

# Green Valley Road

**El Dorado County Planning Commission  
CUP23-0011**

June 13, 2024

**Kevin Gallagher, Complete Wireless Consulting  
Ericson Malana, Verizon Wireless RF Engineer  
Jeremy Stroup, Verizon Wireless Municipal Engagement  
David Witkowski, Oku Solutions**



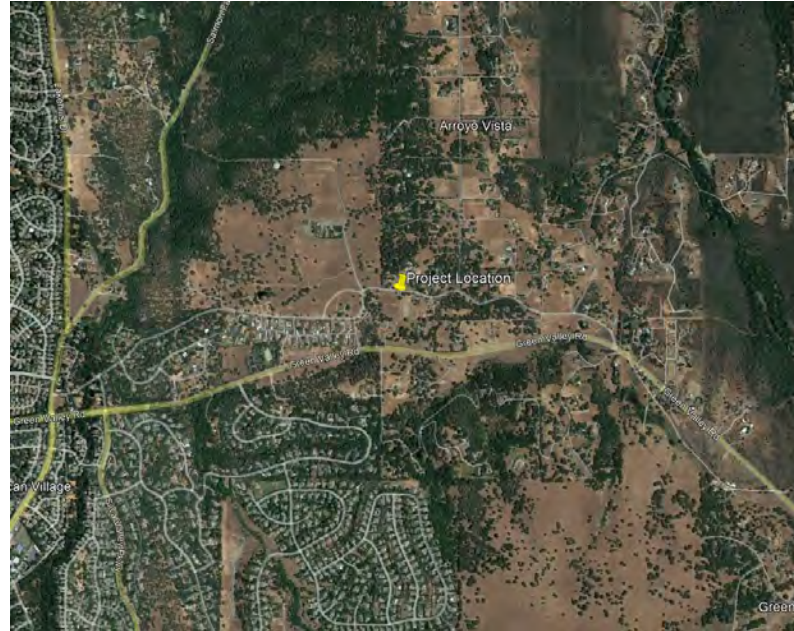
## Application Timeline

August 2021-August 2022	Verizon Wireless identified a gap in service east of El Dorado Hills as part of a larger project to improve service in El Dorado County; designated search ring for required coverage and capacity relief
August-November 2022	Verizon Wireless investigated a three-square mile area for a feasible location to fill the coverage gap; 13 potential candidates reviewed in depth
April 28, 2023	Filed application
May-December 2023	Responded to County requests for information, including investigation of additional alternative locations proposed by members of the public
January 2, 2024	County determined application complete
February 5, 2024	Technical Advisory Committee (TAC) meeting
February-June 2024	Verizon reviewed further alternatives in response to public comment and submitted updated Alternatives Analysis
June 13, 2024	Planning Commission hearing



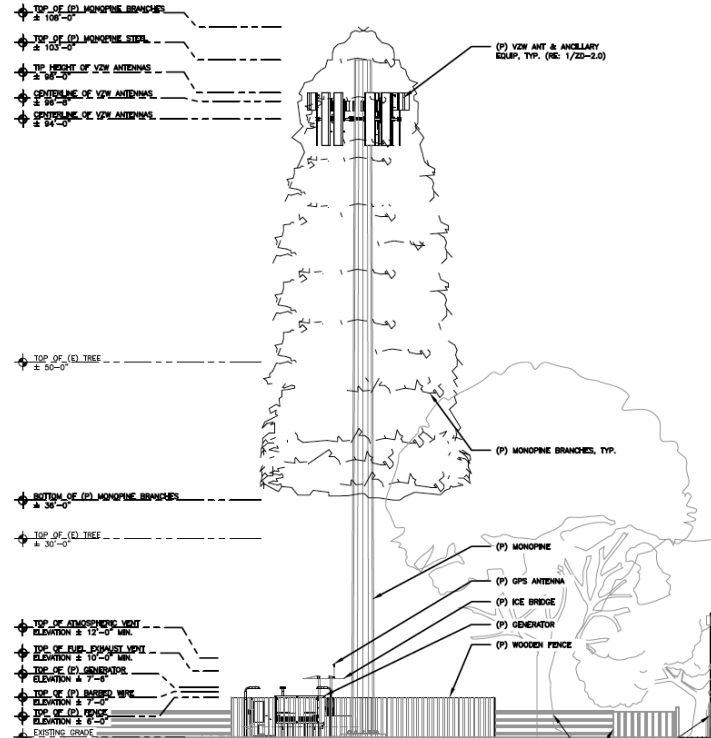
## Project Location

- 1495 Malcolm Dixon Road
- 5-acre parcel
- Closest residence 260 feet east
- Planned developments to west
- Low-density residential to north, east, and south



# Project Design

- 108-foot tower facility camouflaged as pine tree
- 1,600-square foot network equipment area surrounded by 6-foot wood fence
- Standby generator for service during emergencies
- Room for collocation by additional wireless carriers



## Photosimulations

- Four viewpoints, from 250', 400', 700', and 900' away
- A high-resolution photo is taken
- The surrounding terrain is modeled from aerial photos, topographical data, and survey data, and the height of the facility is calculated
- The simulated model is superimposed on the original photo



## Photosimulations

*Looking southeast from Malcolm Dixon Road, about 250' away*



## Photosimulations

*Looking west from Malcolm Dixon Road, about 700' away*



## Photosimulations

*Looking North from Green Valley Road, about 900' away*





## Photosimulations

*Looking North from adjacent property, about 400' away*



## Alternative Designs

*Mono-eucalyptus*



*Mono-broadleaf*




## Complies with FCC Guidelines

- Dtech Communications engineer confirmed that radio frequency exposure will be less than FCC public limit

• 0.6% at ground level

- Denial based on RF exposure preempted by federal law (47 U.S.C. § 332(c)(7)(B)(iv))



YOUR RF SAFETY PARTNER

RADIO FREQUENCY ELECTROMAGNETIC FIELDS EXPOSURE REPORT

PRI: Activation  
Prepared for Verizon

Site Name: Green Valley Rd  
Site ID: 5000888302  
Site Type: Monopole

Located at:  
3495 Malcolm Dixon Rd  
El Dorado Hills, CA 95762  
Latitude: 38.718753 / Longitude: -121.058642

Report Date: 2/20/2024  
Report By: Christopher Stollar, P.E.

Based on FCC Rules and Regulations, Verizon is compliant.

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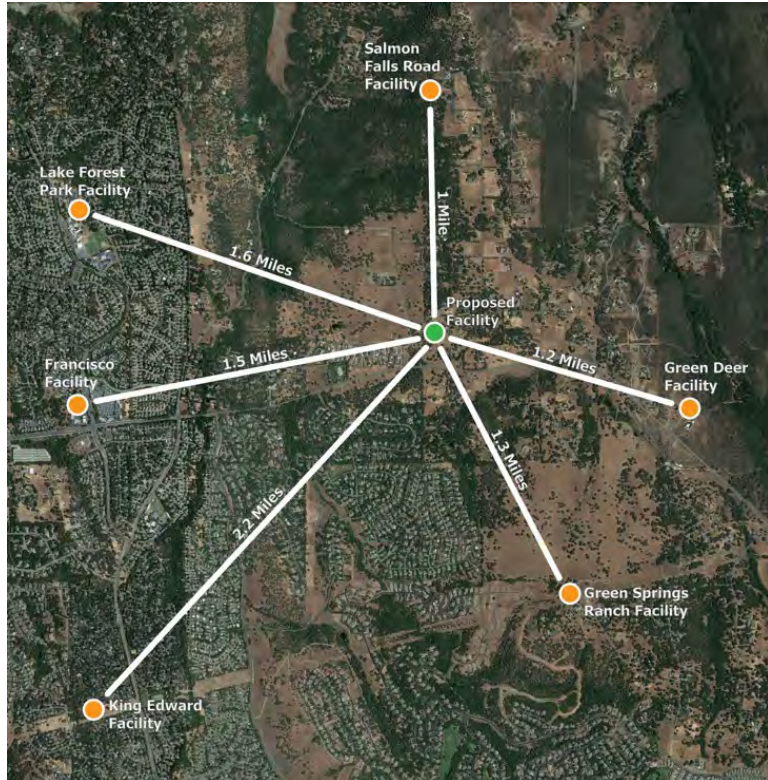
## Complies with County Noise Limits

- **Bollard Acoustical Consultants confirmed that noise will be less than County General Plan rural noise limits**
  - Cabinet noise level no more than 35 dBA, less than 40 dBA nighttime hourly limit
  - Generator noise level no more than 53 dBA, less than 60 dBA daytime maximum limit
  - Generator runs only in emergencies and for 15-minutes twice per month for exercise



## Network Map

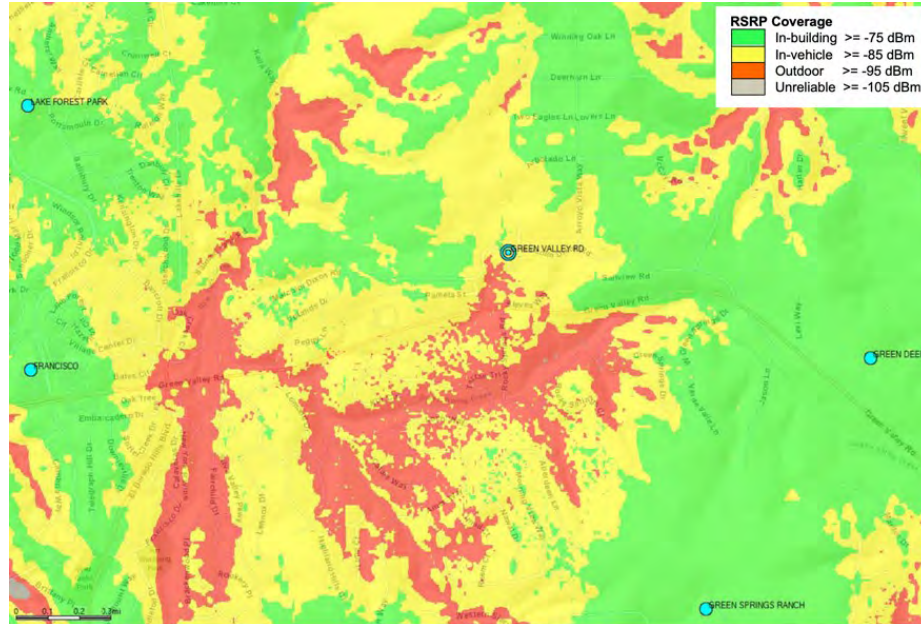
- Closest existing Verizon Wireless facility 1 mile north
- Topography results in service gap from Lake Forest Park Facility
- Gap in coverage
- Lack of dominant signal, leading to dropped calls and poor service
- Existing facilities suffering from network exhaustion



# Coverage Gap

- Gap in low-band 700 MHz in-building coverage, including Arroyo Vista and Highland Hills areas
- Gap in in-vehicle service along Green Valley Road and other local roads, over 16,831 daily vehicle trips

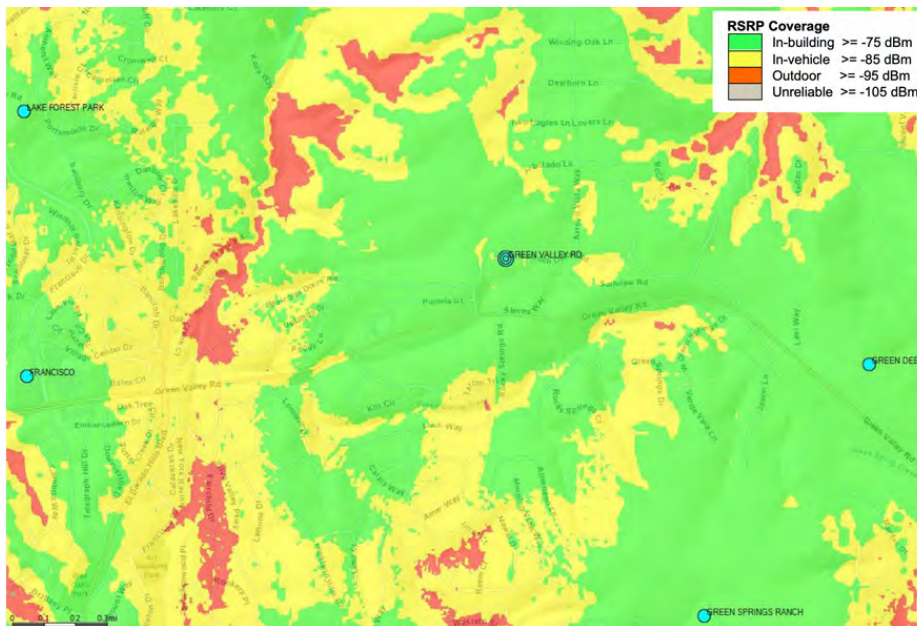
Existing 700 MHz Coverage



## Improved Service

- New in-building coverage to 0.75 square miles, including residential areas
- New in-vehicle service along local roadways

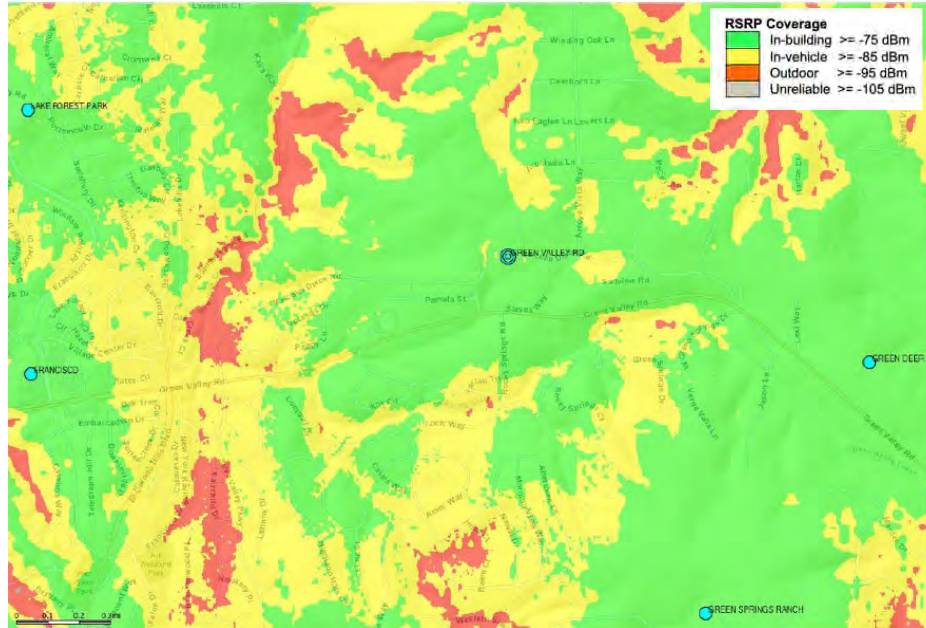
*Proposed 700 MHz Coverage (94-foot antennas)*



## Lower Height Reduces Coverage

- Lowering 10 feet to 84-foot antenna centerline reduces coverage 10%

700 MHz Coverage (84-foot antennas)

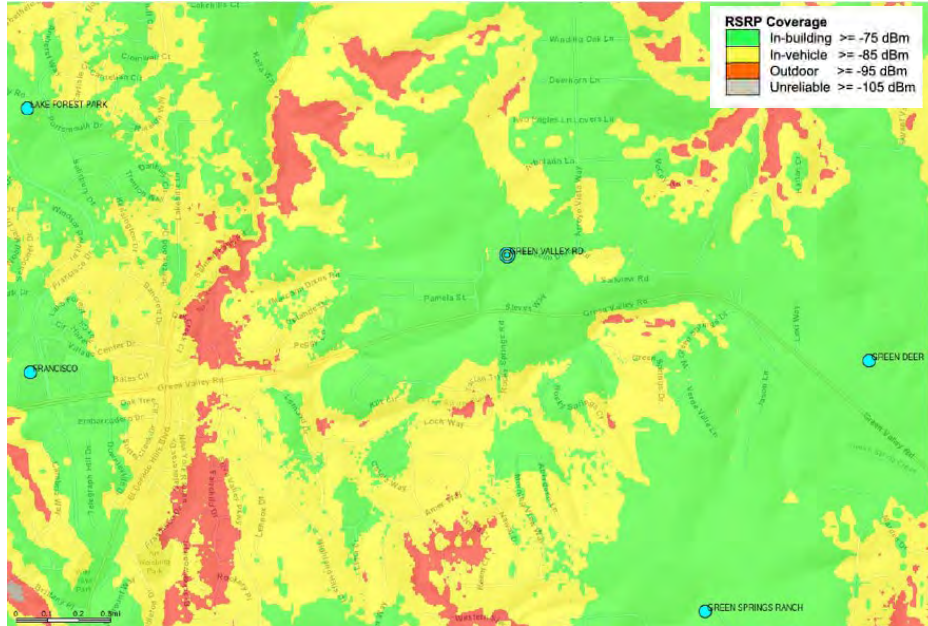




# Lower Height Reduces Coverage

- Lowering 20 feet to 74-foot antenna centerline reduces coverage 29%

700 MHz Coverage (74-foot antennas)



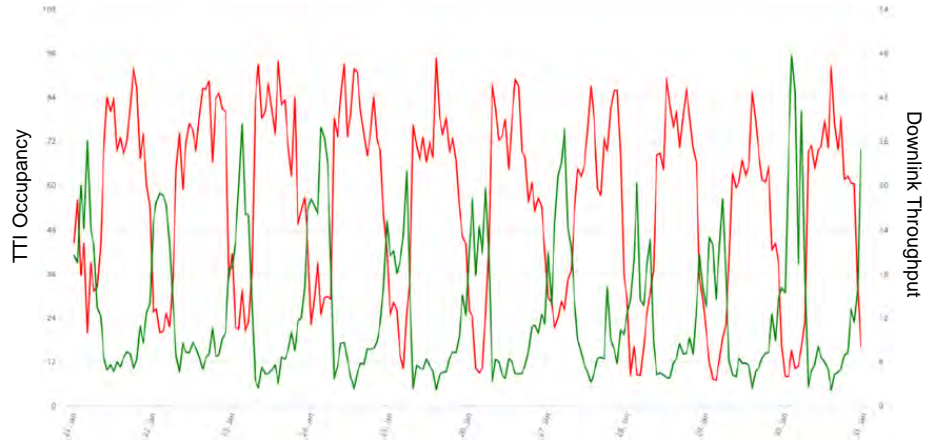
# Increased Demand Causing Capacity Exhaustion

- High demand causing nearby facilities to reach data capacity
- Data speeds drop accordingly, reducing network reliability, accessibility, and call quality

- TTI Occupancy  
*Percent of data resources used*
- Downlink throughput  
*Data speed in megabits/second*



Lake Forest Park Facility, Southeast Antenna Sector  
January 21-30, 700 MHz Band



## Best of 24 Alternatives

- Other locations discounted because:
  - Cannot serve gap
  - Owner opposed or no interest
  - Taller facility required, visual impact
  - Lack of buildable space
  - Access issues



# Principal Factors That Discount Alternatives

		Cannot serve gap	Owner opposition, disinterest	Taller facility required Visual impact	Lack of buildable space	Access issues
1	LDS Church		X			
2	EID Water Tank	X				
3	Proposed Facility					
4	Campbell	X				
5	Wilson Estates 1				X	X
6	Wilson Estates 2			X	X	
7	Nayeb			X		
8	Vineyards at El Dorado				X	
9	Diamante	X				
10	Miller		X			
11	Barranti		X			
12	Mette		X			
13	Blake		X			
14	Pierman		X			
15	Ulrich		X			
16	Spencer	X				
17	Diel	X				
18	Mueller		X			
19	Shupe		X			
20	Osborne	X				
21	Rocky Springs Road					X
22	Assouni		X			
23	Saint John		X			
24	Lissner			X		



## Response to Opposition

- **OBJECTION: Appearance of facility**
  - *Pine tree design minimizes visual impact, set back 50 feet from road*
- **OBJECTION: Impact on property values**
  - *Not a factor in County Code for a wireless facility use permit*
  - *Joint Venture Silicon Valley report confirms no impact on property values*
- **OBJECTION: Fire risk**
  - *Fire safety confirmed by local fire department during building permit process*
  - *Double-walled generator fuel tank mounted on a concrete pad*
  - *Generator provides 72 hours of continued power for communication during emergencies, CPUC requirement for high fire threat districts*



# Response to Opposition

- **OBJECTION: Noise**

- *Bollard Acoustical Consultants confirmed compliance with County noise limits*

- **OBJECTION: RF Emissions**

- *Dtech Communications confirmed compliance with FCC RF exposure guidelines*
- *Federal law preempts County consideration of alleged effect on environment*

## Meets County Wireless Standards

- **Designed to facilitate future co-location** (§ 130.40.130(A)(1)(b))
  - *Tower and equipment area will have space for additional wireless carriers, minimizing need for additional towers in area*
- **Blends with the surrounding area, with stealth technology** (§ 130.40.130(D)(1))
  - *Tower disguised as pine tree, with faux branches enclosing antennas*
- **Allowed in residential zone** (§ 130.40.130(B)(7))
  - *Conditional use permit allows wireless facility in residential zones*



## Meets Zoning Standards

- **Complies with setbacks** (§ 130.24.030)
  - *50 feet from Malcolm Dixon Rd, where 30 feet required*
  - *35 feet from side property line, where 30 feet required*
- **Satisfies findings for conditional use permit** (§ 130.52.021(C))
  - *Not detrimental to health, safety or welfare, as facility will comply with FCC RF exposure limits, and will enhance connectivity for emergencies*
  - *Not injurious to neighborhood because camouflage design minimizes visual impact*





## **Conclusion: Affirm Staff Recommendation**

- **New facility needed for reliable service and public safety**
- **Complies with all County requirements for approval**
- **Expert available for questions**
  - **Kevin Gallagher, Complete Wireless Consulting**
  - **Ericson Malana, Verizon Wireless RF Engineer**
  - **Jeremy Stroup, Verizon Wireless Municipal Engagement**
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