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PC 1/25/2024

ITEM #3

24 PAGES

# Golden Foothills

**El Dorado County Planning Commission**

January 25, 2024

**Melissa Vios, Epic Wireless**  
**Ericson Malana, Verizon Wireless RF Engineer**

**verizon**

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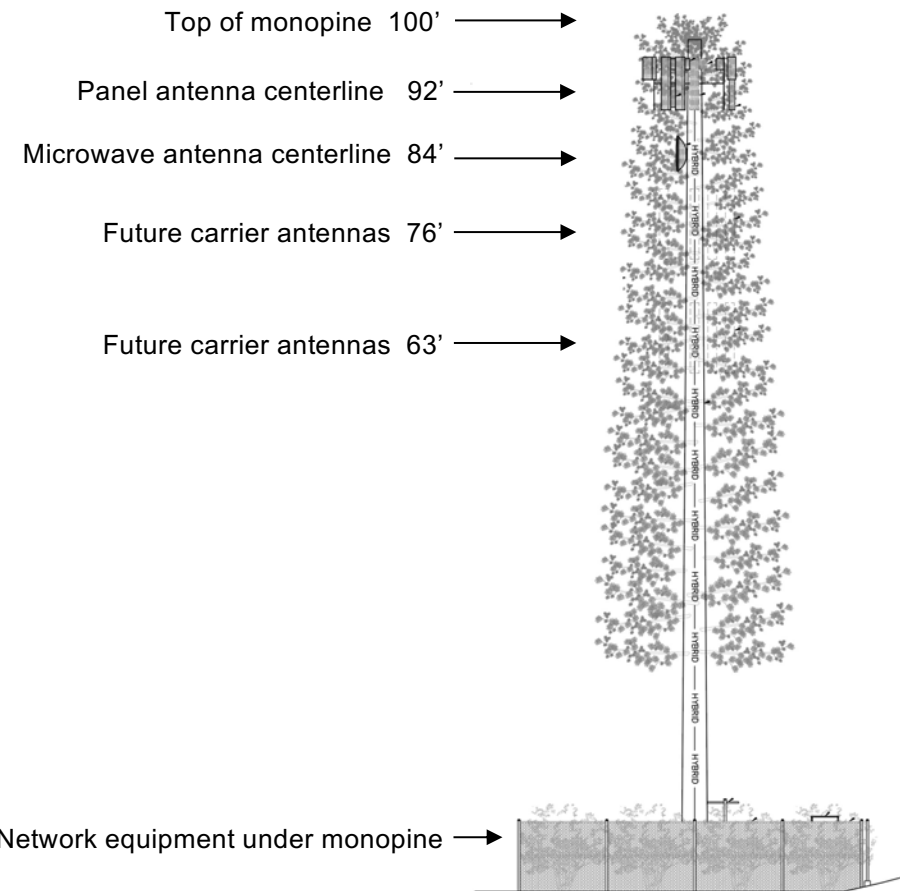
# Application Timeline

2020	Verizon Wireless identified a gap in service in south El Dorado Hills
2020-2022	Investigated 30 alternative locations
March 31, 2023	Filed application
April–May 2023	Responded to County requests for information
June 8, 2023	County determined application was complete
July 24, 2023	Technical Advisory Committee (TAC) meeting
December 14, 2023	First Planning Commission hearing; continued
January 25, 2024	Second Planning Commission hearing



# Facility Design

- 100-foot tower camouflaged as pine tree
- Panel antennas at 92-foot centerline
- Microwave antenna at 84-foot centerline
- Future carrier antennas at 76-foot and 63-foot centerlines
- Network equipment in 1,305-square foot fenced area under monopine



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# Photosimulations

## View Southwest from Hillsdale Circle



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# Photosimulations

Photosimulation of the view looking west along Robert J Mathews Pkwy.





# Photosimulations

Photosimulation of the view looking north-northeast along Carson Crossing Road.



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# Photosimulations

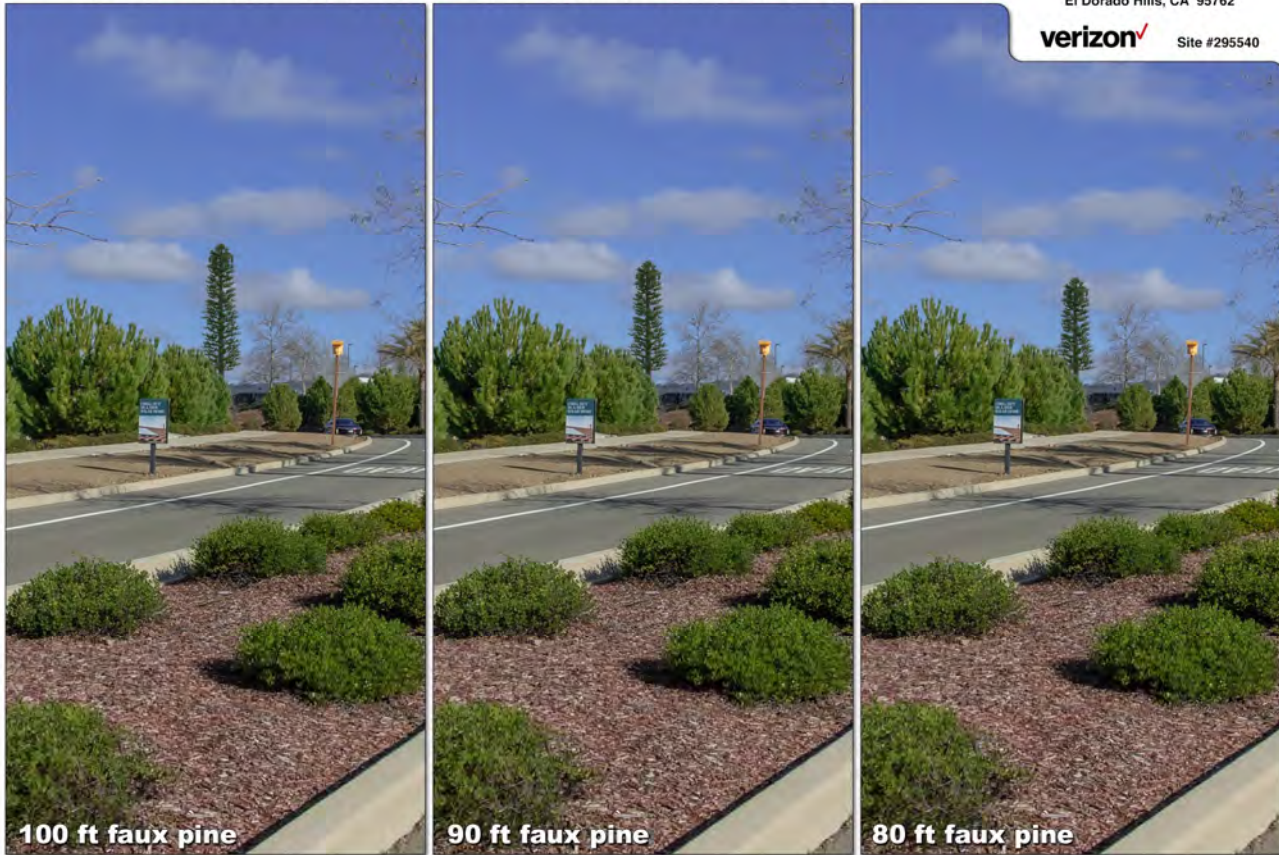
Version Date: January 21, 2024

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Photosimulation of the comparative heights in the view looking northeast along Carson Crossing Drive.

**Golden Foothills**  
4994 Hillsdale Circle  
El Dorado Hills, CA 95762

**verizon** Site #295540



100 ft faux pine

90 ft faux pine

80 ft faux pine

**verizon**

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# Photosimulations

Photosimulation of the comparative heights in the view looking southeast from Pacifico Lane at Tortola Lane.

**Golden Foothills**  
4994 Hilledale Circle  
El Dorado Hills, CA 95762

**verizon** Site #295540



100 ft faux pine

90 ft faux pine

80 ft faux pine





# Photosimulations

Version Date: January 21, 2024

310

Photosimulation of the comparative heights in the view looking northwest along Hillsdale Circle.

## Golden Foothills

4994 Hillsdale Circle  
El Dorado Hills, CA 95762



Site #295540



100 ft faux pine



90 ft faux pine



80 ft faux pine

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# Complies with FCC Guidelines

- **Waterford Consultants engineer confirmed that radio frequency exposure will be less than FCC public limit**
  - 15.02% at ground level
- **Denial based on RF exposure preempted by federal law (47 U.S.C. § 332(c)(7)(B)(iv))**



Radio Frequency Emissions Compliance Report For Verizon Wireless			
Site Name:	Golden Foothills	Site Structure Type:	Monopole
Address:	4994 Hillside Circle	Latitude:	38.62461
	EI Dorado Hills, CA 95762	Longitude:	-121.06307
Report Date:	September 9, 2022	Project:	Modification

#### Compliance Statement

Based on information provided by Verizon Wireless and predictive modeling, the Golden Foothills installation proposed by Verizon Wireless will be compliant with Radiofrequency Radiation Exposure Limits of 47 C.F.R. §§ 1.1307(b)(3) and 1.1310. The proposed operation will not expose members of the General Public to hazardous levels of RF energy at ground level or in adjacent buildings. As predicted RF power densities will not exceed the FCC General Population limits, no mitigation action other than restricting access to the tower is required to achieve or maintain compliance.

#### Certification

I, David C. Cotton, Jr., am the reviewer and approver of this report and am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commission (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation, specifically in accordance with FCC's OET Bulletin 65. I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.



*David Charles Cotton, Jr.*  
David Charles Cotton, Jr.  
Registered Professional Engineer (Electrical)  
State of California, 18838

#### General Summary

The compliance framework is derived from the Federal Communications Commission (FCC) Rules and Regulations for preventing human exposure in excess of the applicable Maximum Permissible Exposure ("MPE") limits. At any location at this site, the power density resulting from each transmitter may be expressed as a percentage of the frequency-specific limits and added to determine if 100% of the exposure limit has been exceeded. The FCC Rules define two tiers of permissible exposure differentiated by 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. Based on the criteria for these classifications, the FCC General Population limit is considered to be a level that is safe for continuous exposure time. The FCC General Population limit is 5 times more restrictive than the Occupational limits.

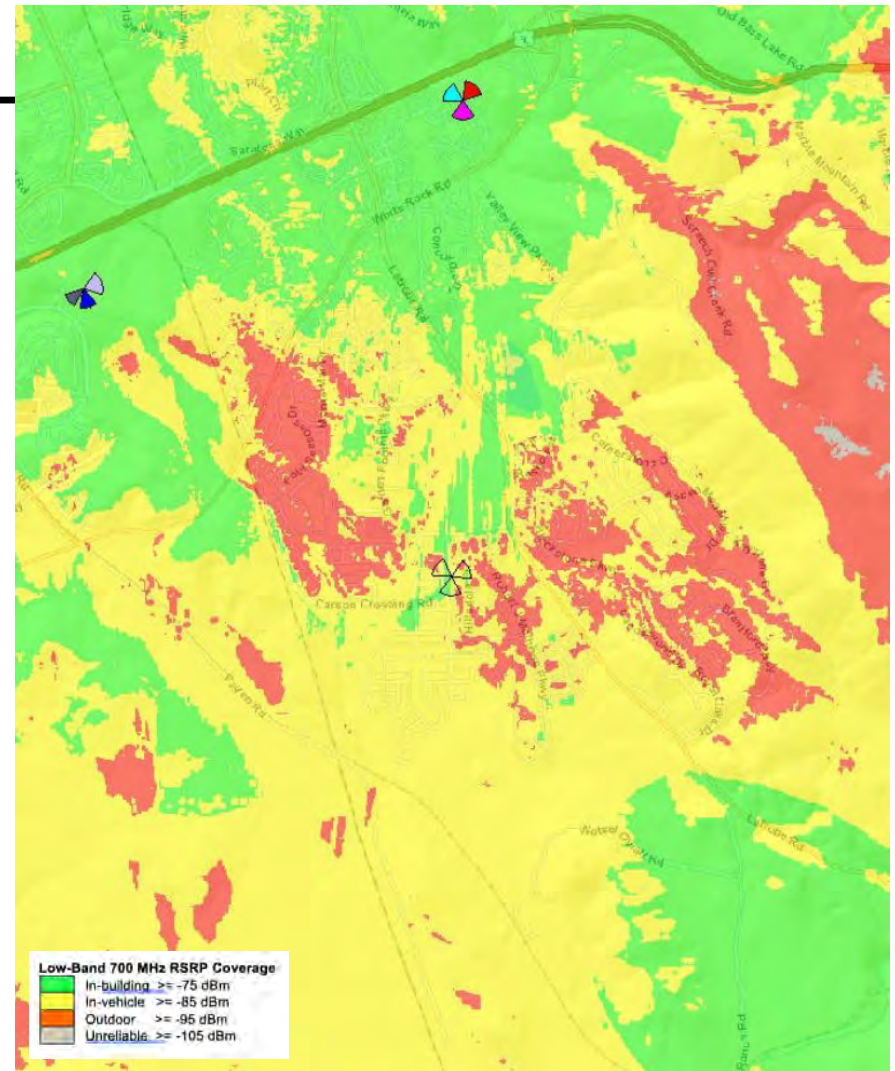
In situations where the predicted MPE exceeds the General Population threshold in an accessible area as a result of emissions from multiple transmitters, FCC licensees that contribute greater than 5% of the aggregate MPE share responsibility for mitigation.



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## Coverage Gap

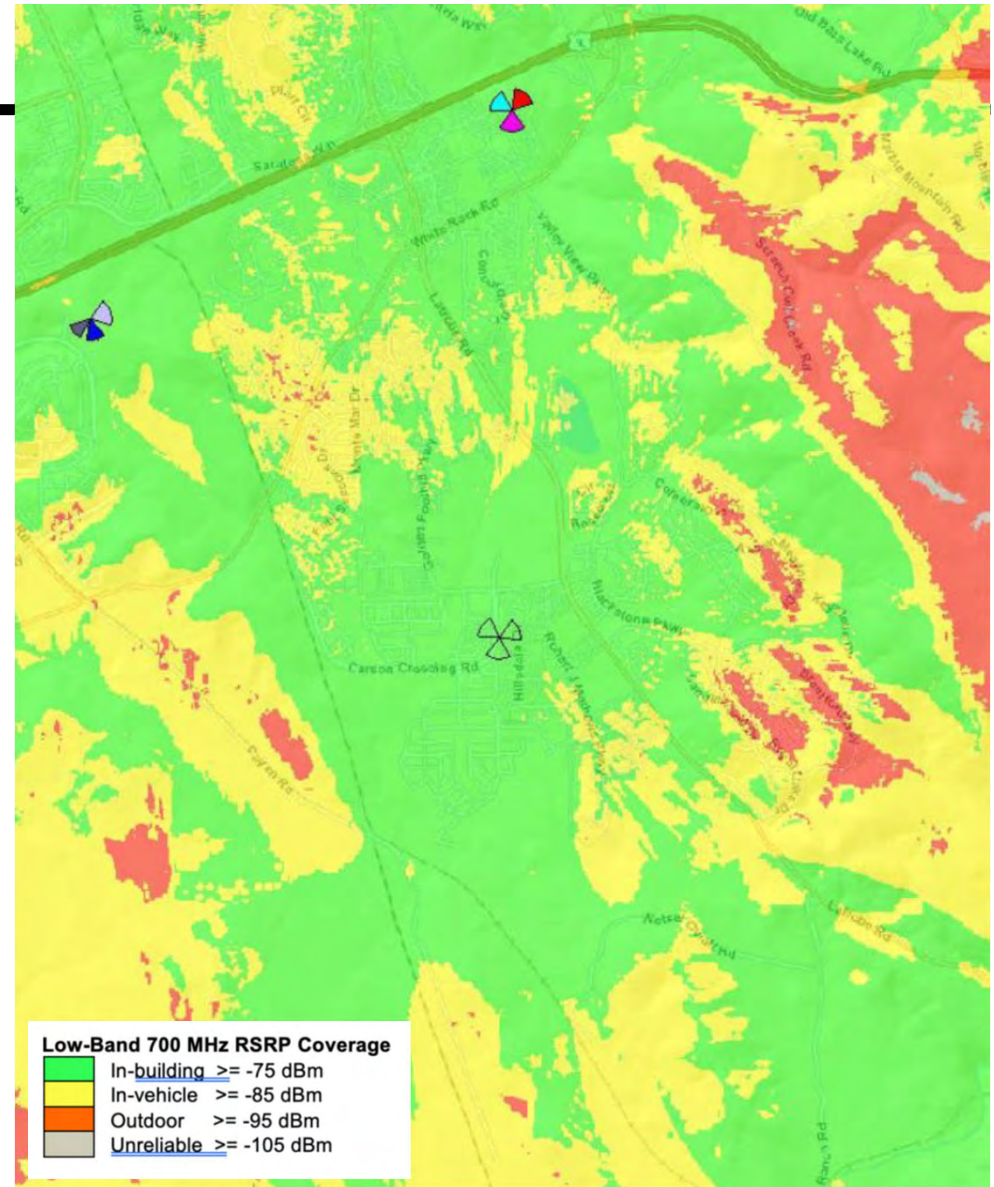
- Gap in in-building coverage in Heritage and Blackstone neighborhoods, and El Dorado Hills Business Park
- Gap in in-vehicle coverage along White Rock Road and other local roadways
- Existing facilities over two miles distant have reached capacity exhaustion
- Unreliable service and slow data speeds in gap area





## Improved Service

- Facility optimally located at elevated location near center of gap
- New in-building service to 4.3 square miles with population of 1,556
- New in-vehicle service to additional 1.0 square miles
- Offloads exhausted existing facilities, improving service in greater area





# Network Map

- Existing facilities at least two miles distant



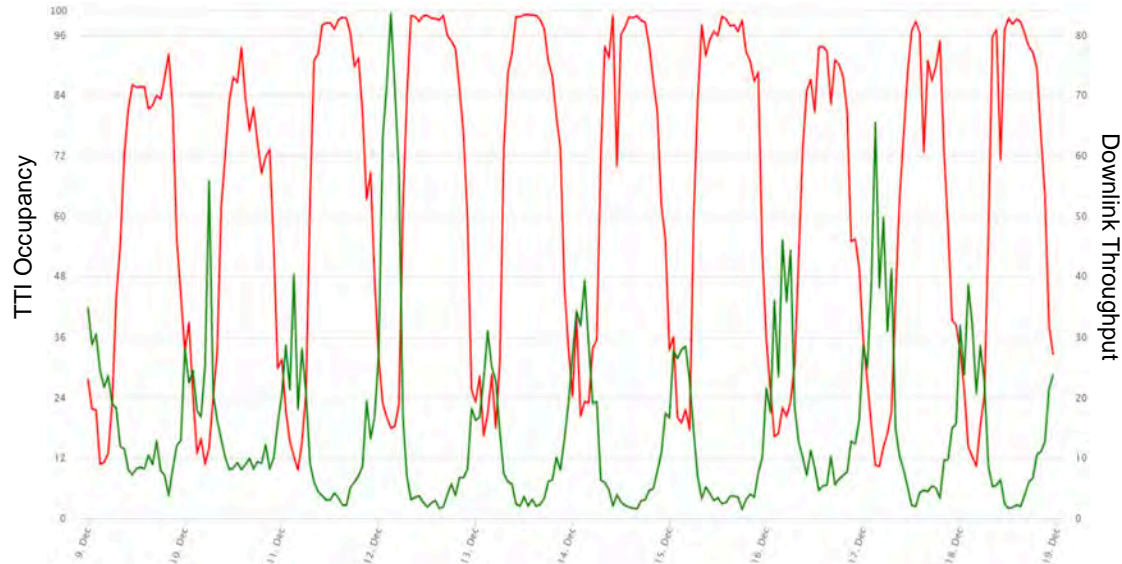
# Increased Demand Causing Capacity Exhaustion

- Demand on nearby facilities reaching 100% of 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*

*Silva Valley Parkway, South-Facing Antenna Sector  
December 9–18, 700 MHz Band*



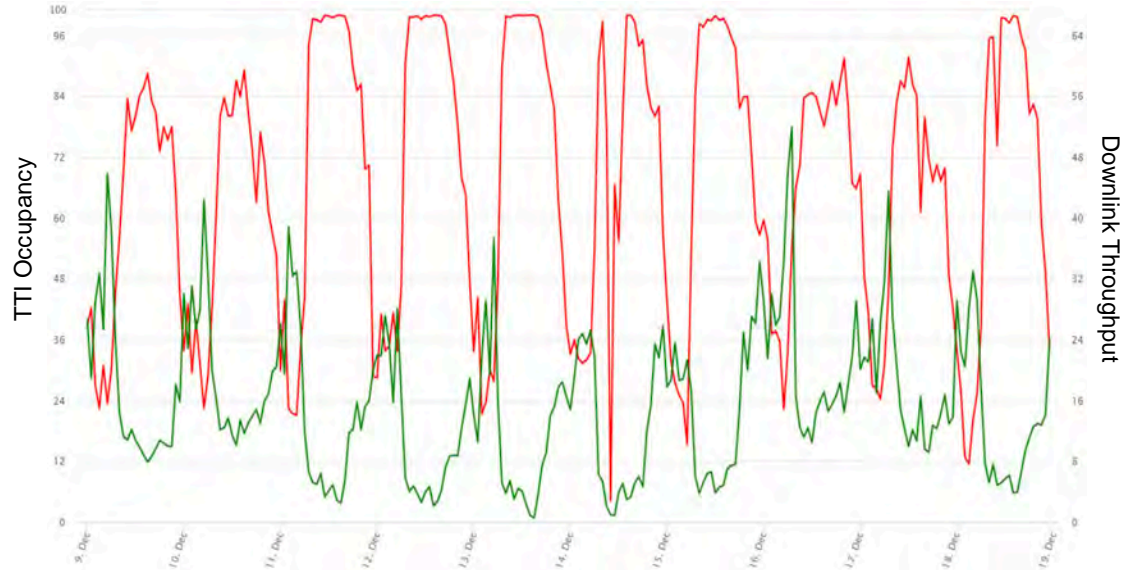
# Increased Demand Causing Capacity Exhaustion

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**— TTI Occupancy**  
*Percent of data resources used*

**— Downlink throughput**  
*Data speed in megabits/second*

*New Hillsdale Facility, Northwest-Facing Antenna Sector  
December 9–18, 700 MHz Band*



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# Lowering Height Reduces Coverage Area

- Lowering the antenna centerline 30 feet causes reduction in coverage over 20%

Antenna Centerline (Feet)	New In-Building Service >= -75 dBm				New In-Vehicle Service >= -85 dBm	
	Square Miles	Reduction	Population	Reduction	Square Miles	Reduction
92	4.38		1,556		1.00	
82	4.00	91%	1,428	92%	0.88	88%
72	3.55	81%	1,334	86%	0.79	79%
62	3.22	74%	1,199	77%	0.75	75%

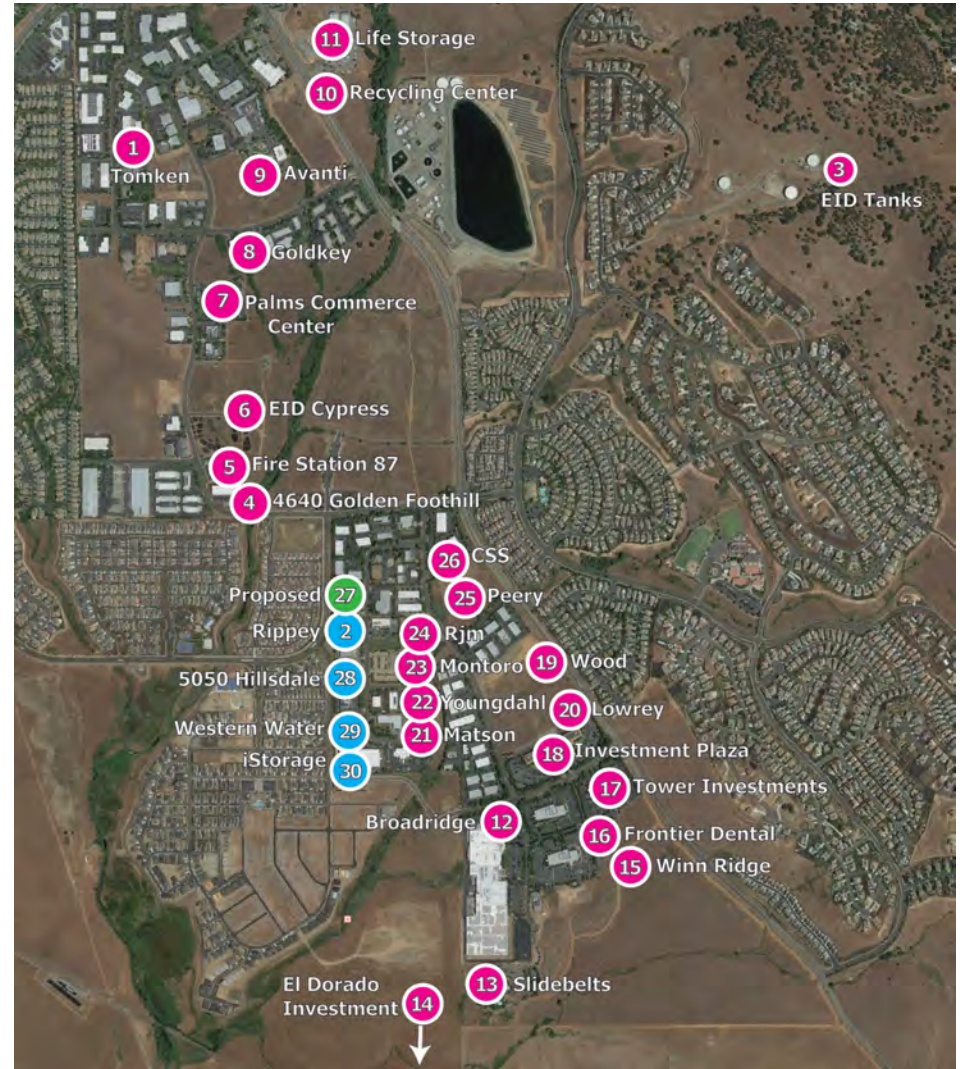


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# Best of 30 Alternatives

Principal factors to discount alternatives:

- Lack of landlord interest
- Cannot serve gap due to distance and/or low elevation
- Proposed Facility

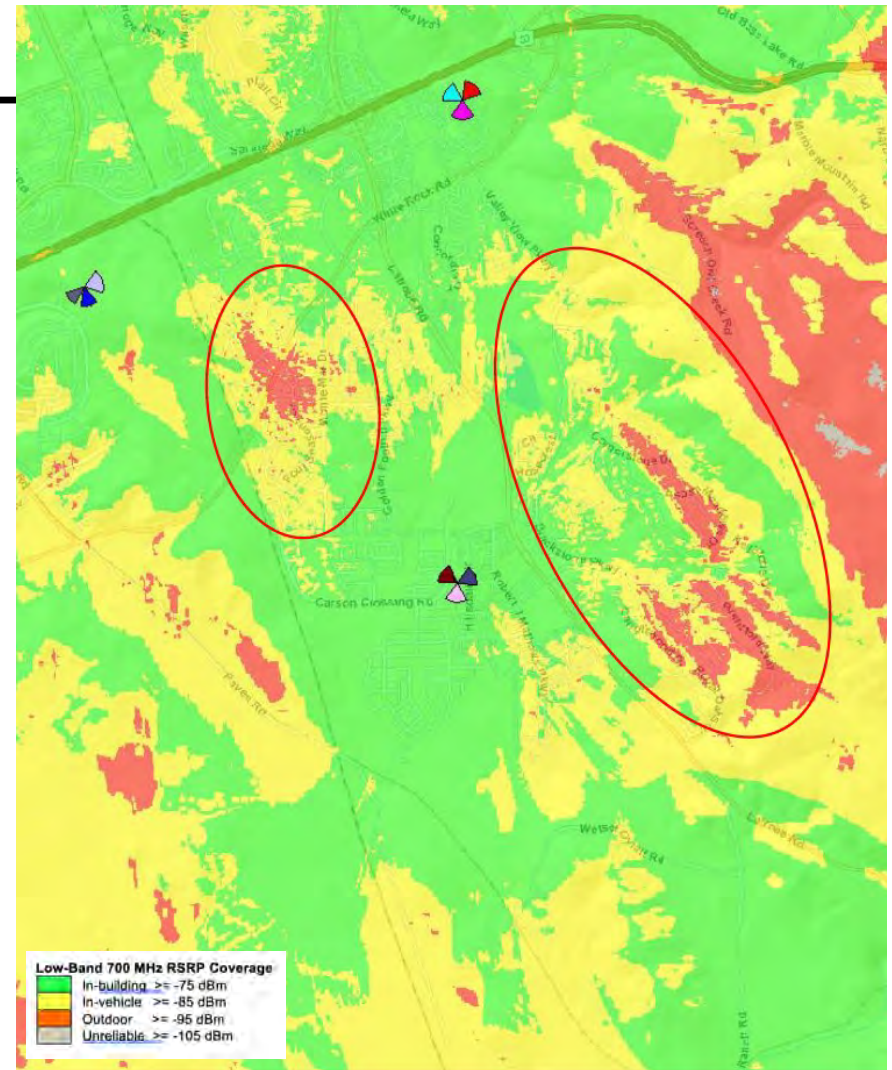


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## Building-Mounted Alternative Too Low

### Alternative 2 – Rippey

- On roof of building due south
- Rooftop facility limited to 50-foot height in R&D zone per Code
- Loss of coverage around White Rock Road and in Blackstone neighborhood

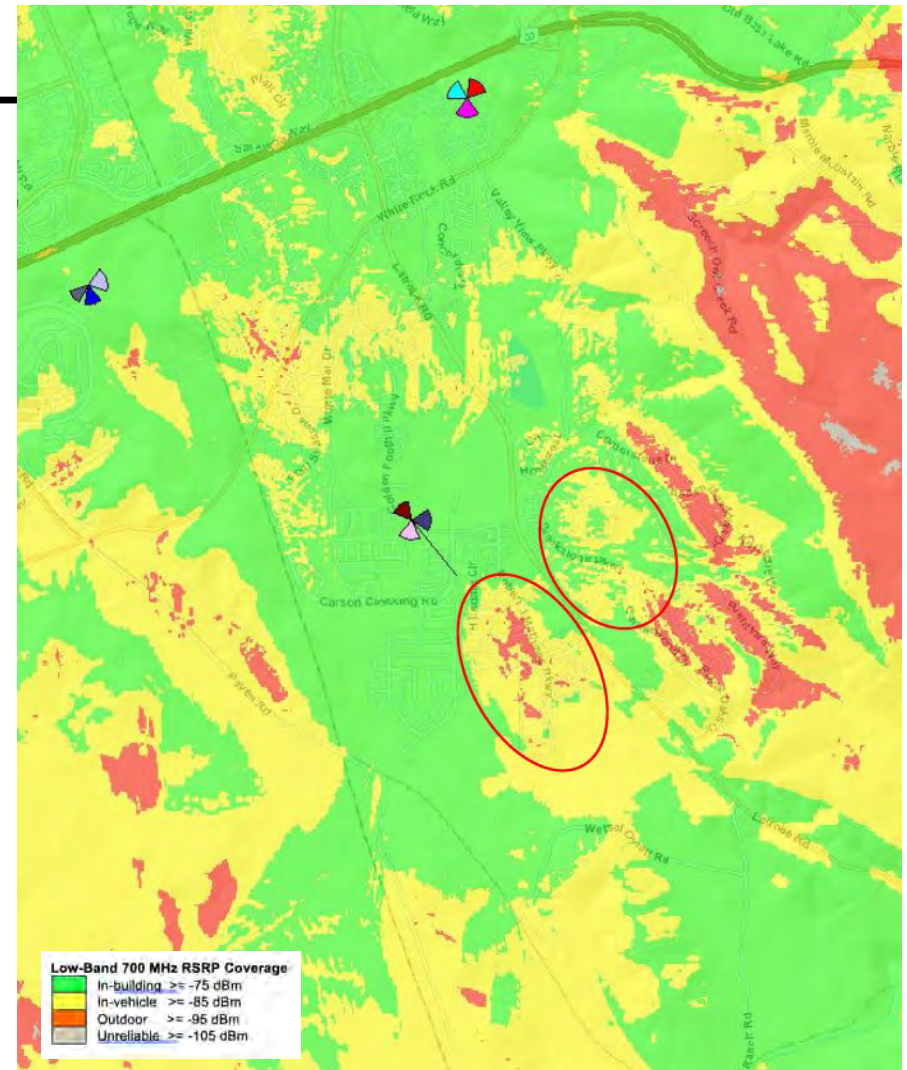




## Most Alternatives too Distant

### Alternative 4 – 4640 Golden Foothill

- 0.3 miles northwest
- 30 feet lower in elevation
- Loss of coverage to Blackstone neighborhood and south El Dorado Hills Business Park

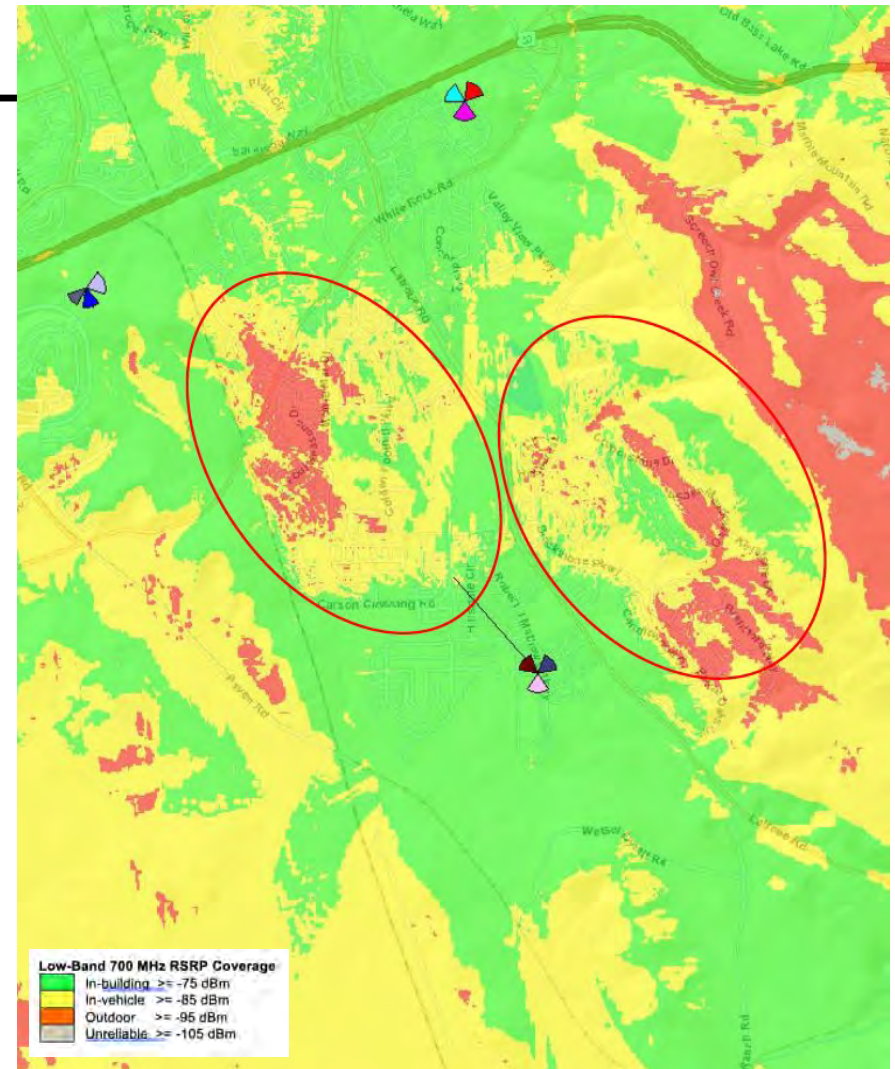


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## Most Alternatives too Distant

### Alternative 13 – Broadridge

- 0.5 miles southeast
- 30 feet lower in elevation
- Loss of coverage around White Rock Road, and Heritage and Blackstone neighborhoods



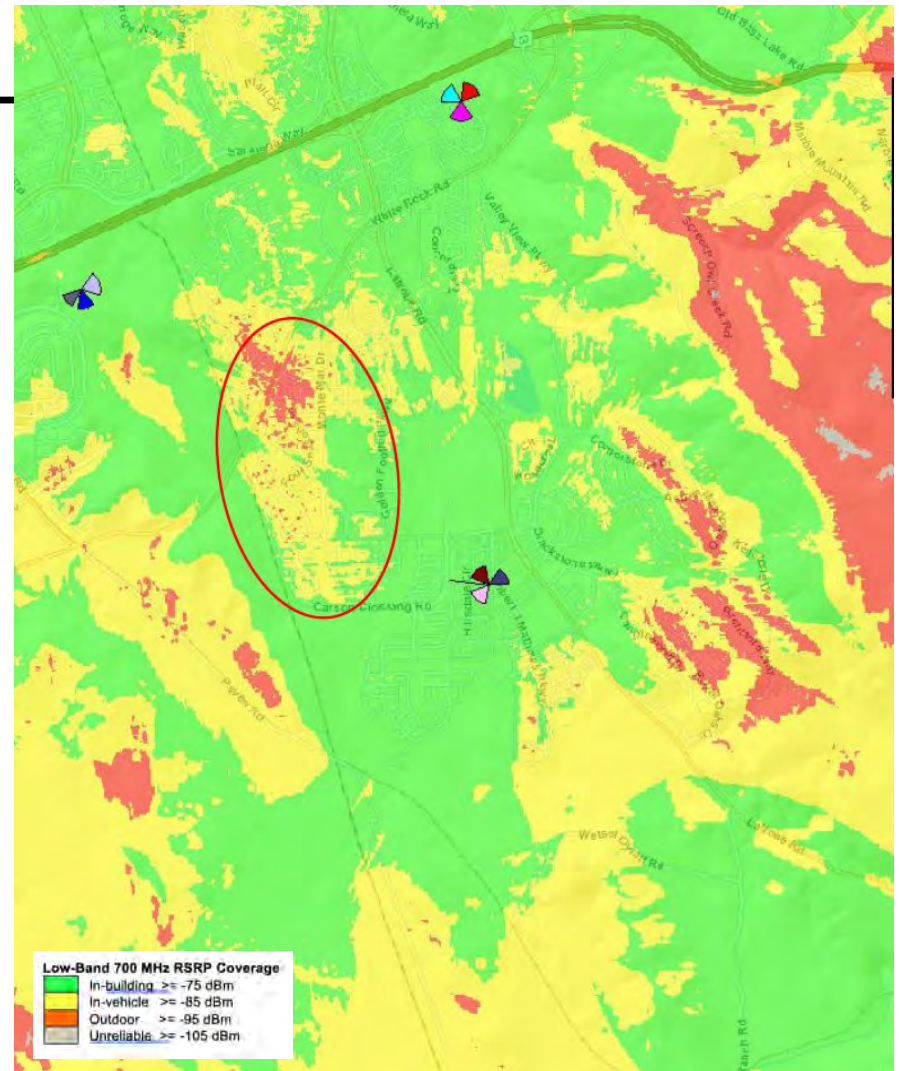


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## Most Alternatives too Distant

### Alternative 24 – Rjm Property

- 0.15 miles east
- 15 feet lower in elevation
- Loss of coverage around White Rock Road, and west Heritage neighborhood



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## Meets County Wireless Standards

- **Designed to facilitate future co-location** (§ 130.40.130(A)(1)(b))
  - *Tower and equipment area will have space for two additional 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 near residential zone** (§ 130.40.130(B)(7))
  - *Conditional use permit allows facilities within 500 feet of residential zones*

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## Meets Zoning Standards

- **Complies with setbacks** (§ 130.23.030)
  - *Set back 30 feet from rear property line*
- **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*

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## **Conclusion: Affirm Staff Recommendation**

- **New facility needed for reliable service and public safety in south El Dorado Hills**
- **Complies with all County requirements for approval**
- **Expert available for questions**
  - **Melissa Vios, Epic Wireless**
  - **Ericson Malana, Verizon Wireless RF Engineer**

