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July 21, 2016

VIA EMAIL AND FEDEX

Chair Rob Brown
Vice Chair Jeff Smith
Supervisors Jim Steele,
Jim Comstock and Anthony Farrington
Board of Supervisors
Lake County
255 North Forbes Street
Lakeport, California 95453

Re: Verizon Wireless Appeal of Denial of Application UP15-10
Telecommunications Facility, 5660 Staheli Drive, Kelseyville
Board of Supervisors Agenda, July 26, 2016

Dear Chair Brown, Vice Chair Smith and Supervisors:

We write to you again on behalf of Verizon Wireless with respect to the above-captioned application. In response to requests of the Board of Supervisors and public testimony at the Board hearing on June 28, 2016, Verizon Wireless has revised and supplemented the alternatives analysis previously submitted to the Board (the "Revised Alternatives Analysis") which is attached as Exhibit A for your review. The Revised Alternatives Analysis includes new coverage maps that show signal propagation from the maximum allowable height of 150 feet. In addition, the Revised Alternatives Analysis includes a review of all locations proposed by the Kelseyville Business Association and residents at the June 28, 2016 Board hearing. Two water tank locations have also been added to the Revised Alternatives Analysis as requested by the County. The Revised Alternatives Analysis now includes 14 specific alternatives evaluated by Verizon Wireless to provide service to the Kelseyville area.

Also attached as Exhibit B is a letter and graphic representation prepared by Hammett & Edison, Inc., Consulting Engineers that shows cumulative RF emissions from the proposed Verizon Wireless facility and California Highway Patrol station as requested by members of the Board. Rajat Mathur, who prepared these materials for Hammett & Edison, will be available to explain the graphic and answer your questions at the Board hearing on July 26, 2016.

Lake County Board of Supervisors

July 21, 2016

Page 2 of 2

Thank you for your review of these materials and your careful consideration of Verizon Wireless's proposal. We look forward to answering any questions you may have regarding these materials.

Very truly yours,

A handwritten signature in black ink, appearing to read "Paul Albritton", with a stylized flourish at the end.

Paul B. Albritton

cc: Anita Grant, Esq.
Keith Gronendyke

Schedule of Exhibits

Exhibit A: Revised Alternatives Analysis

Exhibit B: Letter from Hammett & Edison, Inc., Consulting Engineers



Verizon Wireless Alternatives Analysis REVISED

**Highway 29 & Live Oak
5660 Staheli Drive, Kelseyville**



July 21, 2016

**Summary of Site Evaluations
Conducted by Epic Wireless Group Inc.
Compiled by Mackenzie & Albritton LLP**

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Map of Alternatives

I. Executive Summary

Verizon Wireless seeks to fill a significant gap in its coverage in the Kelseyville area of Lake County. Based on a review of alternatives as set forth in the following analysis, Verizon Wireless believes that placing antennas on a wireless tower camouflaged to resemble a pine tree next to a grove of established trees on a large parcel (the “Proposed Facility”) constitutes the least intrusive alternative to provide service to the identified gap based on the values expressed in Lake County Code of Ordinances (the “Code”).

This revised Alternatives Analysis includes eight additional alternatives raised at the Lake County Board of Supervisors meeting of June 28, 2016 (Alternatives 7-14) as well as maps for three previously-reviewed alternatives showing coverage at an antenna centerline of 150 feet, the maximum height allowed under the Code (Alternatives 4-6).

II. Significant Gap

There is a significant gap in Verizon Wireless coverage in the Kelseyville area. Due to distance and intervening topography, existing Verizon Wireless facilities provide inadequate service to the Kelseyville area, and Verizon Wireless must place a new facility in the vicinity of the Proposed Facility to provide service coverage for residents, visitors and emergency communications. The identified “significant gap” in network coverage is more fully described in the *Statement of Verizon Wireless Radio Frequency Engineer Benjamin Santa Maria* (the “Significant Gap”).

III. Methodology

Once a significant gap has been determined, Verizon Wireless seeks to identify a location and design that will provide required coverage through the “least intrusive means” based upon the values expressed by local regulations. In addition to seeking the “least intrusive” alternative, sites proposed by Verizon Wireless must be feasible. In this regard, Verizon Wireless reviews the radio frequency propagation, elevation, grading requirements, height of any existing structures, available electrical and telephone utilities, access, available ground space, zoning and other critical factors such as a willing landlord in completing its site analysis.

The Code encourages co-location of facilities where a facility exists on a proposed site. Code §21-71.3(e). Co-location on facilities approved with an environmental document pursuant to Government Code §65850.6 is allowed with issuance of a minor use permit. Code §21-71.6. New wireless facilities require a major use permit. Code §21-71.7. Wireless facilities should be designed to minimize their appearance and visually blend with surroundings, sited so as not to negatively affect views and screened from public viewing areas to the maximum extent feasible. Code §§21-71.8(a)(1), 21-71.8(a)(3), 21-71.8(a)(5). The maximum height allowed for a wireless tower is 150 feet. Code §21-71.8(a)(16).

IV. Analysis

Collocation Review

Per the Code's encouragement, Verizon Wireless first sought opportunities to co-locate on existing wireless facilities, but no existing wireless facilities were identified in the vicinity of Kelseyville. The closest existing wireless carrier facilities identified by Verizon Wireless are a US Cellular facility east of Highway 175 4.5 miles southeast of the Proposed Facility, which cannot serve the Significant Gap due to distance and substantial intervening terrain, and the Lake County Courthouse in Lakeport 6.5 miles northwest of the Proposed Facility, which cannot serve the Significant Gap due to distance. Lacking any collocation opportunities that can serve the Significant Gap, Verizon Wireless sought to place a new wireless facility.

Locations Discounted Due to Zoning

Under Code §27.11 Table B, new wireless facilities are not allowed in the following zones comprising most of the downtown Kelseyville area: R1, R2, R3, C1, C2, PDR and PDC. Verizon Wireless initially considered several locations in downtown Kelseyville:

- **5560 Live Oak Drive**
- **5570 Live Oak Drive**
- **5620 Live Oak Drive**
- **5642 Live Oak Drive**
- **5660 Live Oak Drive**
- **5575 7th Street**

Verizon Wireless did not pursue these locations after discovering that they are situated in the C2 zone where new wireless facilities are not allowed. Similarly, Verizon Wireless did not pursue other locations within zones that do not allow new wireless facilities.

Locations Discounted Due to Lack of Willing Landlord

Parcels zoned O (open space) allow wireless facilities with a use permit. Verizon Wireless approached the Kelseyville School District regarding its properties in O zones in Kelseyville, but the School District responded indicating a lack of interest in a wireless facility at the the District headquarters property at 4410 Konocti Road and did not respond regarding a facility at Kelseyville High School. Lacking a willing landlord, these Kelseyville School District properties are not feasible alternatives.

Elevated Locations

Verizon Wireless next sought locations near the center of the Significant Gap where antennas can be elevated to a sufficient height to serve the gap while allowing for a facility height that minimizes visual impacts. Verizon Wireless RF engineers sought locations in proximity to Highway 29 as such proximity allows engineers to optimize the

network to serve this busy roadway and adjacent commercial and residential areas. RF engineers identified the topographic rise south of Highway 29 and west of Staheli Drive as an ideal location for a new wireless facility to serve the Significant Gap, and Verizon Wireless reviewed the following three parcels that comprise this topographic rise.

1. Proposed Facility – 5660 Staheli Drive

Address: 5660 Staheli Drive

Elevation: 1,435 feet

Zoning: RR

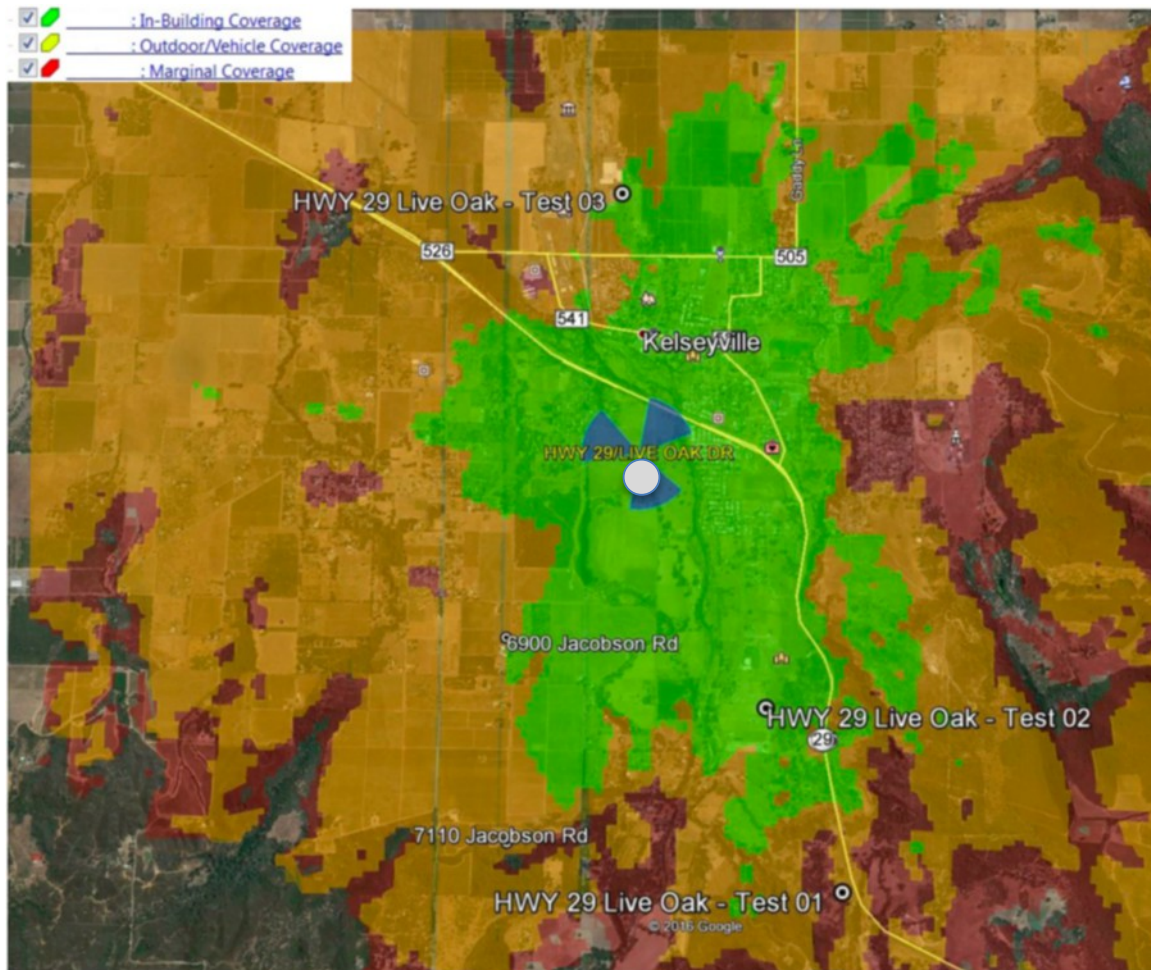


Verizon Wireless proposes to place its antennas on a 64 foot tower disguised as a pine tree near a grove of established trees on this 17 acre parcel. Antennas will be concealed within faux foliage and branches, and branches will extend an additional five feet above the tower, providing a realistic tapered appearance. Antennas will be covered with pine needle socks for further concealment. The treepole will be placed in a 1,200 square foot fenced area area which will also contain radio cabinets and a generator that will provide continued power in case of emergencies. The facility will be reached by an existing access road.

As shown in the following propagation map, a 64-foot facility on this elevated parcel with antennas placed at a centerline of 55 feet will provide new coverage to the Kelseyville area, providing service to the Highway 29 corridor and surrounding commercial and residential areas. This is Verizon Wireless's preferred location for the Proposed Facility.

Coverage Provided by Proposed Facility – 5660 Staheli Drive

55 Foot Antenna Centerline



2. 5700 Staheli Drive

Address: 5700 Staheli Drive

Elevation: 1,395-1,440 feet

Zoning: A



Verizon Wireless reviewed this 37 acre parcel located immediately south of the Proposed Facility parcel at a varying overall lower elevation. Verizon Wireless contacted the property owner regarding placement of a wireless facility at this location, but received no reply. Lacking a willing landlord, this is not a feasible alternative for Verizon Wireless's facility.

3. 5880 Staheli Drive

Address: 5880 Staheli Drive

Elevation: 1,410-1,440 feet

Zoning: A



Verizon Wireless reviewed this 2.4 acre parcel located 0.2 miles south of the Proposed Facility parcel. The elevation of this parcel varies from 10 feet higher to 20 feet lower in elevation than the Proposed Facility. Due to the 50 foot setback for wireless facilities required under Code § 21-71.8(a)(17), a wireless facility on this parcel would be limited to a south-facing slope with abundant trees, several of which would need to be removed to construct a wireless facility equipment area and 10-foot wide access road. Tree removal conflicts with the requirement that any trees providing screening be protected from any damage under Code § 21-71.8(a)(18). Additionally, grading for a new 10-foot wide access road would present environmental impacts at this sloped location. Due to required tree removal and environmental impacts from grading, this is not a less intrusive alternative to the Proposed Facility.

Locations Suggested by Staff or Community

Verizon Wireless reviewed the following ten locations which were suggested by County representatives, the Kelseyville Business Association or local residents.

4. 4695 Cole Creek Road

Address: 4695 Cole Creek Road

Elevation: 1,630 feet

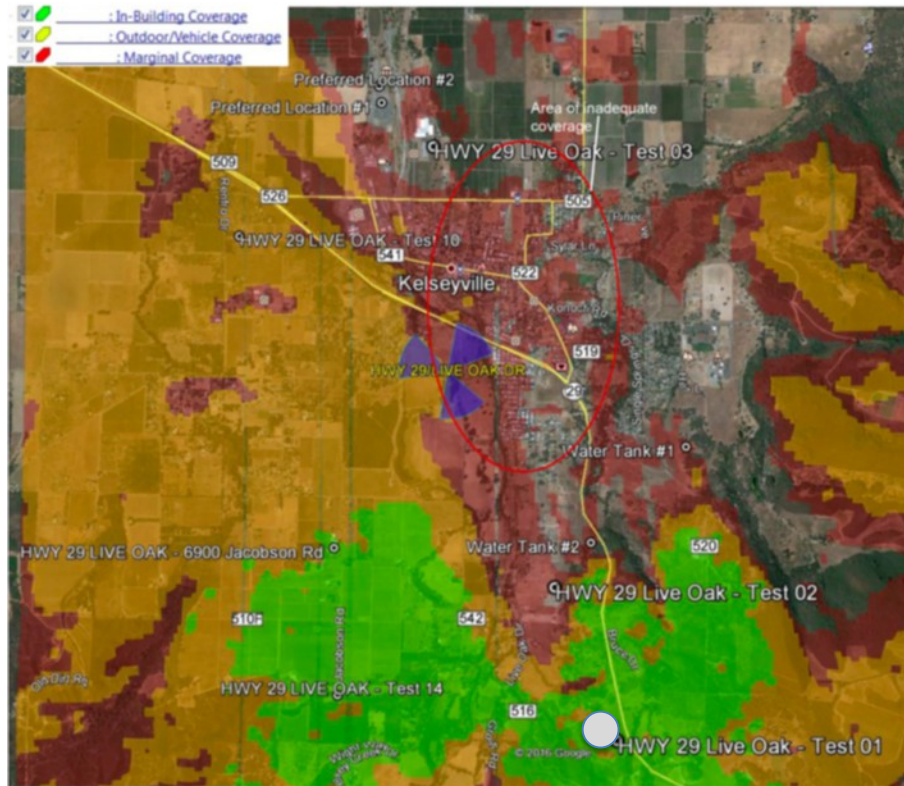
Zoning: RR



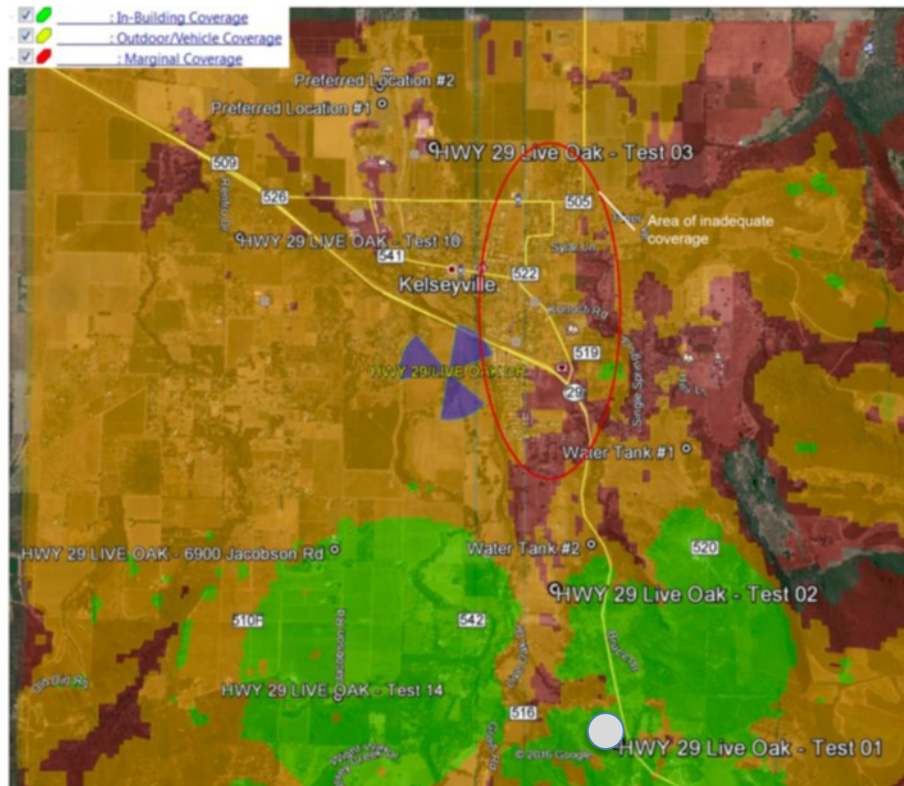
At the request of Planning Staff, Verizon Wireless reviewed this property located 1.6 miles southeast of the Proposed Facility and approximately 200 feet greater in elevation. Verizon Wireless RF engineers determined that due to distance and intervening topography, a facility at this location of the maximum height of 150 feet allowed under the Code cannot serve the Significant Gap. As shown in the following coverage map, on which this location is marked Test 01, there would remain a broad gap in coverage in the northern portion of the Significant Gap, notably with a lack of in-building in all of downtown Kelseyville. The most critical area of inadequate coverage is identified by Verizon Wireless RF engineers in a red circle on the map. Due to inability to serve the Significant Gap, this is not a viable alternative for Verizon Wireless's facility.

Coverage Provided by Alternative Facility – 4695 Cole Creek Road

55 Foot Antenna Centerline



150 Foot Antenna Centerline



5. 6738 Live Oak Drive

Address: 6738 Live Oak Drive

Elevation: 1,525 feet

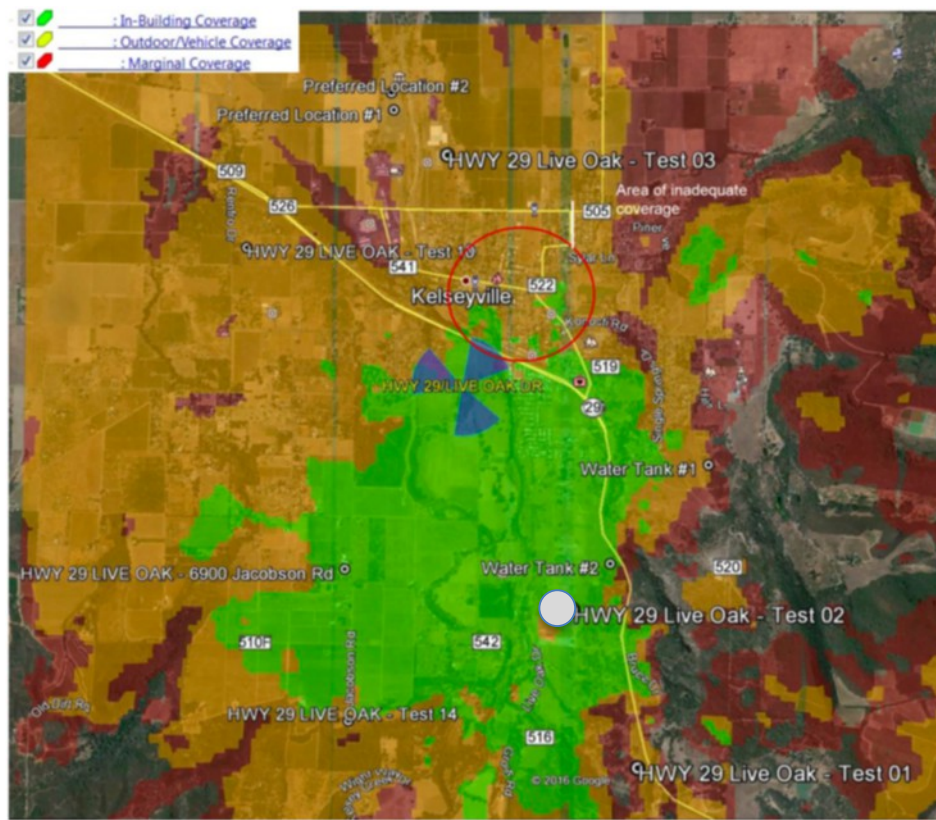
Zoning: RR



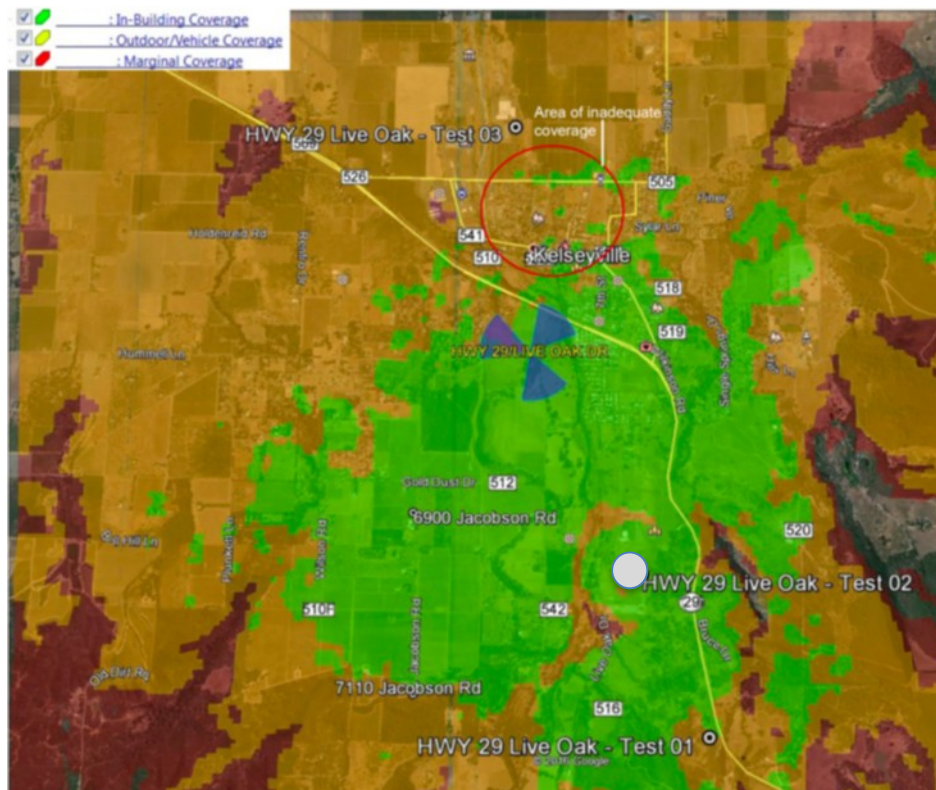
Verizon Wireless reviewed this property proposed by the Kelseyville Business Association located one mile southeast of the Proposed Facility and approximately 190 feet greater in elevation. Due to hilly terrain immediately east of the developed portion of this property, a new wireless facility would need to be located on a higher-elevation area to serve Highway 29 further east, requiring construction of a new access road that would pose environmental impacts due to grading. Verizon Wireless RF engineers determined that due to distance and intervening topography, a facility at this location of the maximum height of 150 feet allowed under the Code cannot serve the Significant Gap. As shown in the following coverage map, on which this location is marked Test 02, there would remain a broad gap in coverage in the northern portion of the Significant Gap, notably with a lack of in-building coverage in much of downtown Kelseyville. The most critical area of inadequate coverage is identified by Verizon Wireless RF engineers in a red circle on the map. Due to inability to serve the Significant Gap, this is not a viable alternative for Verizon Wireless's facility.

Coverage Provided by Alternative Facility - 6738 Live Oak Drive

55 Foot Antenna Centerline



150 Foot Antenna Centerline



6. 4820 Loasa Road

Address: 4820 Loasa Road

Elevation: 1,370 feet

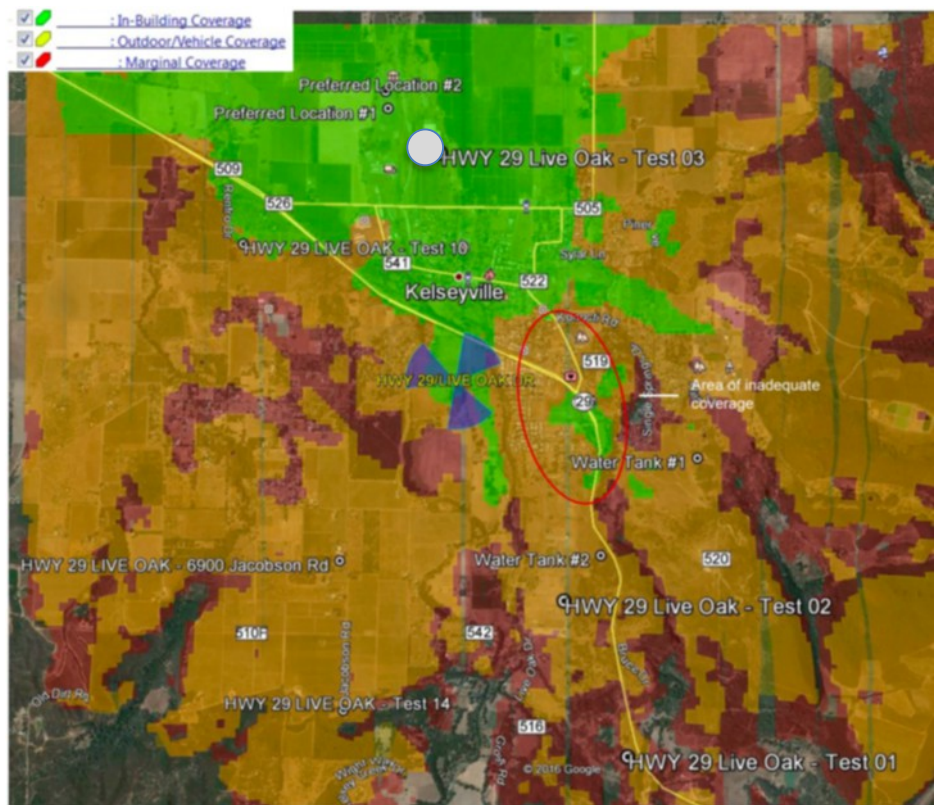
Zoning: A



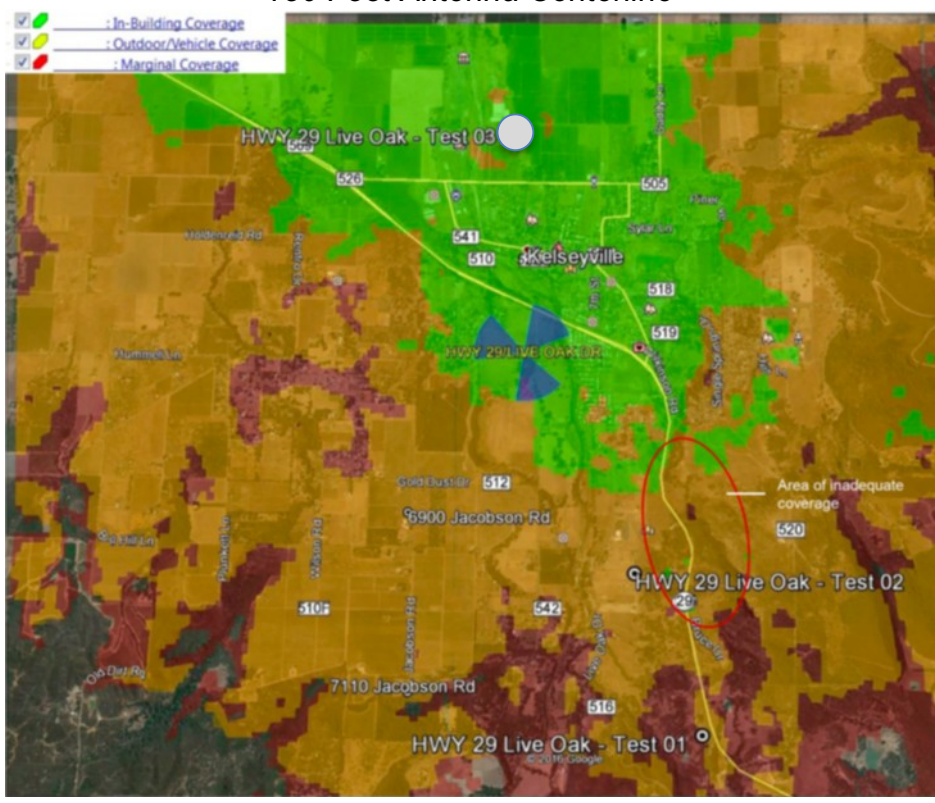
At the request of Planning Staff, Verizon Wireless reviewed this property located 0.9 miles north of the Proposed Facility and approximately 60 feet lower in elevation. Verizon Wireless RF engineers determined that due to distance and intervening topography, a facility at this location of the maximum height of 150 feet allowed under the Code cannot serve the Significant Gap. As shown in the following coverage map, on which this location is marked Test 03, there would remain a broad gap in coverage in the southern portion of the Significant Gap, notably with a lack of in-building coverage in residential areas along Highway 29 south of Kelseyville. The most critical area of inadequate coverage is identified by Verizon Wireless RF engineers in a red circle on the map. Due to inability to serve the Significant Gap, this is not a viable alternative for Verizon Wireless's facility.

Coverage Provided by Alternative Facility - 4820 Loasa Road

55 Foot Antenna Centerline



150 Foot Antenna Centerline



7. 4460 East Finley Road

Address: 4460 East Finley Road

Elevation: 1,365 feet

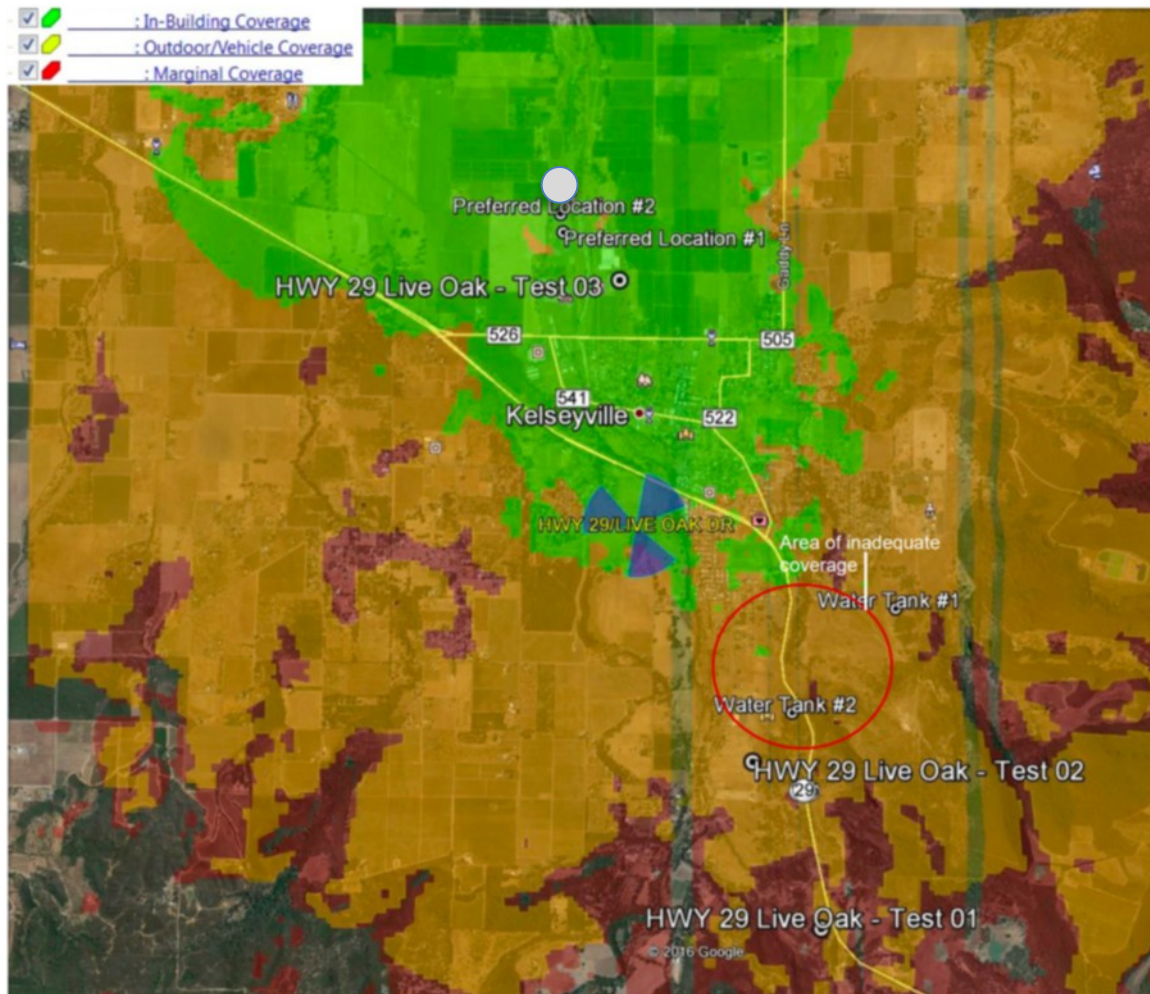
Zoning: O



Verizon Wireless reviewed this County-owned property proposed by the Kelseyville Business Association located 1.25 miles northwest of the Proposed Facility and approximately 70 feet lower in elevation. Verizon Wireless RF engineers determined that due to distance and intervening topography, a facility at this location of the maximum height of 150 feet allowed under the Code cannot serve the Significant Gap. As shown in the following coverage map, on which this location is marked Preferred Location #2, there would remain a broad gap in coverage in the southern portion of the Significant Gap, notably with a lack of in-building coverage in residential areas along Highway 29 south of Kelseyville. The most critical area of inadequate coverage is identified by Verizon Wireless RF engineers in a red circle on the map. Due to inability to serve the Significant Gap, this is not a viable alternative for Verizon Wireless's facility.

Coverage Provided by Alternative Facility – 4460 East Finley Road

150 Foot Antenna Centerline



8. 3550 Big Valley Road

Address: 3550 Big Valley Road

Elevation: 1,365 feet

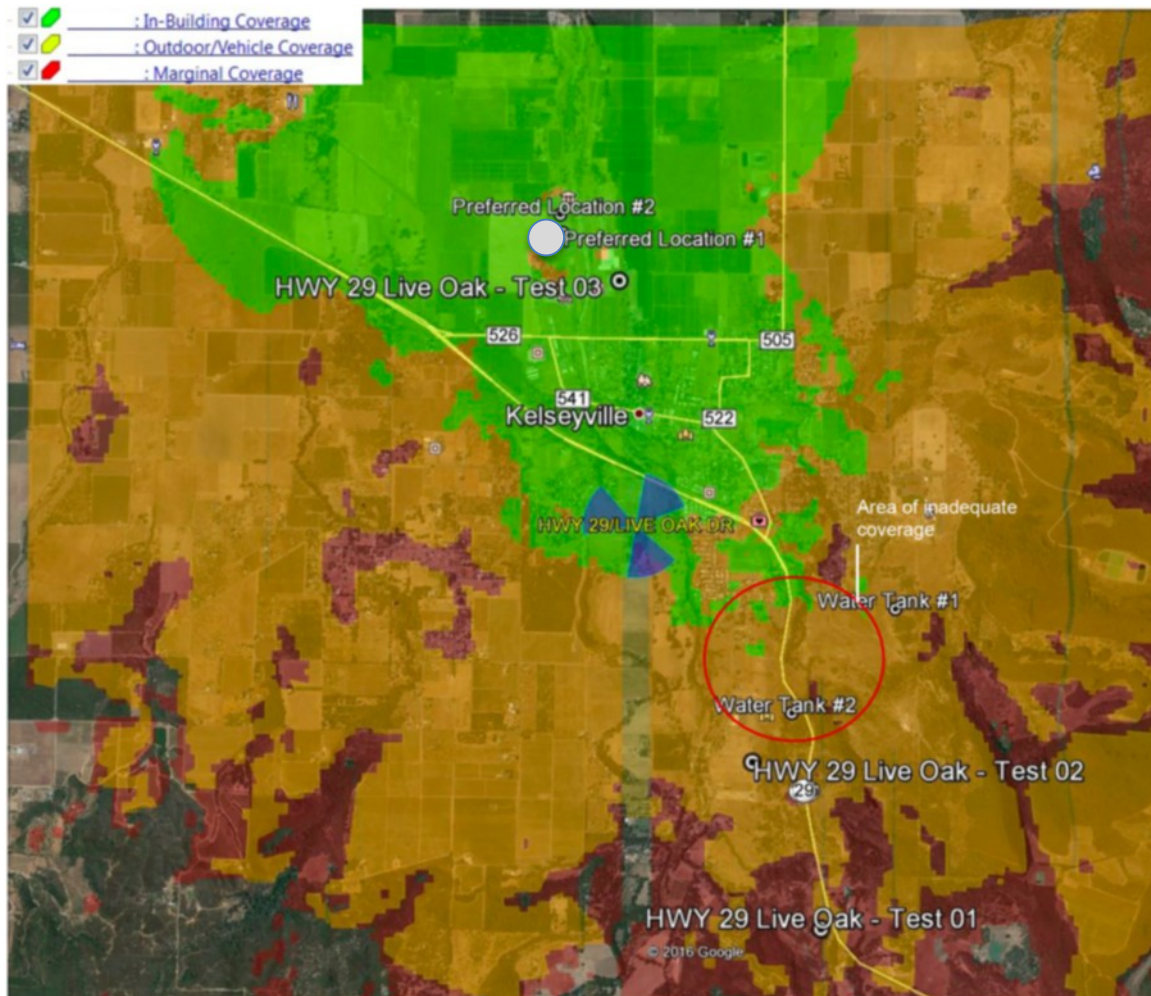
Zoning: M2



Verizon Wireless reviewed this property proposed by the Kelseyville Business Association located 1.3 miles northwest of the Proposed Facility and approximately 70 feet lower in elevation. Verizon Wireless RF engineers determined that due to distance and intervening topography, a facility at this location of the maximum height of 150 feet allowed under the Code cannot serve the Significant Gap. As shown in the following coverage map, on which this location is marked Preferred Location #1, there would remain a gap in coverage in the southern portion of the Significant Gap, notably with a lack of in-building coverage in residential areas along Highway 29 south of Kelseyville. The most critical area of inadequate coverage is identified by Verizon Wireless RF engineers in a red circle on the map. Due to inability to serve the Significant Gap, this is not a viable alternative for Verizon Wireless's facility.

Coverage Provided by Alternative Facility – 3550 Big Valley Road

150 Foot Antenna Centerline



9. 3575 Big Valley Road

Address: 3575 Big Valley Road

Elevation: 1,370 feet

Zoning: PDC



Verizon Wireless reviewed this property proposed by the Kelseyville Business Association located .9 miles northwest of the Proposed Facility and approximately 65 feet lower in elevation. This site is zoned PDC—planned development commercial. Under the Code, wireless facilities are not allowed in the PDC zone. Lacking the ability to obtain a use permit, this is not a feasible alternative for Verizon Wireless’s facility.

10. 5170 Renfro Drive

Address: 5170 Renfro Drive

Elevation: 1,430 feet

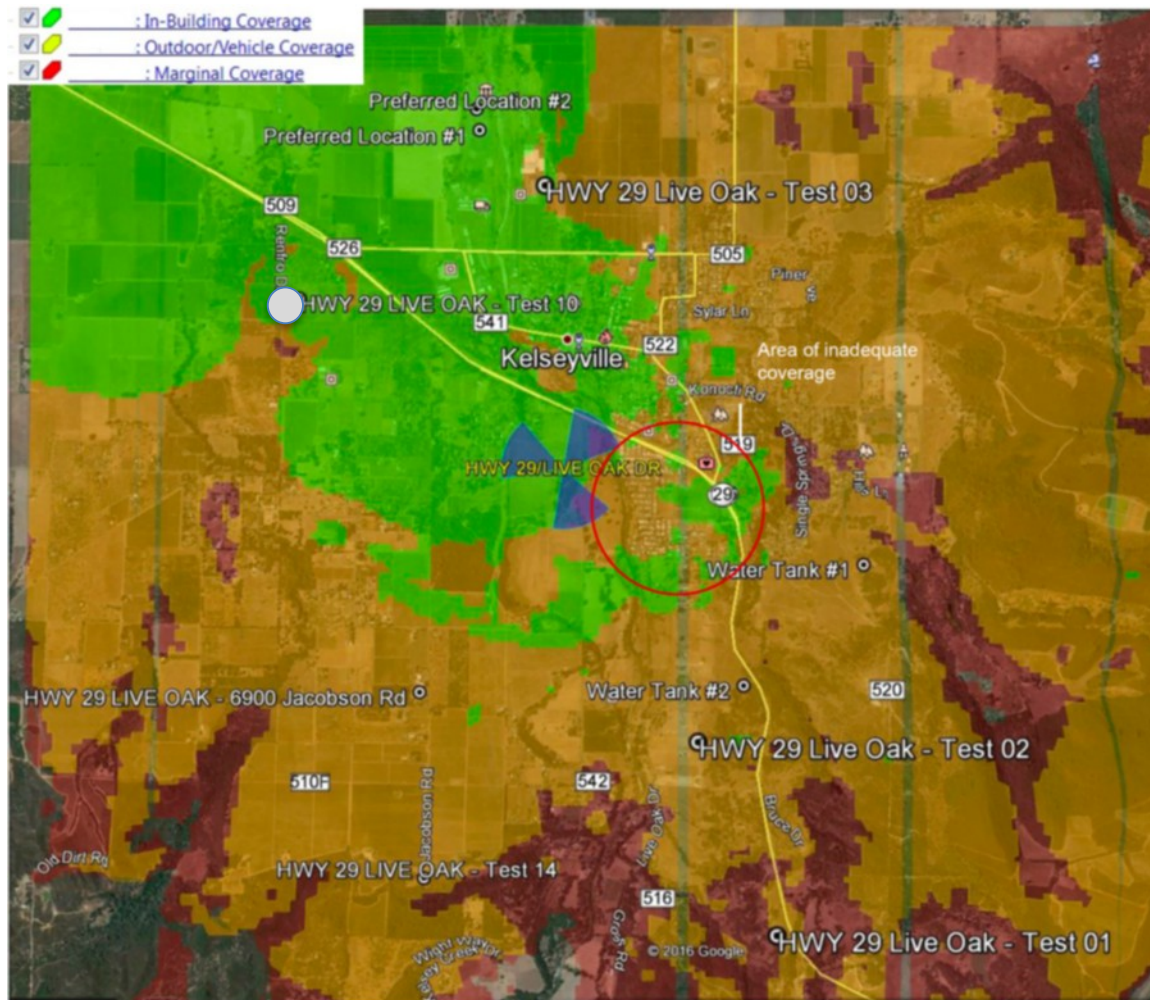
Zoning: A



Verizon Wireless reviewed this location proposed by a resident located one mile northwest of the Proposed Facility at a similar elevation. Verizon Wireless RF engineers determined that due to distance and intervening topography, a facility at this location even of the maximum height of 150 feet allowed under the Code cannot serve the Significant Gap. As shown in the following coverage map, on which this location is marked Test 10, there would remain a gap in coverage in the much of the Significant Gap, notably with a lack of in-building coverage in residential areas of downtown Kelseyville and areas south. The most critical area of inadequate coverage is identified by Verizon Wireless RF engineers in a red circle on the map. Due to inability to serve the Significant Gap, this is not a viable alternative for Verizon Wireless's facility.

Coverage Provided by Alternative Facility – 5170 Renfro Drive

150 Foot Antenna Centerline



11. Water Tank – Oak Hills Lane

Address: Oak Hills Lane, APN 007-015-62

Elevation: 1,530 feet

Zoning: R1



Verizon Wireless reviewed this small property proposed by a County representative located one mile east of the Proposed Facility and approximately 95 feet greater in elevation. This site is zoned R1—residential. Under the Code, wireless facilities are not allowed in the R1 zone. Lacking the ability to obtain a use permit, this is not a feasible alternative for Verizon Wireless’s facility.

12. Water Tanks – Highway 29

Address: Highway 29, 6435 State Highway 29

Elevation: 1,530 feet

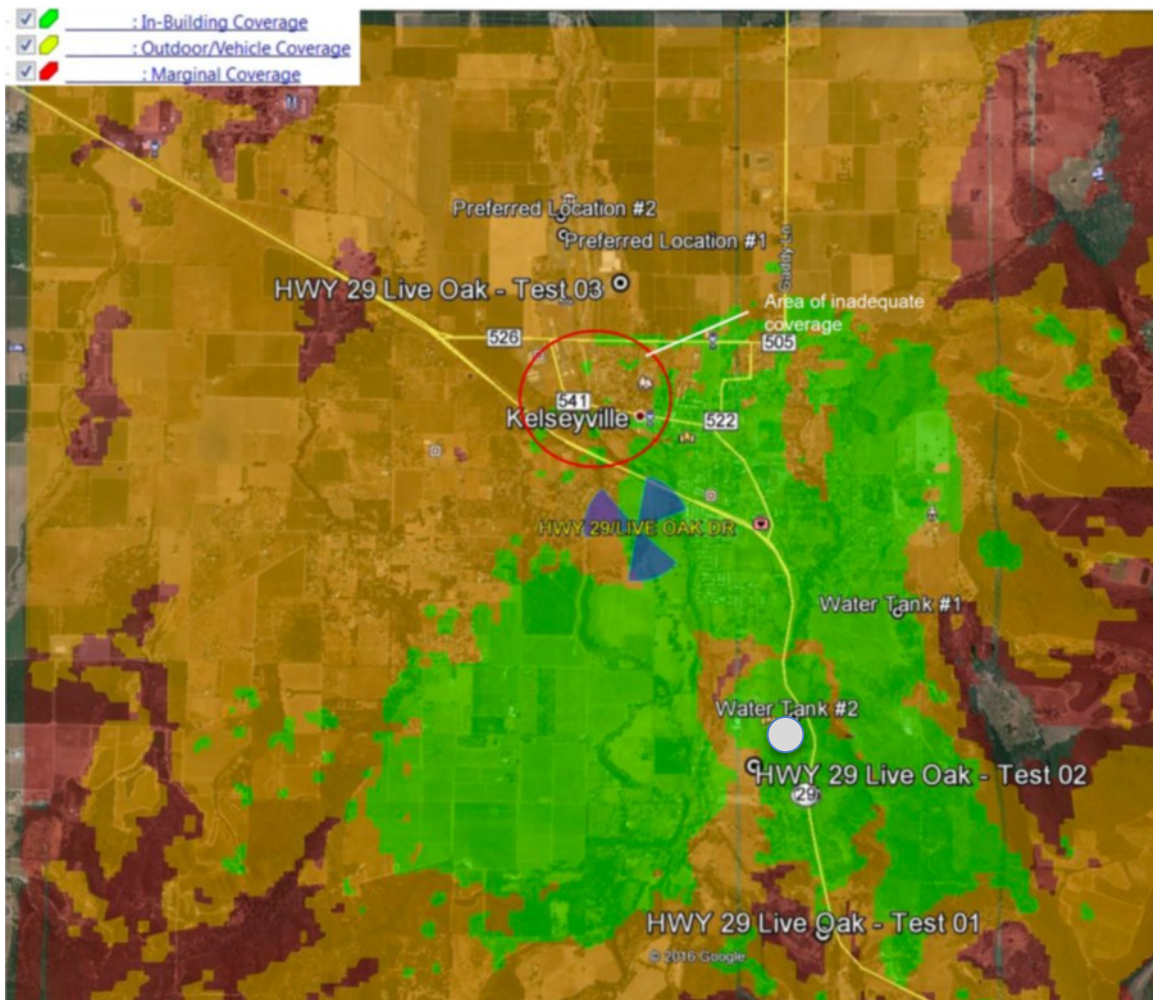
Zoning: O



Verizon Wireless reviewed this County-owned property proposed by a County representative located 0.9 miles southeast of the Proposed Facility and approximately 95 feet greater in elevation. Verizon Wireless RF engineers determined that due to distance and intervening topography, a facility at this location of the maximum height of 150 feet allowed under the Code cannot serve the Significant Gap. As shown in the following coverage map, on which this location is marked Water Tank #2, there would remain a gap in coverage in the northern portion of the Significant Gap, notably with a lack of in-building coverage in a large area of downtown Kelseyville and areas north and south. The most critical area of inadequate coverage is identified by Verizon Wireless RF engineers in a red circle on the map. Due to inability to serve the Significant Gap, this is not a viable alternative for Verizon Wireless's facility.

Coverage Provided by Alternative Facility – Water Tanks, Highway 29

150 Foot Antenna Centerline



13. 6900 Jacobson Road

Address: 6900 Jacobson Road

Elevation: 1,500-1,520 feet

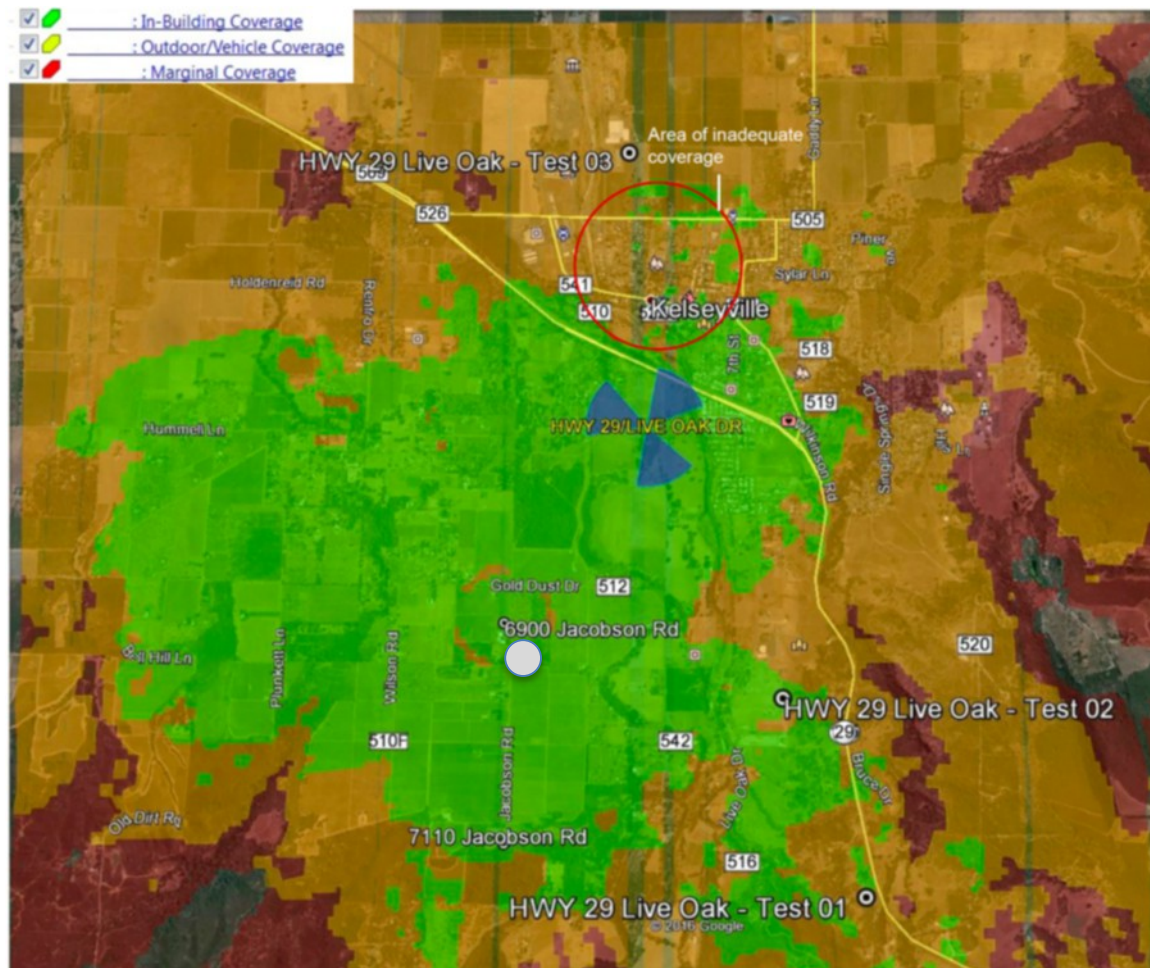
Zoning: A



Verizon Wireless reviewed this property proposed by a resident located 1.1 miles southwest of the Proposed Facility and approximately 65 to 85 feet greater in elevation. Verizon Wireless RF engineers determined that due to distance and intervening topography, a facility at this location of the maximum height of 150 feet allowed under the Code cannot serve the Significant Gap. As shown in the following coverage map, on which this location is marked 6900 Jacobson, there would remain a broad gap in coverage in the northern portion of the Significant Gap, notably with a lack of in-building coverage in a large area of downtown Kelseyville. The most critical area of inadequate coverage is identified by Verizon Wireless RF engineers in a red circle on the map. Due to inability to serve the Significant Gap, this is not a viable alternative for Verizon Wireless's facility.

Coverage Provided by Alternative Facility – 6900 Jacobson Road

150 Foot Antenna Centerline



14. 7110 Jacobson Road

Address: 7110 Jacobson Road

Elevation: 1,500-1,550 feet

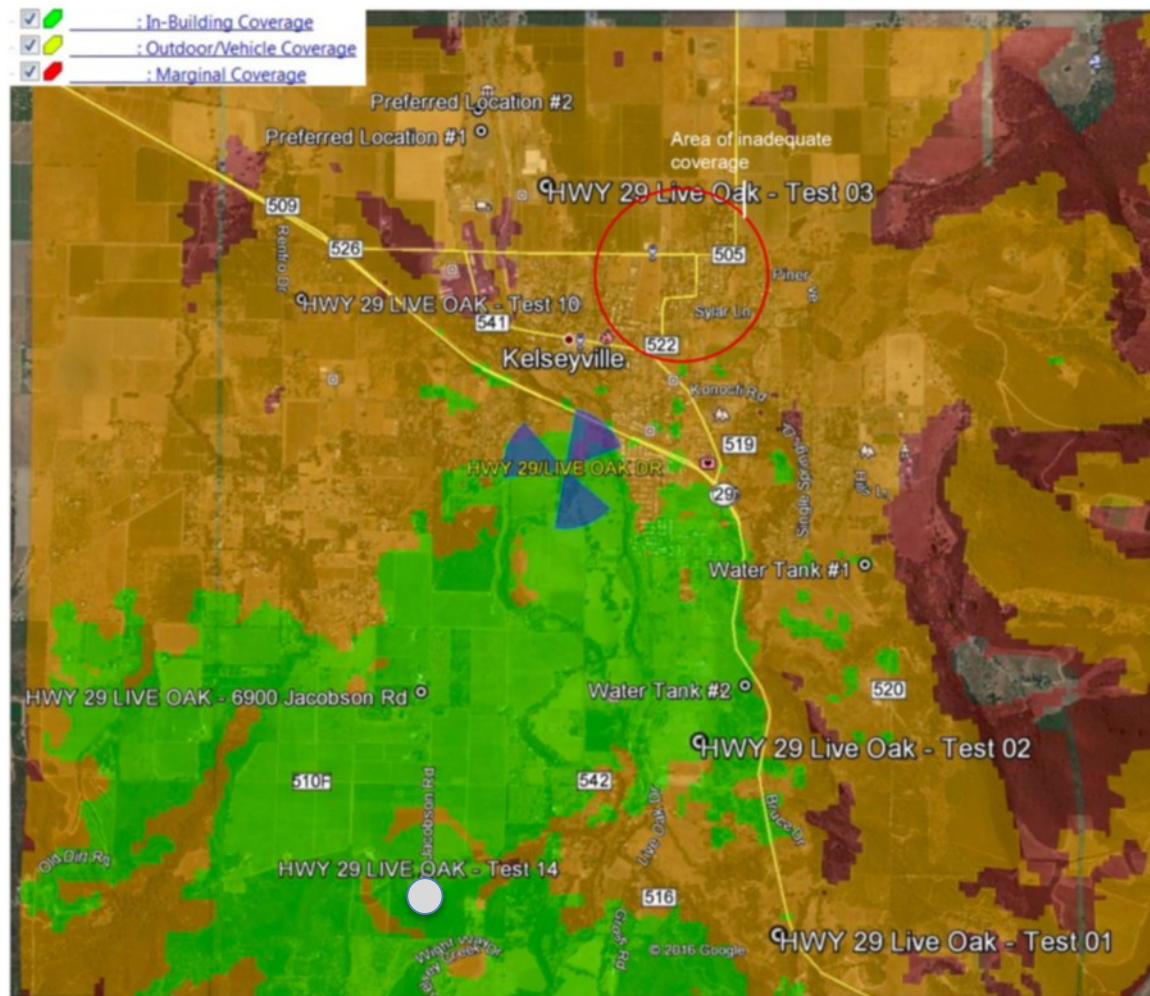
Zoning: A



Verizon Wireless reviewed this property proposed by a resident located 1.25 miles southwest of the Proposed Facility and approximately 65 to 115 feet greater in elevation. Verizon Wireless RF engineers determined that due to distance and intervening topography, a facility at this location of the maximum allowed height of 150 feet cannot serve the Significant Gap. As shown in the following coverage map, on which this location is marked Test 14, there would remain a broad gap in coverage in the northern portion of the Significant Gap, notably with a lack of in-building coverage in all of downtown Kelseyville. The most critical area of inadequate coverage is identified by Verizon Wireless RF engineers in a red circle on the map. Due to inability to serve the Significant Gap, this is not a viable alternative for Verizon Wireless's facility.

Coverage Provided by Alternative Facility – 7110 Jacobson Road

150 Foot Antenna Centerline

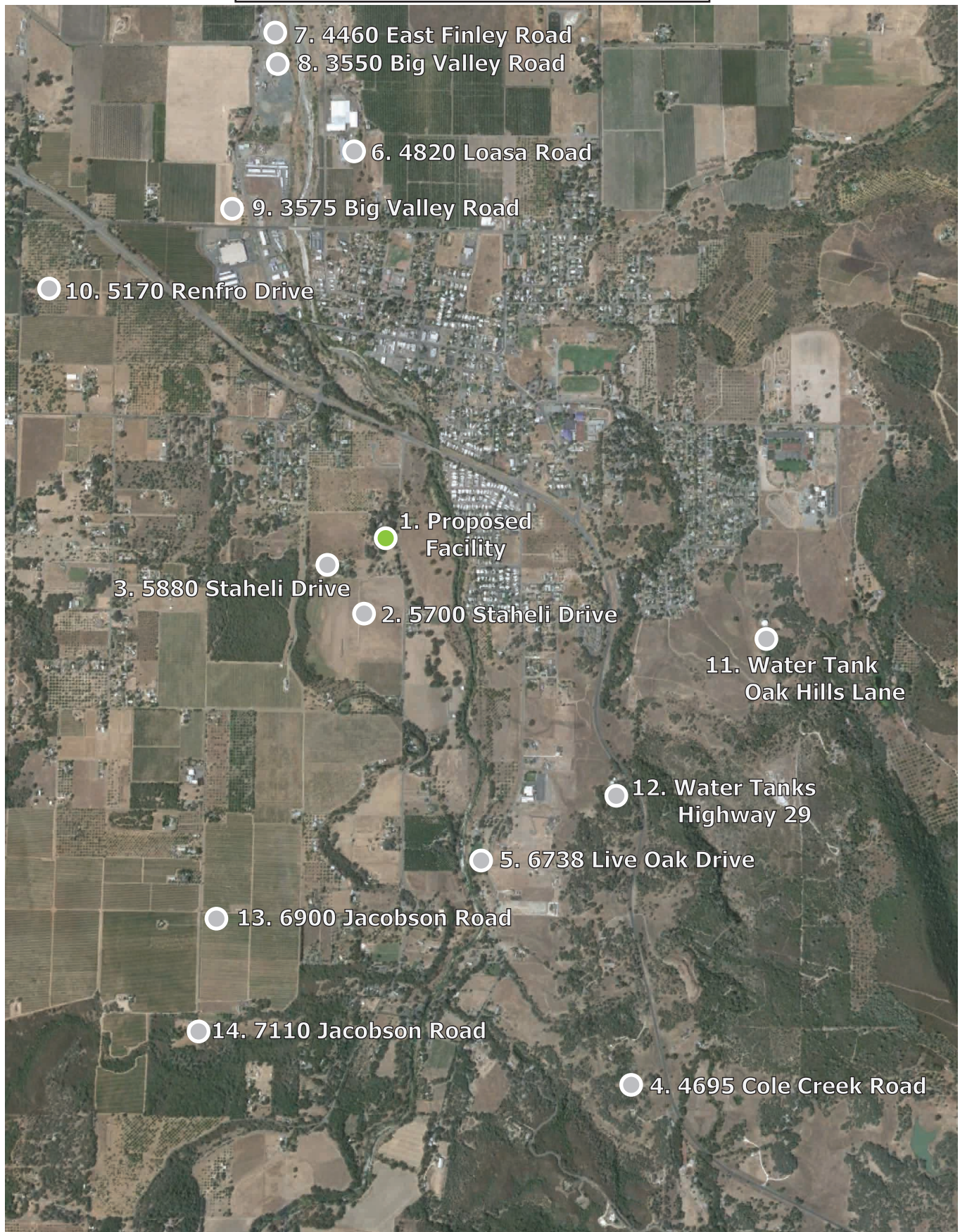


Conclusion

Verizon Wireless has reviewed local zoning districts and fourteen specific locations as alternatives to serve a Significant Gap in the Kelseyville area. Based upon the standards identified in the Lake County Code of Ordinances, the Proposed Facility – with antennas placed on a wireless tower camouflaged as a pine tree placed next to a grove of established trees – clearly constitutes the least intrusive feasible alternative to fill the identified Significant Gap in coverage under the values expressed in Lake County regulations.



Highway 29 & Live Oak
Lake County
Alternative Locations





HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
BROADCAST & WIRELESS

WILLIAM F. HAMMETT, P.E.
STANLEY SALEK, P.E.
ROBERT P. SMITH, JR.
RAJAT MATHUR, P.E.
ANDREA L. BRIGHT, P.E.
NEIL J. OLIJ, P.E.
BRIAN F. PALMER

ROBERT L. HAMMETT, P.E.
1920-2002
EDWARD EDISON, P.E.
1920-2009

DANE E. ERICKSEN, P.E.
CONSULTANT

EXHIBIT B

BY E-MAIL EDWARD.GODFREY@VERIZONWIRELESS.COM

July 20, 2016

Mr. Edward Godfrey
Verizon Wireless
2785 Mitchell Drive
Building 9
Walnut Creek, California 94598

Dear Ed:

As you requested, the attached figure provides supplemental information on the RF exposure conditions from the Verizon Wireless base station (Site No. 297519 "Hwy 29/Live Oak Drive") proposed to be located at 5660 Staheli Drive in Kelseyville, California. Specifically, the figure shows calculated cumulative RF exposure levels at ground due to the proposed Verizon facility and the existing California Highway Patrol ("CHP") facility, located about 2,000 feet to the east, including levels at the mobile home parks located between the two facilities.

We appreciate the opportunity to be of service and would welcome any questions on this material.

Sincerely,

Rajat Mathur

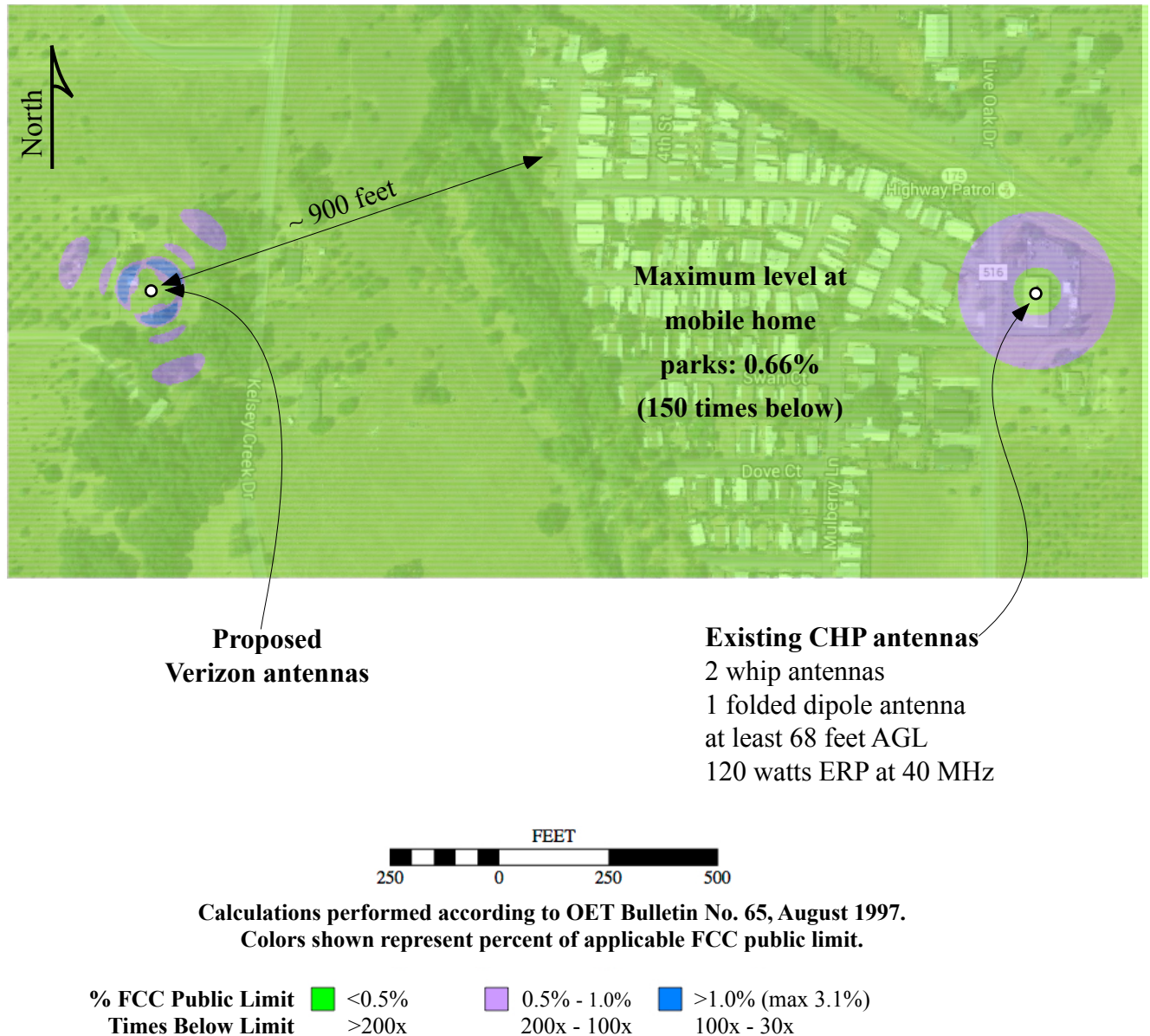
jp

Enclosure

cc: Mr. Paul Albritton (w/encl) - BY E-MAIL PA@MALLP.COM

**Verizon Wireless • Proposed Base Station (Site No. 297519 “Hwy 29/Live Oak Drive”)
5660 Staheli Drive • Kelseyville, California**

**Calculated Cumulative RF Exposure Levels at Ground Due to
Proposed Verizon and Existing CHP Facilities**



The maximum calculated RF exposure level anywhere at ground due to the existing CHP facility by itself is 0.71% of the public limit. The maximum calculated level anywhere at ground due to the proposed Verizon facility by itself is 3.1% of the public limit. Due to the physical separation of the two facilities (approximately 2,000 feet), the maximum calculated cumulative level anywhere at ground is also 3.1% of the public limit. See our June 27, 2016, report for details on the proposed Verizon facility.

