

**Verizon Wireless
Preliminary Explanation of Best Server Plots and Capacity Data
Proposed Facility, 244 Colgan Avenue, Santa Rosa**

Verizon Wireless's proposed facility will serve a gap in network data capacity, ensuring sufficient capacity to meet rapidly-increasing demand from network users in the vicinity. This includes the adjacent Santa Rosa Marketplace and Village Shops, with over 540,000 square feet of retail space and 2,100 parking spots, the Santa Rosa Avenue business corridor, dense multi-family residential development north of Colgan Avenue, and existing and developing multi-family residential development south of the shopping center. This also includes high-traffic roadways such as the Highway 101 freeway one-quarter mile west with 140,000 average vehicle trips per day, Santa Rosa Avenue with 24,100 trips per day, and other local roads. *CalTrans 2021 Traffic Volumes, Santa Rosa Active Daily Totals 2019.*

This attached best server maps show the areas of dominant signal from each existing Verizon Wireless facility in the area (first map), plus the proposed facility (second map). Dominant signal is the strongest signal from a particular Verizon Wireless facility that is received by a user's wireless device in a particular location. Signal from each facility is shown in a different color. Maps have been prepared for each low-band frequencies (700 MHz), which provide the broadest coverage, and mid-band frequencies (AWS), which provide the most data capacity.

The existing facilities are experiencing data capacity exhaustion in both the low-band and mid-band frequencies, which compromises network performance. When there is high usage of network data during times of great demand, there are fewer resource blocks available per user, as shown by the example chart on the next page. This results in slow data speeds. Existing connections are severely degraded, voice calls may drop, and users attempting to connect to the network are rejected.

The best server maps show how the proposed facility will provide new dominant signal to the local business and residential areas and busy roadways described above. This will increase network data capacity, and ensure reliable service and improve user experience during times of high demand, benefitting business customers, workers, local residents, and emergency personnel. Additionally, the proposed facility will relieve demand on the surrounding Verizon Wireless macro and small cell facilities, allowing them to allocate their data resources to the intended users within the coverage area closer to their locations. This will improve network performance in a greater area.

Increasing network capacity is critical as network users use more data on more wireless devices. According to CTIA's *2023 Annual Survey Highlights*, the data traffic on wireless networks in the United States increased 38 percent from 2021 to 2022—double the prior year's increase. The number of active 5G devices nearly doubled from 2021 to 2022. Such devices include smartphones, tablets, medical devices, building security systems, and vehicle navigation and alert systems. Reliable wireless service is critical for voice communications, streaming data, and other applications.

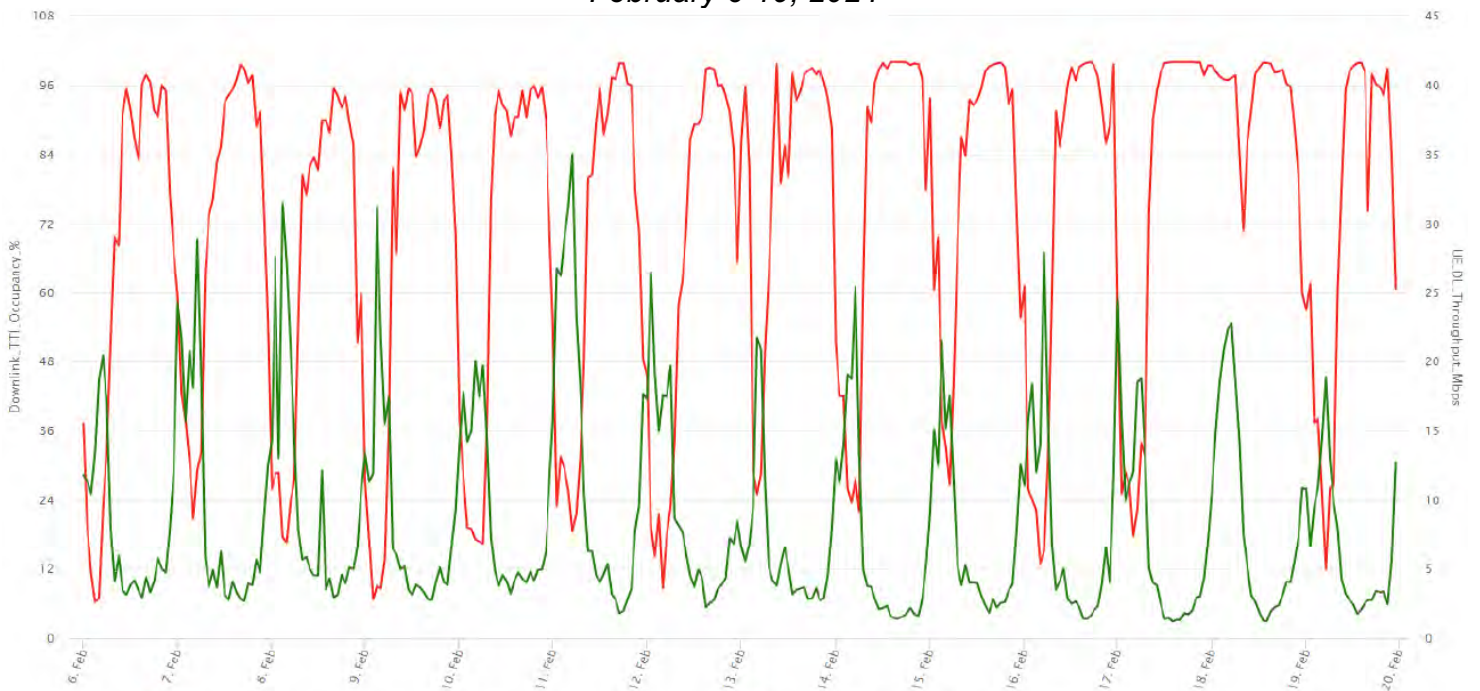
The following chart compares channel TTI occupancy with data throughput during a 10-day period from February 6-19, 2024. This chart shows the TTI occupancy and data throughput of the Roseland facility south-facing antenna sector, which currently serves much of the gap area, in the low-band 700 MHz frequency, which provides the broadest coverage.

— Downlink Channel TTI Occupancy (red line, left axis). This shows the hourly average of the transmission time interval (TTI) occupancy, which is the percentage of an antenna sector’s data resource blocks that is in use within a one-millisecond timeframe. When TTI occupancy exceeds 80 percent, the number of data blocks available per customer is reduced, and data throughput is significantly reduced. When TTI occupancy reaches 100 percent, the data resources are exhausted.

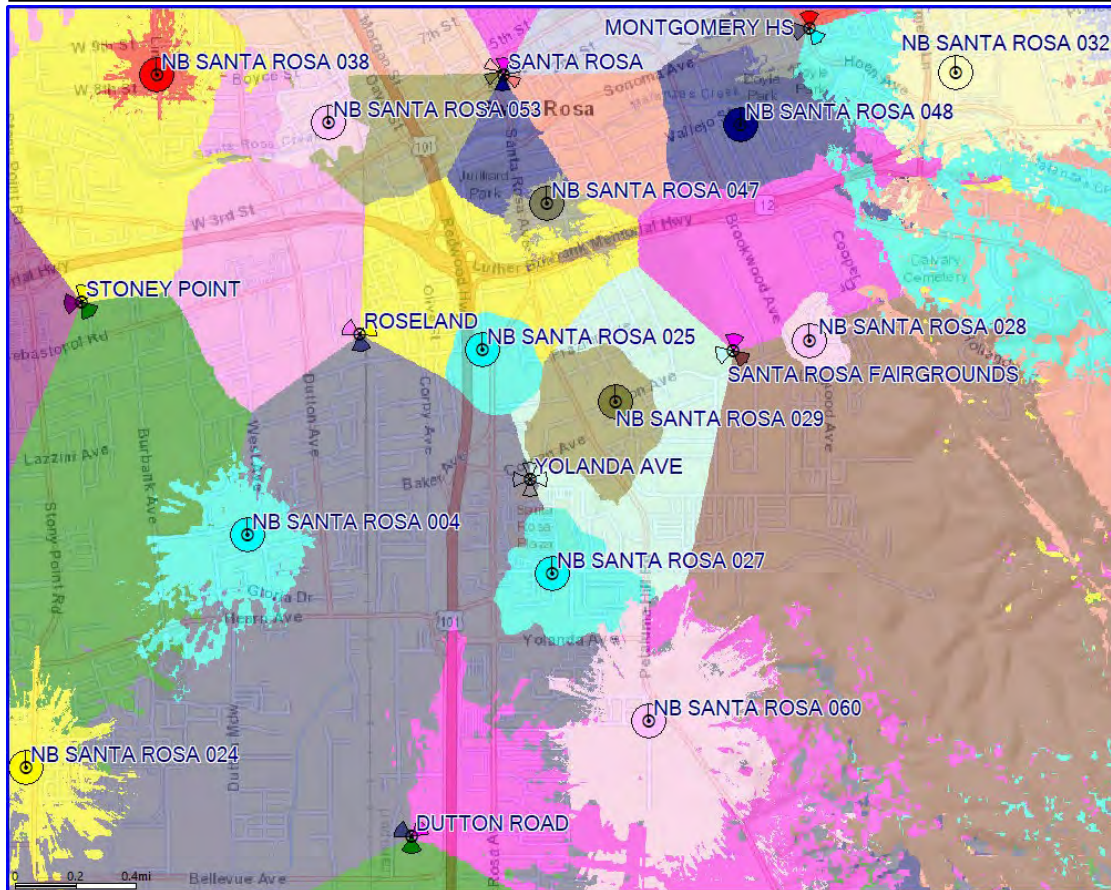
— Downlink Data Throughput (green line, right axis). This shows the hourly average downlink data throughput (download speed) experienced by network users, measured in megabits/second. The FCC defines broadband speed as downlink throughput above 25 megabits/second.

As the TTI occupancy of the Roseland facility south-facing antenna sector spiked over 80 percent during daytime hours each day, reaching 100 percent some days, the data throughput correspondingly fell under 12 megabits/second each day. Data throughput fell under 5 megabits/second on many days, less than 20 percent of broadband speed.

*TTI Occupancy versus Data Throughput
Roseland Facility South-Facing Antenna Sector
Low-Band 700 MHz Frequency
February 6-19, 2024*



Existing 4G-700 Best Server Coverage Map: YOLANDA AVE Site in Santa Rosa



On-Air Site

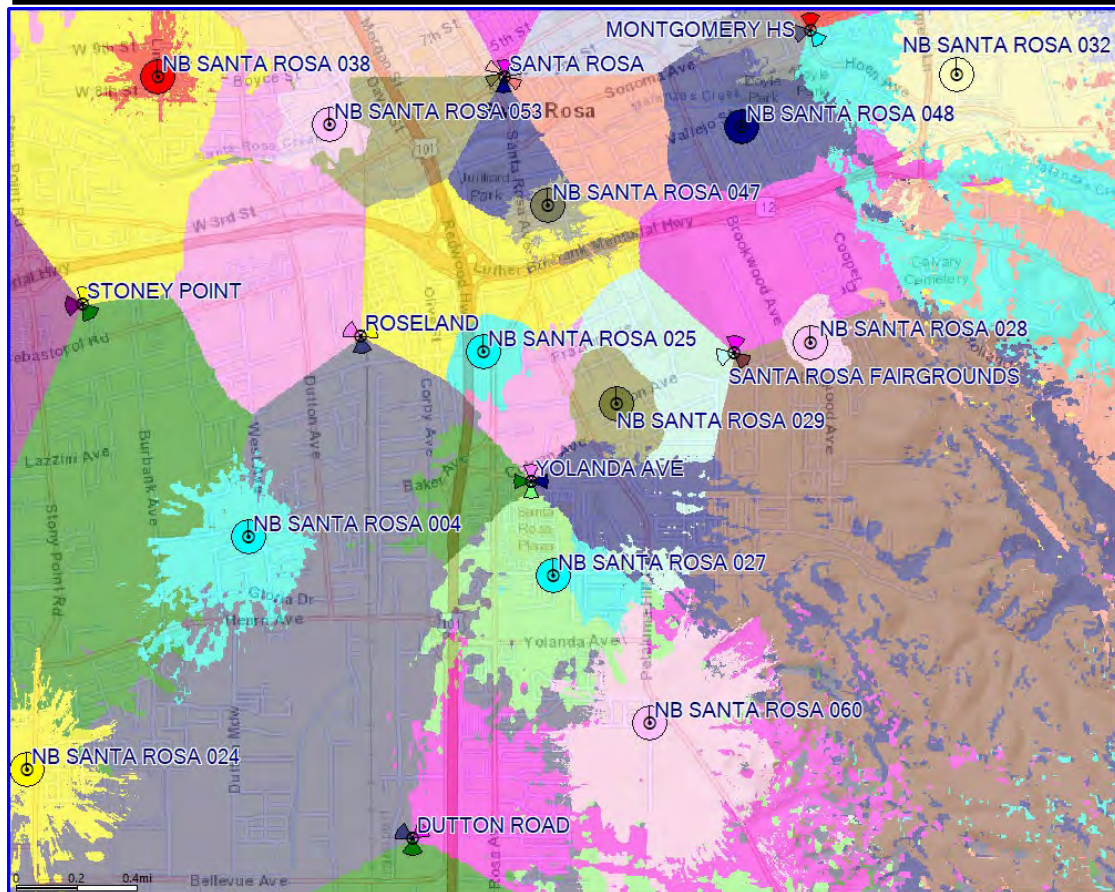
(Existing) New Site

(Proposed)



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Existing+Proposed 4G-700 Best Server Coverage Map: YOLANDA AVE Site in Santa Rosa



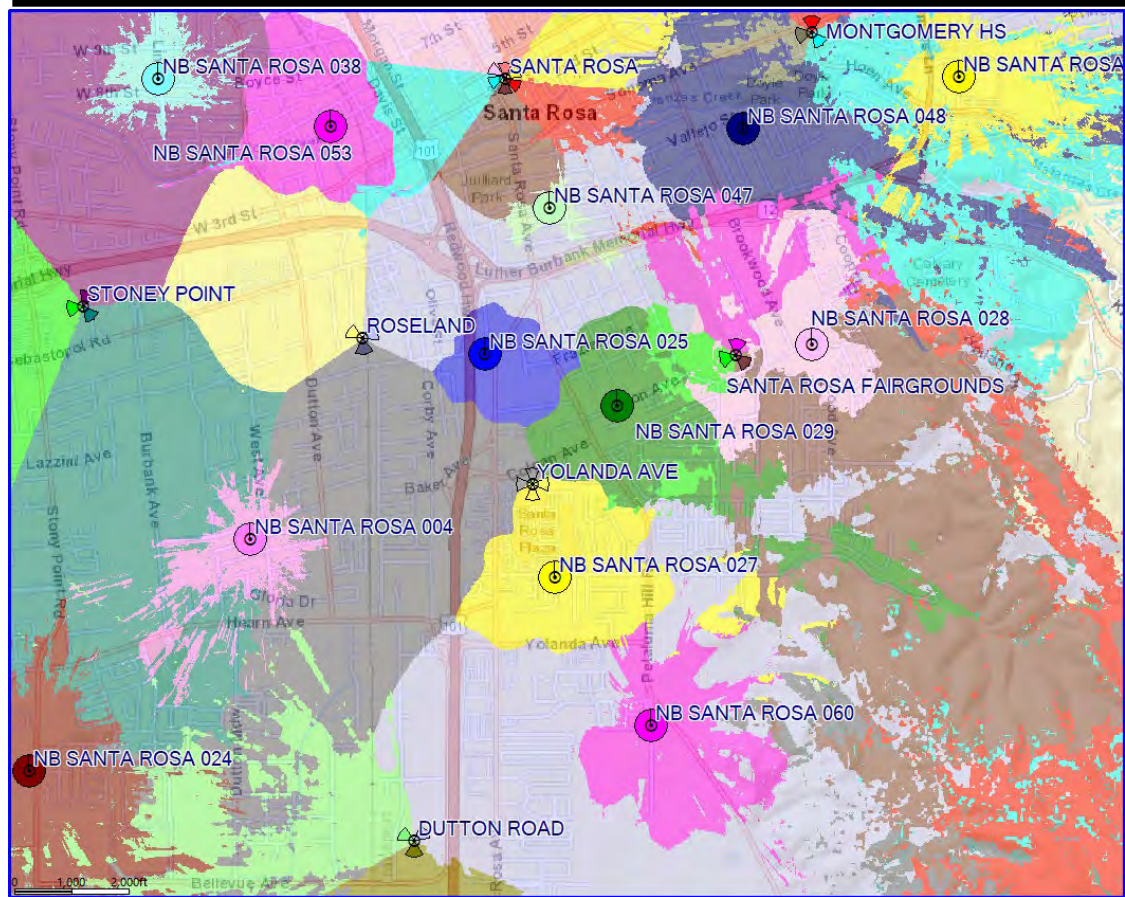
On-Air Site (Existing)



New Site (Proposed)



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Existing 4G-AWS Best Server Coverage Map: YOLANDA AVE Site in Santa Rosa

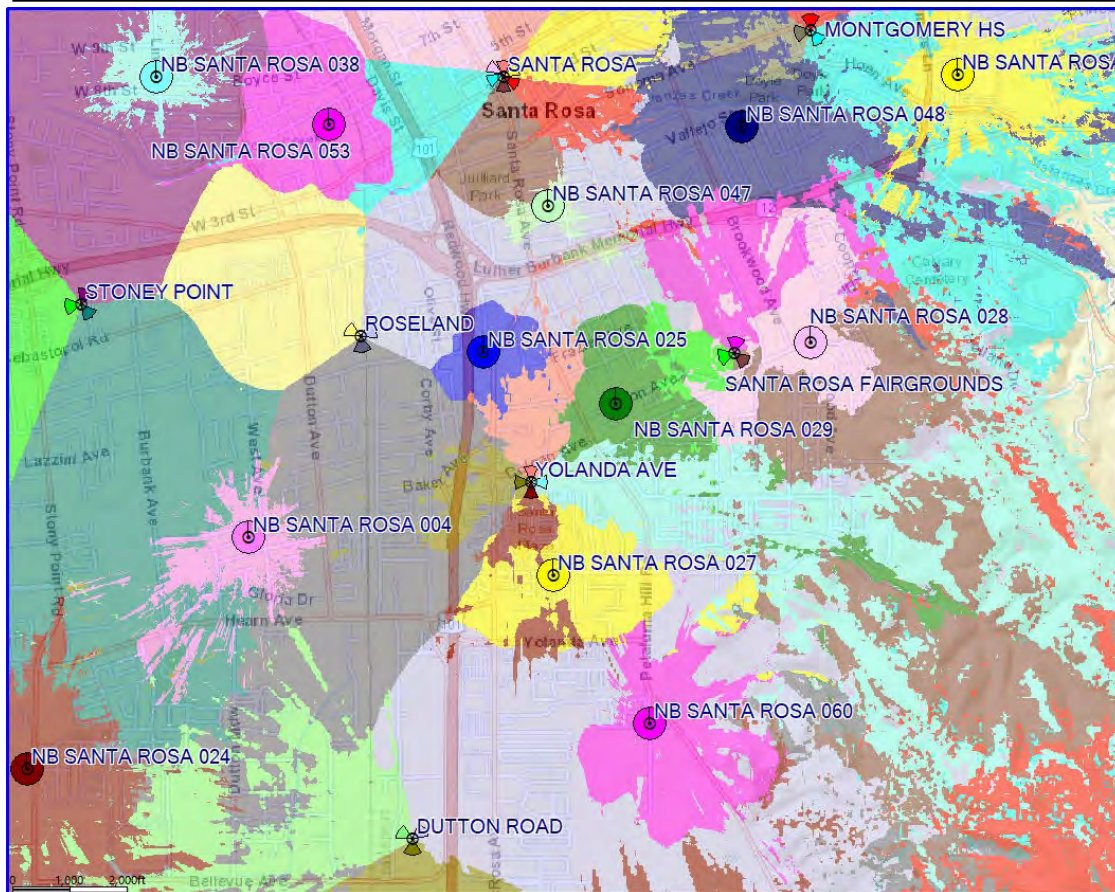


-  On-Air Site (Existing)
-  New Site (Proposed)



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Existing+Proposed 4G-AWS Best Server Coverage Map: YOLANDA AVE Site in Santa Rosa



On-Air Site (Existing)

New Site (Proposed)



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