

AT&T Mobility Radio Frequency Statement  
10 Bayview Drive, San Rafael, Marin County, CA 94901

AT&T has experienced an estimated 470,000% increase in mobile data use on its network since the release of the iPhone in 2007. AT&T forecasts its customers' growing demand for mobile data services to continue. The increased volume of data travels to and from customers' wireless devices and AT&T's wireless infrastructure over limited airwaves — radio frequency spectrum that AT&T licenses from the Federal Communications Commission.

Spectrum is a finite resource and there are a limited number of airwaves capable and available for commercial use. Wireless carriers license those airwaves from the FCC. To ensure that service quality, AT&T must knit together its spectrum assets to address customers' existing usage and forecasted demand for wireless services, and it must use its limited spectrum in an efficient manner.

AT&T uses high-band (i.e., 2300 MHz, 2100 MHz, and 1900 MHz) and low-band (i.e., 850 MHz and 700 MHz) spectrum to provide wireless service. Each spectrum band has different propagation characteristics and signal quality may vary due to noise or interference based on network characteristics at a given location. To address this dynamic environment, AT&T deploys multiple layers of its licensed spectrum and strives to bring its facilities closer to the customer. The proposed wireless communications facility at 10 Bayview Drive, San Rafael, CA (the "Property") is needed to close a coverage gap in LTE service in an area roughly bordered by Bayview Drive South to the north, Point San Pedro Road towards Main Drive to the west, San Rafael Bay to the south, and San Pedro Cove and Point San Pedro Road towards Arguello Circle to the east. This portion of Marin County includes many dozens of homes in multiple neighborhoods, offices and businesses near the harbor, a school, parks, a busy one-mile stretch of Point San Pedro Road, and other points of interest in the immediate vicinity.

The service coverage gap is caused by inadequate infrastructure in the area. AT&T currently has existing sites in the broader geographical area surrounding the Property but, as Exhibit 1 illustrates, these existing sites do not provide sufficient LTE service in the gap area. To meet its coverage objectives, AT&T needs to construct a new wireless communications facility. Wireless telecommunications is a line-of-sight technology, and AT&T's antennas need to be placed at a location and height to propagate an effective signal throughout the gap area. To meet its coverage objectives for this gap area, AT&T proposes a new stealth wireless telecommunications facility designed as a bell tower near the front of a church so that antennas are located high enough to provide service coverage to the gap area. Denial of this proposed facility or a reduction in height would materially inhibit AT&T's ability to provide and improve wireless services in this portion of the county.

The facility at the Property will help close the gap in coverage and help address rapidly increasing data usage driven by smart phone and tablet usage. This site is part of an effort to fully deploy 4G LTE technology in the area. Specifically, the proposed facility will close this service coverage gap and provide reliable 4G LTE service for AT&T customers in the affected area. 4G LTE is capable of delivering speeds up to 10 times faster than industry-average 3G speeds. LTE technology also offers lower latency, or the processing time it takes to move data through a network, such as how long it takes to start downloading a webpage or file once you've sent the request. Lower latency helps to improve the quality of personal wireless services. What's more, LTE uses spectrum more efficiently than other technologies, creating more space to carry data traffic and services and to deliver a better overall network experience.

It is important to understand that service problems can and do occur for customers even in locations where the coverage maps on AT&T's "Coverage Viewer" website appear to indicate that coverage is available. As the legend to the Coverage Viewer maps indicates, these maps display approximate coverage. Actual coverage in an area may differ from the website map graphics, and it may be affected by such things as terrain, weather, network changes, foliage, buildings, construction, high-usage periods, customer equipment, and other factors.

It is also important to note that the signal losses, slow data rates, and other service problems can and do occur for customers even at times when certain other customers in the same vicinity may not experience any problems on AT&T's network. These problems can and do occur even when certain customers' wireless phones indicate coverage bars of signal strength on the handset. The bars of signal strength that individual customers can see on their wireless phones are an imprecise and slow-to-update estimate of service quality. In other words, a customer's wireless phone can show coverage bars of signal strength, but that customer will still, at times, be unable to initiate voice calls, complete calls, or download data reliably and without service interruptions due to service quality issues.

AT&T uses industry standard propagation tools to identify the areas in its network where signal strength is too weak to provide reliable in-building service quality. This information is developed from many sources including terrain and clutter databases, which simulate the environment, and propagation models that simulate signal propagation in the presence of terrain and clutter variation. AT&T designs and builds its wireless network to ensure customers receive reliable in-building service quality. This level of service is critical as customers increasingly use their mobile phones as their primary communication devices (more than 75% of Californian households rely exclusively or primarily on wireless phones) and rely on their mobile phones to do more (E911, video streaming, GPS, web access, text, etc.). In fact, the FCC estimates that 70% of 911 calls are placed by people using wireless phones.

The proposed facility at the Property is also a part of AT&T's commitment to supporting public safety through its partnership with FirstNet, the federal First Responder Network Authority. The proposed facility will provide new service on Band 14, which is the dedicated public safety network for first responders nationwide. The proposed facility is designed to be part of FirstNet and will provide coverage and capacity for the deployment of the FirstNet platform on AT&T's LTE network. Deployment of FirstNet in the subject area will improve public safety by providing advanced communications capabilities to assist public safety agencies and first responders.

Exhibit 1 to this Statement is a map of the existing LTE service coverage (without the proposed installation at the Property) in the area at issue. It includes LTE service coverage provided by other existing AT&T sites. The green shading shows areas within a signal strength range that provide reliable service coverage. The yellow shaded areas depict areas within a signal strength range that provide marginal service coverage where some calls may not connect. The blue areas depict areas in which a customer might have difficulty receiving a consistently acceptable level of service and may not be able to complete calls. The uncolored portions are areas of unreliable coverage. The quality of service experienced by any individual customer can differ greatly depending on whether that customer is indoors, outdoors, stationary, or in transit. Any area in the yellow, blue or uncolored category is considered inadequate service coverage and constitutes a service coverage gap.

Exhibit 2 is a map that predicts LTE service coverage based on signal strength in the vicinity of the Property if the proposed facility is constructed as proposed in the application. As shown by this map, constructing the proposed facility at the Property closes this significant service coverage gap.

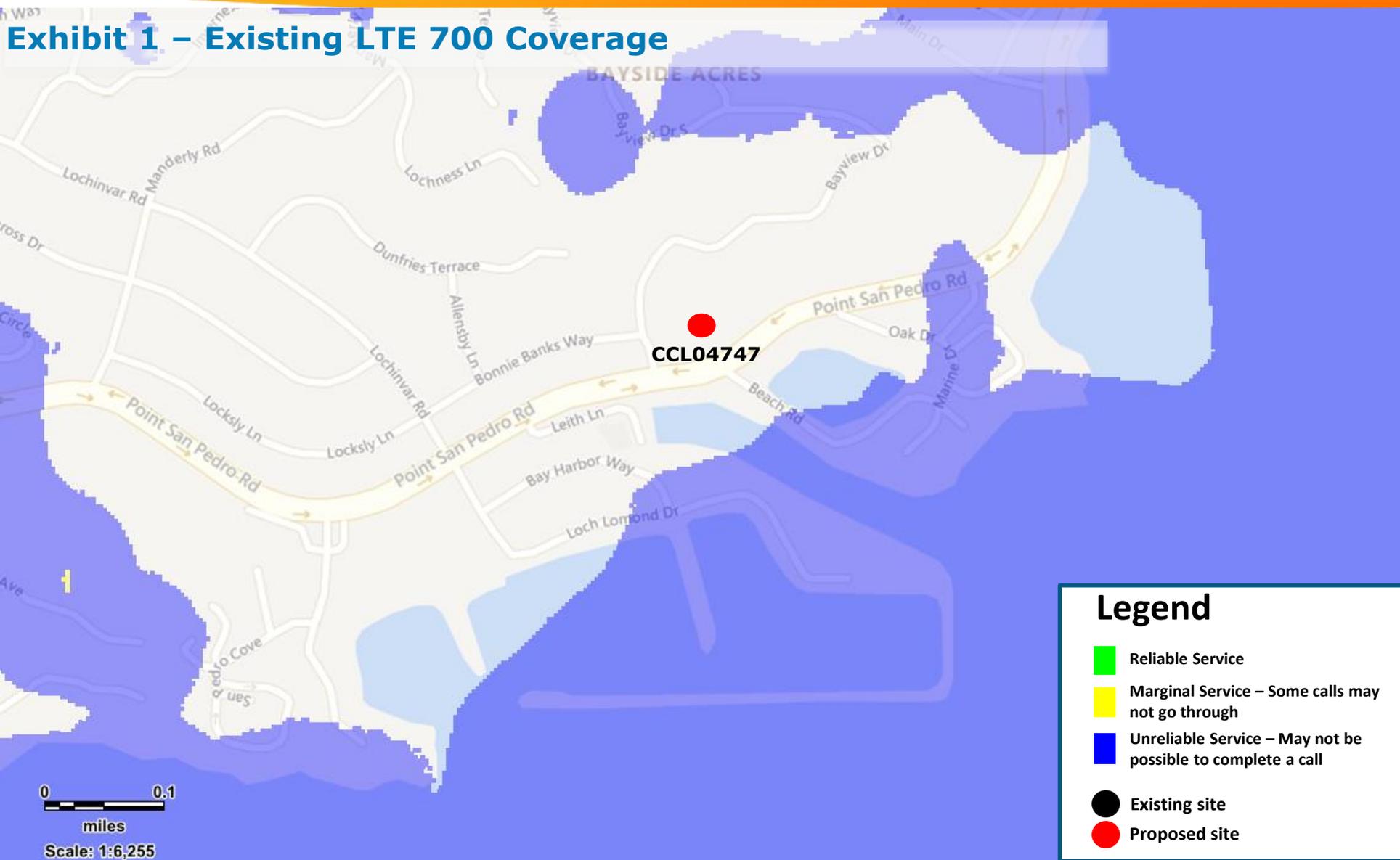
My conclusions are based on my knowledge of the Property and with AT&T's wireless network, as well as my review of AT&T's records with respect to the Property and its wireless telecommunications facilities in the surrounding area. I have a Bachelor of Science Degree in Electrical Engineering from the University of California, Davis, and have worked as an engineering expert in the wireless communications industry for more than 25 years.



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Michael Caniglia  
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RAN Design & RF Engineering  
April 2020

# Exhibit 1 – Existing LTE 700 Coverage

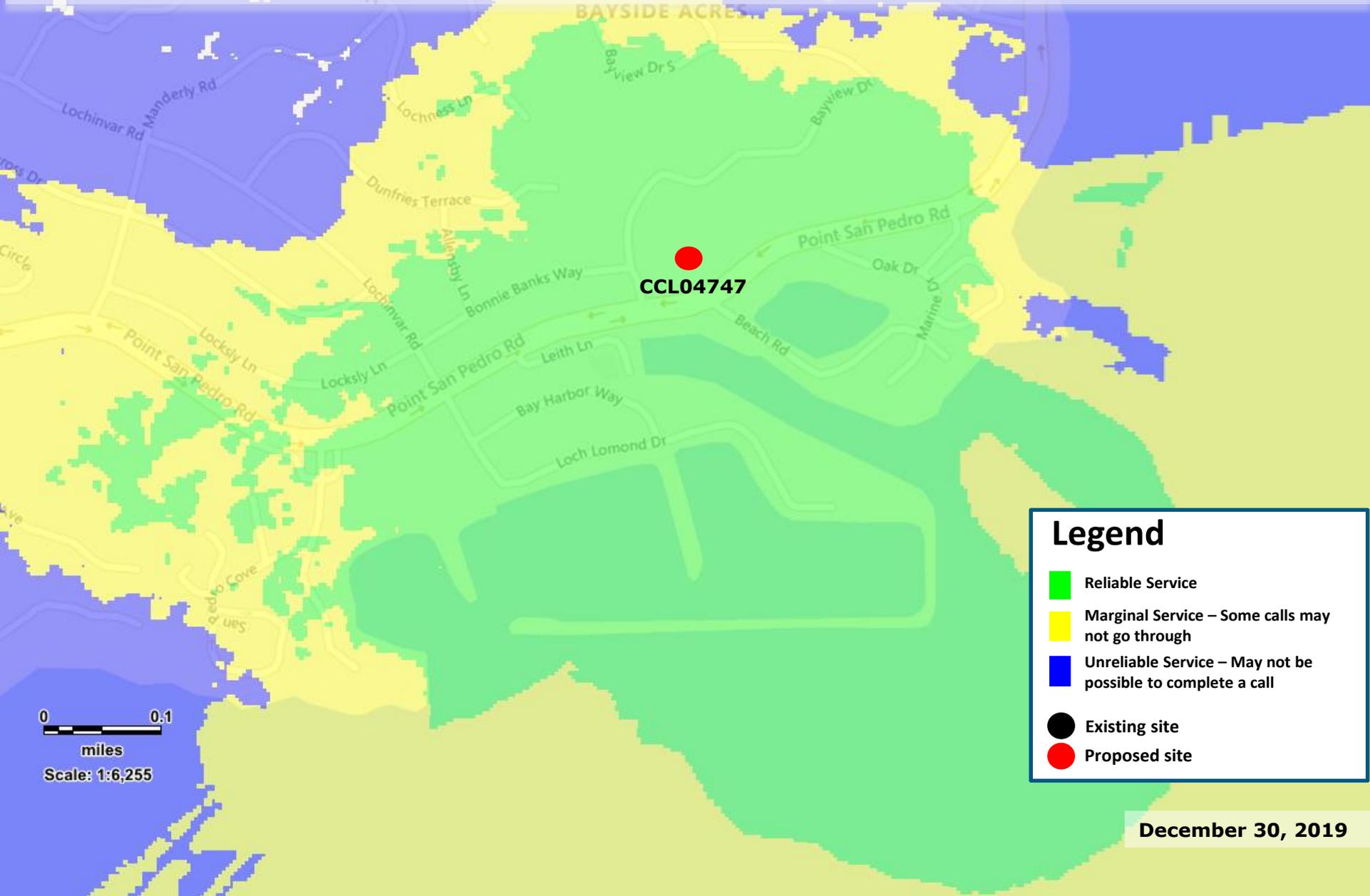


### Legend

- Reliable Service
- Marginal Service – Some calls may not go through
- Unreliable Service – May not be possible to complete a call
- Existing site
- Proposed site

December 30, 2019

# Exhibit 2 – Proposed LTE 700 Coverage – 10 Bayview Dr. @ RC = 30 ft.



### Legend

- Reliable Service
- Marginal Service – Some calls may not go through
- Unreliable Service – May not be possible to complete a call
- Existing site
- Proposed site

December 30, 2019