or catastrophe.

CONVENIENCE BENEFITS OF IMPROVED WIRELESS SERVICE

Modern day life has become increasingly dependent on instant communications. Whether it is a parent calling their child, spouse calling a spouse, or general contractor ordering materials to the jobsite, wireless phone service is no longer just a convenience. It has become a way of life and a way of business.

COMPLIANCE WITH COUNTY DEVELOPMENT STANDARDS

This project has been carefully designed to comply with all applicable standards.

COMPLIANCE WITH FCC STANDARDS

This project will not interfere with any TV, radio, telephone, satellite, or any other signals. Any interference would be against the Federal Law and would be a violation Verizon Wireless' FCC License. In addition, this project will conform to all FCC standards.

TECHNOLOGY AND CONSUMER SERVICES THE CARRIER WILL PROVIDE ITS CUSTOMERS

Verizon offers its customers multiple services such as, voice calls, text messaging, mobile email, picture/video messaging, mobile web, navigation, broadband access. Wireless service enhances public safety and emergency communications in the community. In rural areas such as the subject location, cellular phone service can cover much larger geographic areas than traditional landline phone service.

FUTURE COLLOCATION OPPORTUNITIES

The proposed site has been designed to allow for future co-location opportunities with other carriers. The land lease provides sufficient space for additional service providers and the tower and its foundation are designed for future equipment. This tower will eliminate the need for multiple towers within the same general vicinity, as it has been designed to accommodate an additional future carrier on the tower. Additional ground space would need to be leased from the landlord.

LIGHTING

Unless tower lighting is required by the FAA the only lighting on the facility will be a shielded motion sensor light by the door on the equipment shelter for servicing the equipment.

NOISE

The standby generator will be operated for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.

HAZARDOUS MATERIAL

A Hazardous Material Business Plan will also be submitted upon project completion, and stored on site after construction

ENVIRONMENTAL SETTING

The site is set within a parcel that is zoned R1A Residential and is consistent with application design standards in the area and environment.

MAINTENANCE AND STANDY GENERATOR TESTING

Verizon installs a standby diesel generator and batteries at many of its cell sites. The generator and batteries serve a vital role in Verizon emergency and disaster preparedness plan. In the event of a power outage, Verizon communications equipment will first transition over to the back-up batteries. The batteries can run the site for a few hours depending upon the demand placed upon the equipment. Should the power outage extend beyond the capacity of the batteries, the back-up generator will automatically start and continue to run the site. This two state back-up plan is an extremely important component of Verizon communications sites. Back-up batteries and generators allow Verizon communications sites to continue providing valuable communications services in the event of a power outage, natural disaster or other emergency.

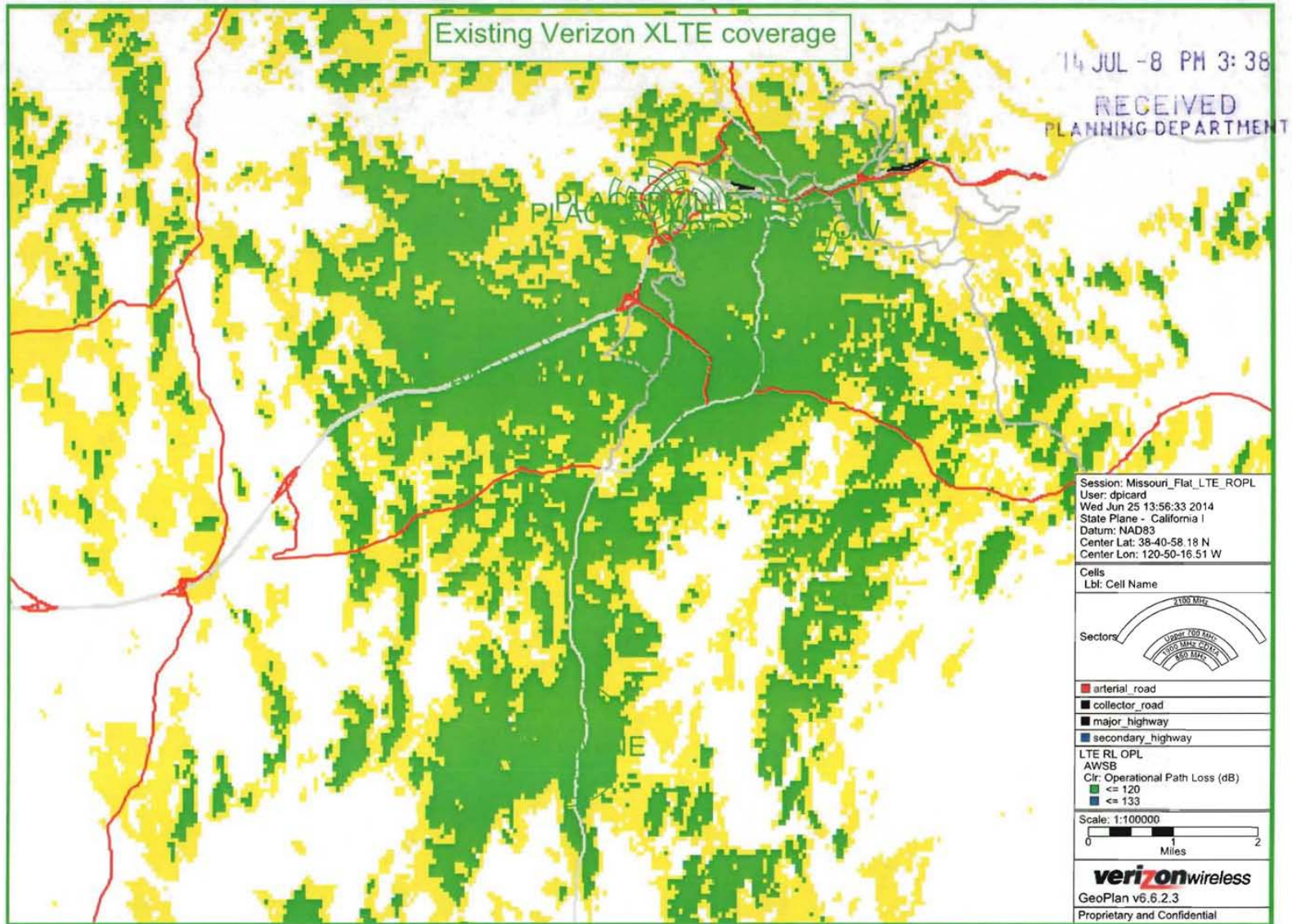
A standby generator will be installed at the site to ensure quality and consistent coverage in the event of a power outage or disaster. This generator will be run for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.

A technician will visit the site approximately twice a month to check the facility and perform any necessary maintenance.

CONSTRUCTION SCHEDULE

The construction of the facility will be in compliance with all local rules and regulations. The typical duration is two months. The crew size will range from two to ten individuals.

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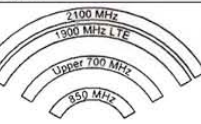


XLTE coverage from proposed Verizon site

Session: Missouri_Flat_AWS_ROPL
 User: dpicard
 Wed Jun 25 14:36:20 2014
 State Plane - California I
 Datum: NAD83
 Center Lat: 38-42-40.79 N
 Center Lon: 120-49-40.91 W

Cells
 Lbl: Cell Name

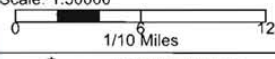
Sectors



arterial_road
 collector_road
 major_highway
 secondary_highway

LTE RL OPL
 AWSB
 Clr: Operational Path Loss (dB)
 <= 120
 <= 133

Scale: 1:50000



2005 Magnetic Declination
 14.86° (259 mils)
 Grid Convergence
 0.77° (13 mils)
 Values measured
 at center of map.

verizonwireless
 GeoPlan v6.6.2.3
 Proprietary and Confidential

