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# **RADIO FREQUENCY BENCHMARK STUDY**

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**Prepared for:**



**Site Identifier:** **4HY0603B (T-Mobile)**  
101 Red Brook Road  
Mashpee, MA 02649  
Barnstable County  
41.584131°, -70.484189°

**Test Type:** **Live Network**

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**Date of Testing:** March 29, 2018

**Report Date:** April 02, 2018

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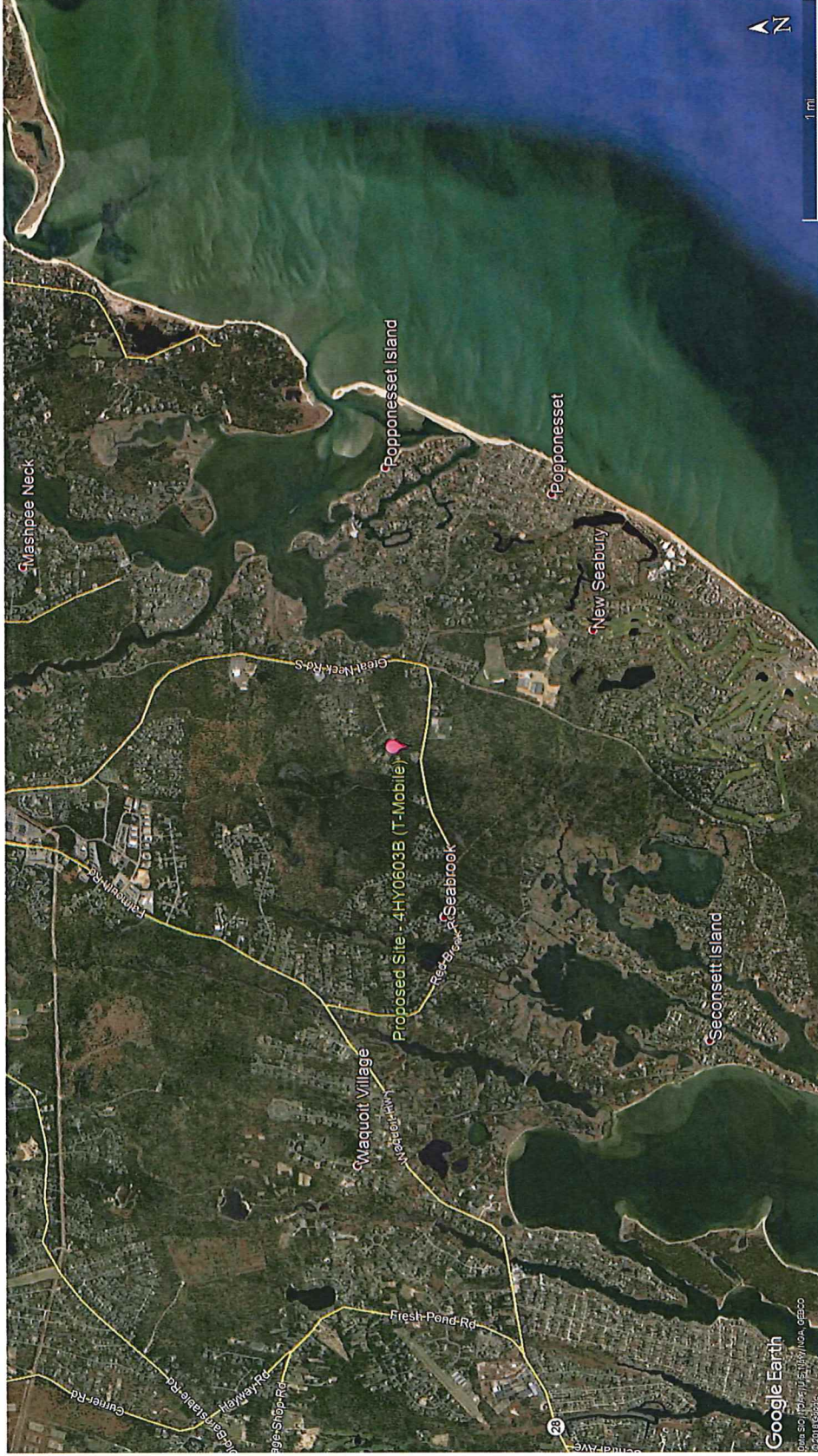
## **1. PURPOSE OF REPORT**

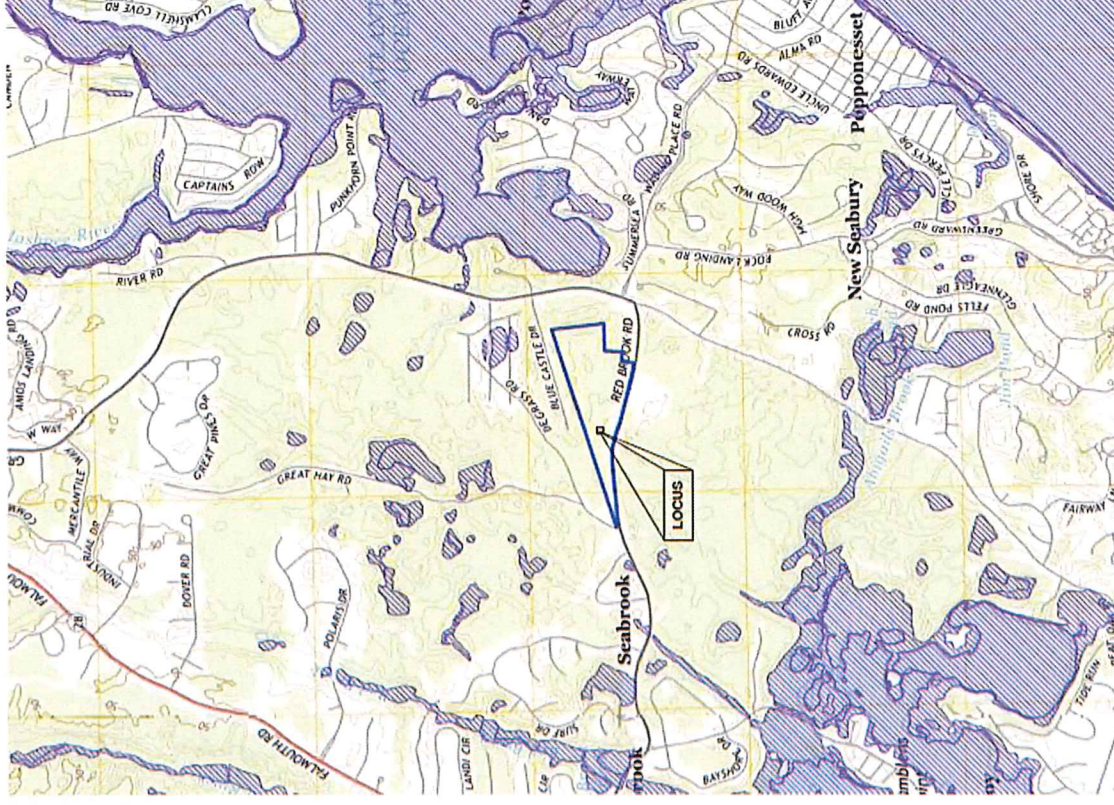
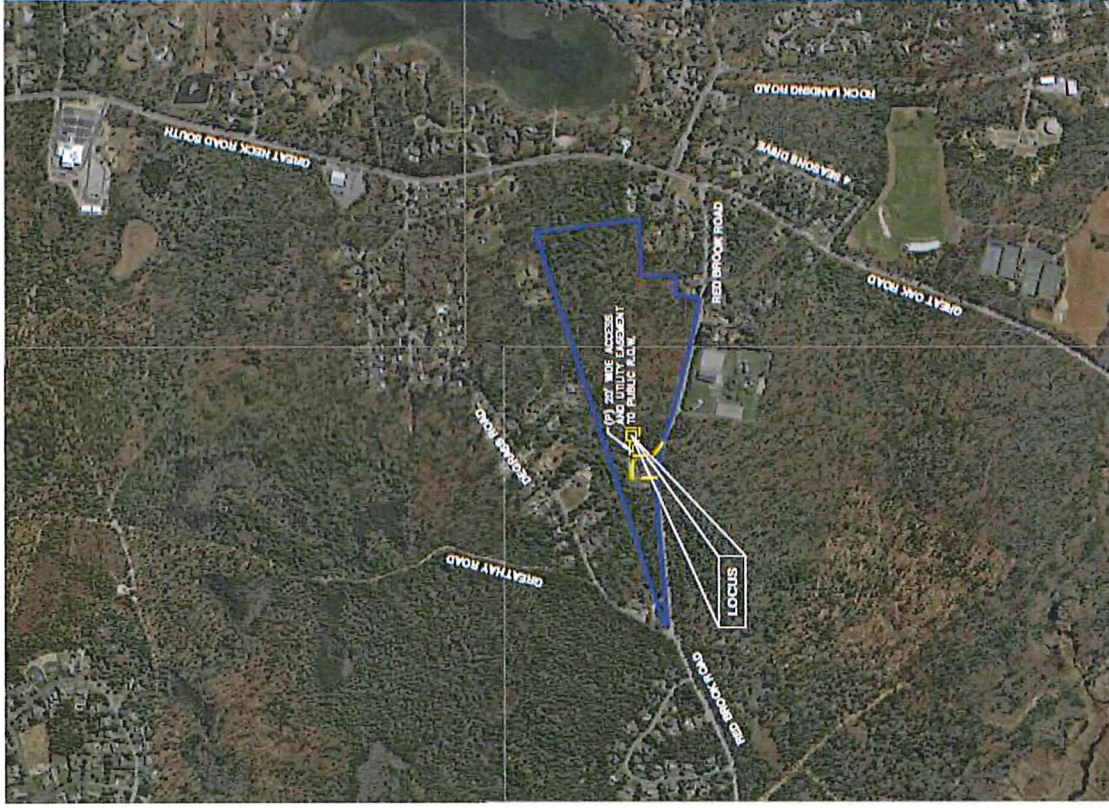
SAI Communications has been contracted by Blue Sky Towers LLC to perform a live network survey on T-Mobile's network coverage around the proposed site at 101 Red Brook Road, Mashpee, MA, to evaluate the existing RF coverage in the vicinity of the location. Measurements were taken on all accessible roads within depicted map area as shown in Section 3. The measurements collected represent the cumulative RF coverage of all T-Mobile's Wireless RF sources in the area within the frequency range being scanned.

SAI field personnel performed the benchmark test on March 29, 2018. This report contains a detailed summary of the RF coverage for the site which focused on the following Technology and associated frequency band & channel:

- T-Mobile LTE (**4G**) 2100 MHz (Ch 2300)

## 2. PROPOSED SITE LOCATION



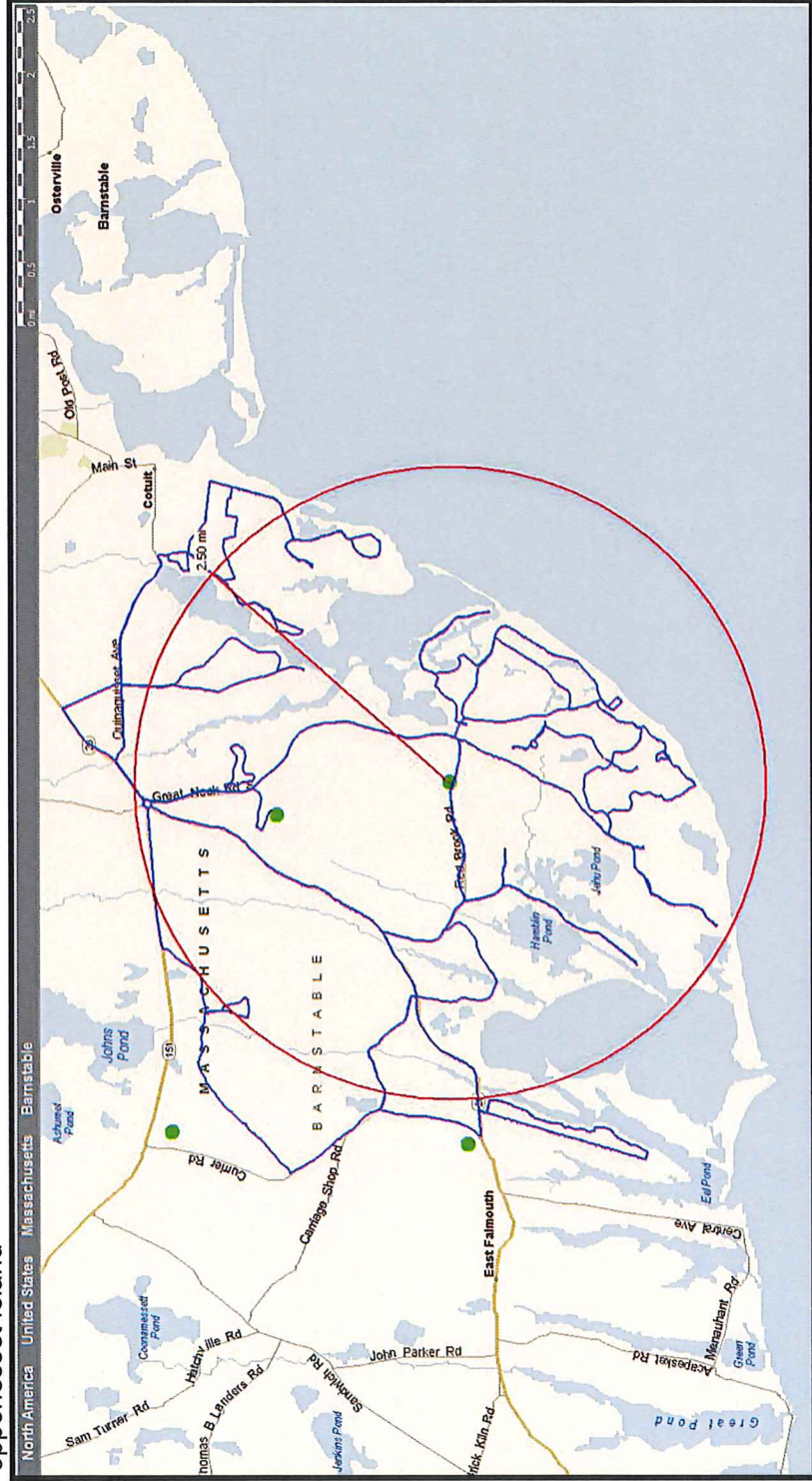


Ref: ProTerra Design Group, LLC's Aerial & USGS Maps dated 09/27/17.

### 3. DRIVE TEST MAP

The Drive Test area was determined using a 2.5 mile radius around the proposed site location. Following areas were taken into consideration to measure existing RF coverage:

- The Town of Mashpee
- Seabrook
- Monomoscoy Island
- Waquoit Village
- Secondsett Island
- New Seabury
- Popponesset Island



#### 4. TEST EQUIPMENT USED FOR MEASUREMENTS

The following calibrated equipment was used for the measurements contained in this report.

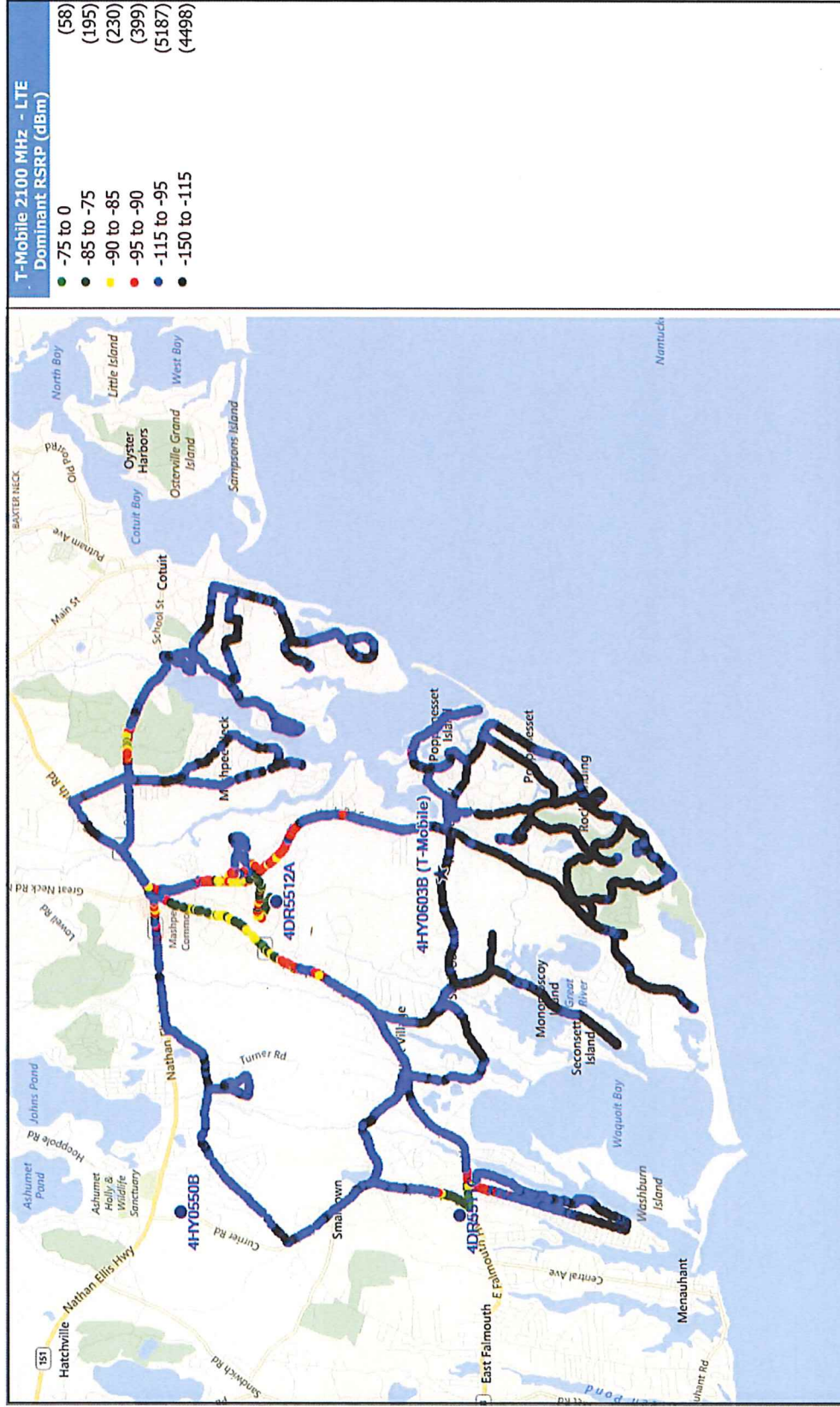
<b>Scanner Manufacturer:</b> ZK Celltest
<b>Model:</b> 13760
<b>Antenna Manufacturer:</b> Max-Rad
<b>Model:</b> BMLPVDB700 / 2500
<b>GPS Manufacturer:</b> Trimble
<b>Model:</b> U-Blox

#### 5. TEST RESULTS

The plots attached in this Section show measurements taken on all accessible roads within the search ring. The legend shows the number of measurements taken in each range of signal quality. They are plotted with the similar thresholds and colors for a correlation of the coverage thresholds to customer experience:

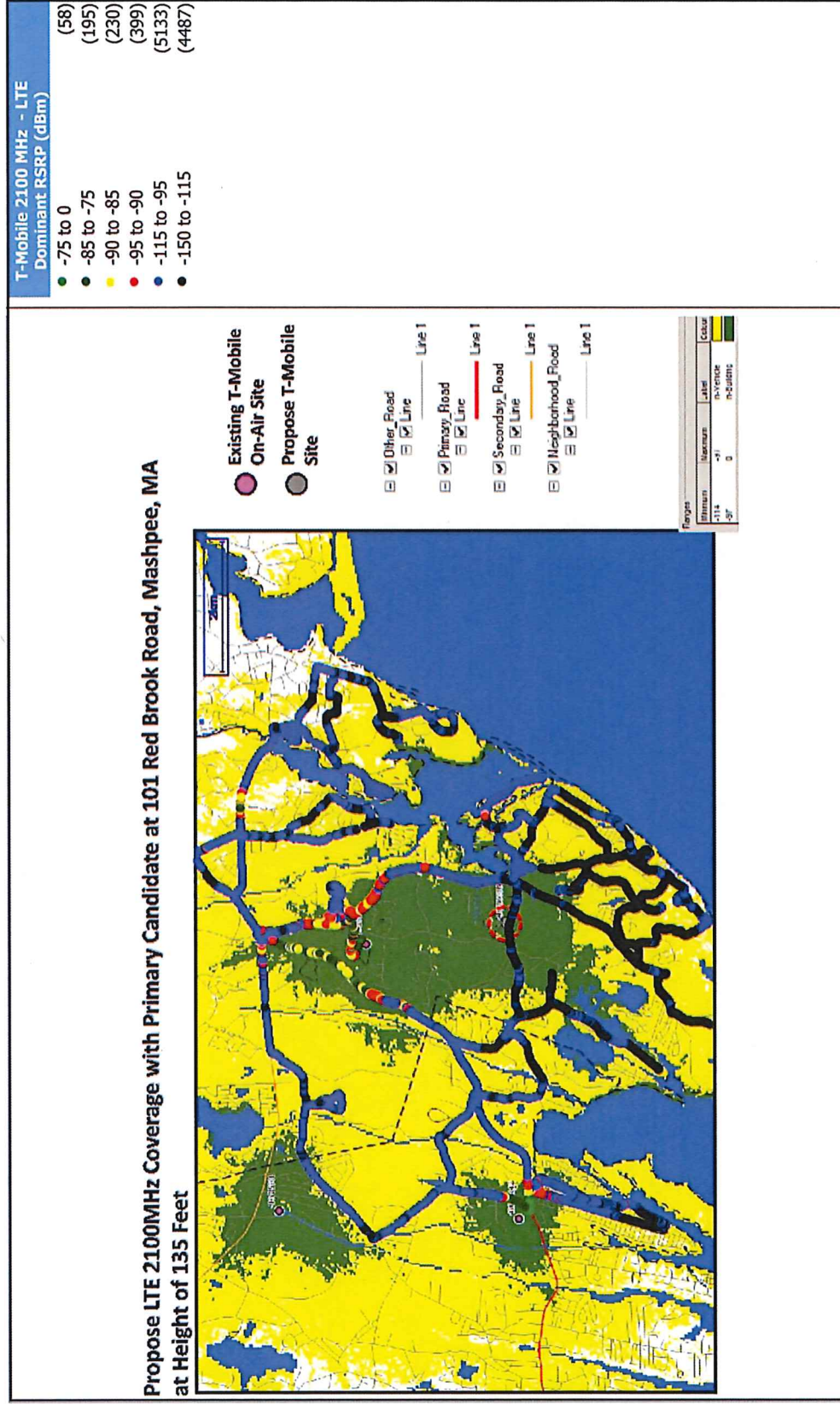
- **Light Green** (-75 to 0) – Customers should experience solid voice service and fastest data rates
- **Dark Green** (-85 to -75) – Customers should experience solid voice service, data rate may be slightly compromised
- **Yellow** (-90 to -85) – Customers should experience solid voice service, data rate could be impaired
- **Red** (-95 to -90) – Customers should experience good voice service and some data service but it may be substandard
- **Blue** (-115 to -95) – Customers may find areas where voice service is impaired and data may not function
- **Black** (-150 to -115) – Customers could not be able to make a voice call or data connection

### 5.1 T-Mobile LTE 2100 MHz Existing Signal Strength (dBm)





**5.2 T-Mobile LTE 2100 MHz Existing Signal Strength (dBm) w/ Proposed Coverage Map<sup>1</sup>**



<sup>1</sup> Proposed coverage map provided by T-Mobile

## 6. CONCLUSION

The measurements recorded on March 29, 2018, revealed that in the vicinity of the surrounding areas at 101 Red Brook Road, Mashpee, MA, the existing signal strength is poor along Red Brook Road, Monoscocoy Road, Amy Brown Road, Great Hay Road, Ostrom Road, Great Oak Road, Great Neck Road S, Rock Landing Road, Popponesset Island Road, Fairway Ln, Troon Way, Walton Heath Way, Shore Dr W, Waterway and Wading Place Rd.

From the conducted benchmark test, there exists inadequate and unreliable wireless coverage in the areas mentioned above. Also, in Southern Mashpee, businesses like New Seabury Country Club, along with high-end residential areas fall under significant cellular coverage gap.

As depicted in the plots included in 5.2 “**T-Mobile LTE 2100 MHz Existing Signal Strength (dBm) w/ Proposed Coverage Map**”, it is evident that the proposed site will not only improve the RF coverage significantly in the cellular service deficient areas but will also provide good coverage overlap with surrounding sites to achieve robust and reliable communication service throughout the neighboring areas.

## 7. STATEMENT OF CERTIFICATION

I certify to the best of my knowledge that the statements contained in this report are true and accurate. The measurements were obtained with properly calibrated equipment using techniques in compliance with current industry standards.



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Sanket Y. Joshi  
RF Engineer  
SAI Communications

April 02, 2018  
Date



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Michael T. Doiron  
Director, Engineering and Technical Services  
SAI Communications

April 02, 2018  
Date