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Cellular Voice Coverage in Rural Maine

An analysis of call performance and signal strength
in the Bingham, Greenville, Jackman, Rangeley and
Sedgwick telephone exchanges

Prepared by James W. Sewall Company for the State of Maine
Office of the Public Advocate

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Maine Office of the Public Advocate

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1.0 Executive Summary

1.1 TASK

This study was commissioned by the Maine Office of Public Advocate to examine the extent and quality of cellular voice coverage in five selected rural telephone exchanges in Maine—Bingham, Greenville, Jackman, Rangeley, and Sedgwick. Each of these exchanges lacks any wireline provider other than FairPoint Communications NNE (e.g., a cable provider). The objective of the study was to assess the availability of cellular voice service in these exchanges and its potential effectiveness as an alternative to traditional wireline voice service. To achieve this objective, Sewall:

- Evaluated the call completion rate, voice quality and cellular signal strength of calls placed within these exchanges using the available cellular voice services from three major cellular carriers—AT&T, US Cellular, Verizon; and
- Determined the highest level of cellular voice performance achieved by any carrier at all call locations within the exchanges.

This report presents results from the testing of cellular voice service conducted in the five rural exchanges during the months of December 2014 and January 2015. The findings provide current information on call performance of the three cellular carriers at specific test locations in each exchange and identify areas of no call completion and best call quality within the exchange. These findings also indicate those locations where customers have an alternative to wireline voice service in these five exchanges.

The collection, analysis and reporting of cellular voice data in this study is without bias or intention to endorse any specific carrier.

1.2 PROCESS AND METHODS

The process and methods used to select test locations and conduct the tests are outlined below:

Exchange and test locations selection

- Prior to field testing, the OPA identified five candidate exchanges that had little or no cable TV service and incomplete wireless coverage, based on data

from the ConnectME Authority broadband mapping project and the Maine Office of GIS. These locations were chosen to serve as a proxy for locations within the state without alternative wireline service.

- To preselect testing locations, the Sewall-Tilson team used Google Earth mapping software to identify clusters of homes and buildings. As a result, the selected sites represented the majority of households and businesses in each area, the sites were accessible, and the tests conducted in a cost-effective and safe manner.

Field testing

- Tests were performed from the center of the exchange area outward along major and minor highways in locations where housing existed. Terrain, tree growth, unplowed roads, and other potential radio frequency interference factors were considered and influenced the number, location and frequency of testing points. Some test locations were added while on location. Testing indoors was conducted utilizing public access buildings facilities.
- Consumer grade phones were used to conduct the tests so that results were based on the consumer's perspective.¹ To test voice and call quality performance, calls were placed that were in duration of at least one minute. Signal strength was recorded from the cellphones in dBm and ASU.² Data network performance was not gathered during these tests, only performance in regards to voice.
- All data was logged and points mapped for reporting purposes.

1.3

SUMMARY OF RESULTS

A summary of key findings from the testing and analysis follows. This information is based on the best results overall obtained at each location tested and does not reflect the performance of any individual carrier. Details, supporting data and maps—including location and carrier-specific performance—are in the body of the report. Maps with additional detail on results by carrier are provided in the Appendices.

¹ The phones used on the tests included the ZTE Model Z830 (AT&T), Motorola XT1019 (US Cellular), and Galaxy S4 (Verizon), a random and typical sampling of phones available on the commercial market.

² Signal strength received by a cellphone from the cellular network is measured in dBm (sometimes dBmW or decibel-milliwatts), which is the power ratio in decibels (dB) of the radio power per one milliwatt (mW). Arbitrary strength unit (ASU) is an integer value proportional to the received signal strength measured by the mobile phone.

Bingham

- Calls were completed from at least one carrier at 88 percent of locations tested in the Bingham exchange. Of the locations where calls were completed, 90.9 percent had clear voice connections, 4.5 percent had minor voice cracking (degraded voice quality), and 4.5 percent were of poor quality.³
- No calls were successfully completed by any carrier in Caratunk, the northernmost town in the exchange.

Greenville

- Calls were completed from all of the locations tested in the Greenville exchange from at least one carrier, and all of these calls were clear voice connections.

Jackman

- Calls were completed from at least one carrier at 93 percent of the locations tested in the Jackman exchange. Of the locations where calls were completed, 95 percent had clear voice connections, and 5 percent had minor voice cracking.
- No calls by any carrier were completed successfully in Sandy Bay Township, the northernmost town in the exchange, and in Johnson Mountain Township, the southernmost town in the exchange.

Rangeley

- Calls were completed from at least one carrier in 78.3 percent of the locations tested in the Rangeley exchange. Of the locations where calls were completed, all were able to obtain clear voice connections.
- No calls were successfully completed in 10 test locations in the exchange—7 in central and western Sandy River Plantation, 2 in Rangeley Plantation, and 1 in northwestern Dallas Plantation

Sedgwick

- Calls were completed from all the locations tested in the Sedgwick exchange from at least one carrier; 97.7 percent of these locations were able to obtain clear voice connections; 2.3 percent had minor voice cracking.

1.4**LIMITATIONS**

While this study was intended to provide some baseline information to inform the OPA's approach to policies governing fixed wireline voice service, the scope of the

³ A call was considered poor quality when it had frequent voice cracking or voice breakup, or when it was dropped or disconnected before call test time was completed.

testing by necessity limits the conclusions that can be drawn from the results. These limitations include:

- Nearly all of the locations tested were outdoors, and thus do not reflect the ability to complete a call or call quality inside a building. Thus the results do not show whether a call could be completed indoors at most of the locations tested, i.e., in a manner that reflects primary usage of fixed wireline voice service.
- The findings reflect results from testing during a discrete period of time from December 2014 to January 2015. Testing at different periods could yield different findings based on variations in foliage, weather, carrier maintenance or investment and other factors. The findings do not include information regarding the reliability of wireless voice service over time and other relevant service quality metrics.⁴
- The testing focused only on voice calls, though the fixed wireline network is used to provide many non-voice services for which wireless service may or may not provide a substitute.
- Similarly, the testing did not include evaluation of the ability to access the internet or data speeds. In many of the locations tested, the fixed wireline network also provides internet access via DSL.
- No testing of 911 location data was conducted.⁵ [cite to FCC 911 location order]

1.5 CONCLUSIONS

The summary of results above and the detailed analysis that follows provide the basis for the following conclusions.

1. Rural areas of Maine are challenged by environmental factors that impact the reliability and quality of cellular voice service, including mountains, valleys, rock formations, vegetation and weather (particularly in winter). Major road corridors follow rivers and valleys between hills.
2. Of the five rural FairPoint exchanges tested in this study, two exchanges—Greenville and Sedgwick—appear to offer the ability to make a voice call

⁴ Historically the telecommunications industry has considered 99.999 percent of wireline voice calls completed (also known as the *five nines*) the standard of reliability. An equivalent standard for wireless performance is not yet established, however, and this study did not test to such a standard.

⁵ The FCC recently adopted rules to assist emergency responders in locating wireless callers to 911, especially from calls made indoors. The new rules establish timelines for wireless providers to meet indoor location accuracy benchmarks for both horizontal and vertical location information. Fourth Report and Order (FCC 15-9), 3 February 2015. http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0203/FCC-15-9A1.pdf

from all locations tested. These results suggest that cellular voice service in these two exchanges may provide an alternative to wired voice service.

3. Three of the five exchanges tested in this study— Jackman, Bingham and Rangeley—included locations where calls could not be completed on any carrier. In these locations, there is no acceptable alternative to wired voice service.
4. The maps depicting 3G and 4G coverage within these exchanges are not an accurate representation of the ability to complete a voice call. Calls were completed in many locations depicted without 3G/4G coverage, and calls could not be completed in some locations said to have 3G/4G coverage.

Overall, these results indicate that the availability of wireless voice service as an alternative to fixed wireless voice service can vary widely between exchanges and at locations within exchanges.

2.0 Introduction

Reliability and quality of cellular phone service (the ability to place and receive voice calls without interruption or failure) are determined by several interrelated factors, including the age and type of equipment infrastructure, antenna placement, the age and compatibility of cellphone devices, tower equipment maintenance, and signal strength, which is impacted by terrain, seasonal foliage, and other environmental influences. This section reviews major factors that affect cellular service performance, with a focus on the challenges to service in rural areas.⁶ It also reviews specific factors that are likely to have impacted cellular performance in this study.

2.1 FACTORS INFLUENCING CELLULAR SERVICE PERFORMANCE

1. Equipment infrastructure design and installation. Base transceiver station (BTS) design is based on capacity—the number of mobile or cellphone devices the system must support—and coverage—the geographical area to be covered. In rural areas, with a smaller customer base, fewer devices can function optimally at the same time; performance is likely to degrade as the system reaches or exceeds designed capacity. In addition, the coverage area may not include all potential or unanticipated device users; service is likely to be disrupted as the device moves out of the designed covered area.

BTS transmit power and receiver sensitivity also affect the coverage area. Higher transmit power increases the distance a device can receive the signal. Higher receiver sensitivity increases the distance a mobile device can be “heard” by the BTS.

Last, antenna elevation and orientation can also affect system performance. Higher elevations often can cover greater distances. The manner in which cellular antennas are installed also play a critical factor in signal radius and performance. The height, down-tilt, array, and cellular frequency all have a direct effect on the signal radius.

⁶ Similar to internet access and availability, regional cellular phone service quality and reliability can be linked to its population. Findings suggest that the level of service is linked to the amount of potential billable customers—more robust in urban settings than in rural or remote areas.

These criteria are all determined by the carrier to best meet their network design goals.⁷

2. *Mobile device compatibility and obsolescence.* Customer cellphone devices must be compatible with the infrastructure discussed above. Older stations may not support newer devices and their ever-increasing functions; newer infrastructure may not support older mobile devices. In addition, available mobile devices differ in quality and performance; some operate better—quicker, further, and more reliably—than others. With constantly evolving technologies, whether tower or cellphone, performance is a constantly evolving metric. Maintenance of tower sites can also greatly impact the operational effectiveness of cellular services.

3. *Signal strength.* Proper signals at the proper levels are necessary for satisfactory cellphone device operation. Performance degrades as signal levels are decreased or (attenuated) by free-space loss, obstruction, interference, or a combination of some or all of these factors.

- Free-space loss: Free-space loss is the normal “fading” of a signal as it travels away from a transmitter. Like visible light, signals fade with distance; further distance equals weaker signal strength. Increasing the transmitter power may increase the effective range.
- Obstruction by absorption: Solid objects and anything containing water may decrease signal strength, such as vegetation, trees, foliage (changeable by seasons); glass, in some instances; terrain; and wood and concrete structures.
- Obstruction by reflection: Almost any light-reflective surface can cause obstruction by reflection, such as metal and metal structures and glass, in some instances.
- Interference: Interference includes conflicting “bad” signals in the area; multi-path fading; a “good” signal interfering with itself (when it is reflected and arrives at different times); and a too-strong signal, which can degrade performance as well.

⁷ To access the network, AT&T uses a mobile phone standard entitled Global Service for Mobile (GSM) and US Cellular and Verizon use a method entitled Code Division Multiple Access (CDMA). Although GSM and CDMA standards differ, these differences would not necessarily influence the results as much as other factors, such as the location of the network towers, the power of the signal, or terrain. Neither did the study pinpoint performance based on one or the other. The technology used is far less important to call quality than the way the service carrier built the network.

4. *Operating location:* Outdoor and indoor environments present challenges to system performance. As stated above, cellphone users encounter problems any time the path to the service provider's antenna is obstructed. Outdoor challenges can be compared to late sunset—hills, mountains, valleys, rock formations, and even vegetation block the direct sunlight to valleys and depressions. Although some light exists in these low-lying areas, it is not sufficient to accomplish certain common tasks. Many of the major road corridors follow rivers and valleys between hills; numerous travelers experience service disruptions in these areas. Flat and open areas free of obstructions offer the best cellphone performance.

Several factors can impact signal quality while indoors, such as building type (concrete, brick, wood), location (distance from the source, angle from the source), and height. A cellular signal has less penetration with cement and brick than it does with a structure made of wood, which absorbs a significant amount of the signal. Location is a factor as well. The further the signal has to travel, the weaker it becomes. Last, height is a factor. A single-story home surrounded by trees is likely to have an obstructed signal, whereas a three-story home is likely to have a better signal at the top level versus at the lower levels. Any time that line of sight is obstructed, whether by foliage, tree branches, or buildings, some degree of signal degradation occurs between the device and signal source.

With all the variables to consider, it is impractical to draw hard conclusions on indoor versus outdoor performance. That said, the indoor signal is less likely to be as strong as an outdoor signal.

2.2 FACTORS INFLUENCING PERFORMANCE IN THIS STUDY

Several factors affected cellular signal performance during the testing phase of this project. First, the testing was conducted during winter conditions, which included unplowed roads and trees without foliage. Although cellular is designed for signals to penetrate obstructions such as inclement weather, degradation to the link still occurs.

Second, most tests were conducted at locations without line of sight to a cellular tower and with obstructions, such as mountains, hills, valleys, thick vegetation, and other elements. Testing was performed primarily in the vicinity of residential and commercial buildings to mimic the highest percentage of calls being placed and consistent with state policies supporting universal telephone service.

Third, two tests were conducted inside a building. It is to be expected that further cellular signal degradation occurred within these structures. Each building structure is unique, however, and the impact cannot be estimated without its own signal test for maximum accuracy.



3.0 Survey Results & Analysis

Results from the testing of cellular voice service in five rural exchanges in Maine—Bingham, Greenville, Jackman, Rangeley, and Sedgwick—are presented in this section. The findings provide current information on call performance of three cellular carriers at specific test locations in each exchange and identify areas of best call quality within the exchange.

Performance for each call was analyzed using four criteria of measurement: clear voice, minor voice cracking, poor quality call, or no signal. This information is detailed below by carrier, summarized, and mapped to show the best call quality available at locations within each exchange. Strength of the received signal per call is also detailed by carrier and summarized to indicate approximate overall signal strength within the exchange.

The objective of this analysis is to assess the reliability of wireless service in the five rural exchanges, not to endorse any specific carrier.

3.1 BINGHAM EXCHANGE

Cellphone coverage testing in the Bingham exchange was conducted at 25 outdoor locations in the following areas:

- Bingham (all of the town)
- Caratunk
- Moscow
- Concord Township (NE quadrant)
- Pleasant Ridge Plantation (eastern half)
- Forks Plantation (small section along the southern boundary).⁸

A total of 75 field tests were conducted, 25 tests for each of the three cellular providers within the region: AT&T, US Cellular and Verizon.

⁸ Tests originally planned in the Pleasant Pond area of Caratunk and the Forks Plantation were not conducted due to lack of vehicle access. In addition, no signal was received in the central Caratunk town. Given that recent cellular tower data showed no nearby towers, this area was also excluded.

As shown in Figure 3-1, results of the tests indicate:

- None of the AT&T calls placed (0 out of 25) achieved a connection
- 76 percent of US Cellular calls (19 out of 25) had a clear voice connection
- 80 percent of Verizon calls (20 out of 25) had a clear voice connection

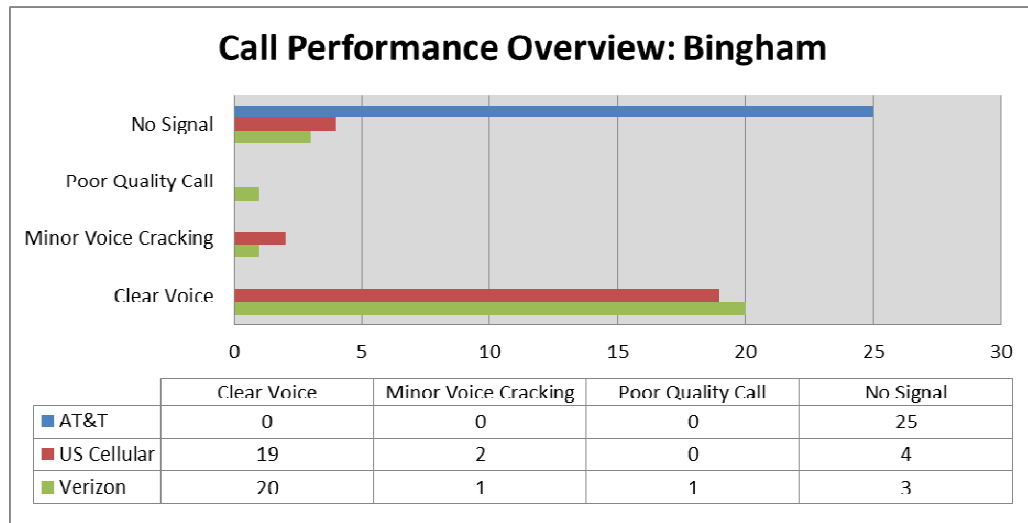


Figure 3-1: Call Performance Overview: Bingham Exchange

This information is supported by the approximate strength of received signals observed and tallied for each carrier cellphone in the exchange.⁹ Figure 3-2, for example, shows that at the time 25 calls were attempted using AT&T service, no signal bars were evident.

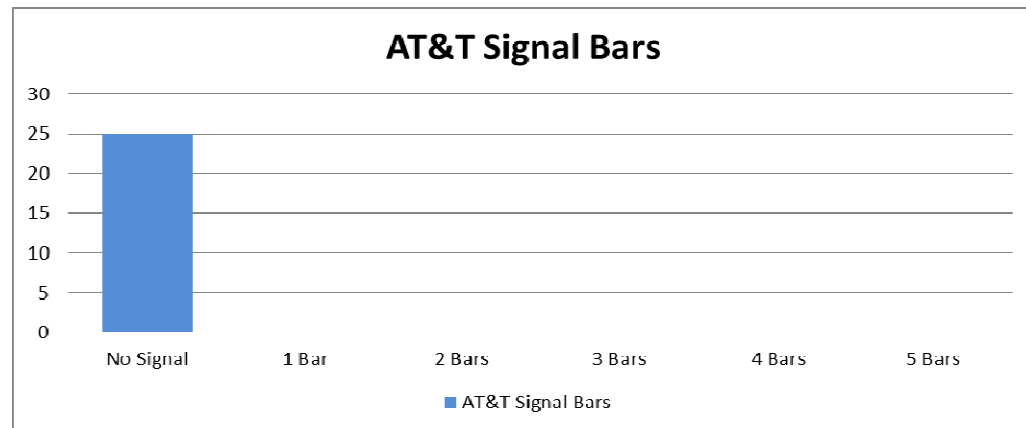


Figure 3-2: AT&T Signal Bars in the Bingham Exchange

⁹ Most mobile phones display a set of five bars of increasing height to indicate the approximate strength of the signal received by the phone from the cellular network. In this analysis, signal bars are used to reveal overall signal strength in an area. Low bars do not in every case signify weak reception, or high bars, strong reception.

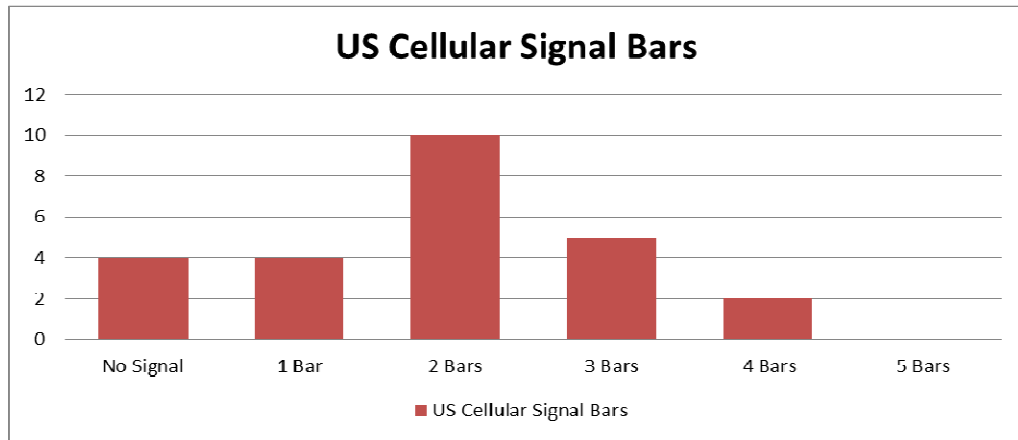


Figure 3-3: US Cellular Signal Bars in the Bingham Exchange

Two bars were observed on 10 calls conducted using US Cellular, 3 bars on 5 calls, and 4 bars on 2 calls. Signal strength on calls using Verizon was observed to be somewhat higher, with 9 calls at 3 bars, and 6 calls at 5 bars (Figure 3-4).

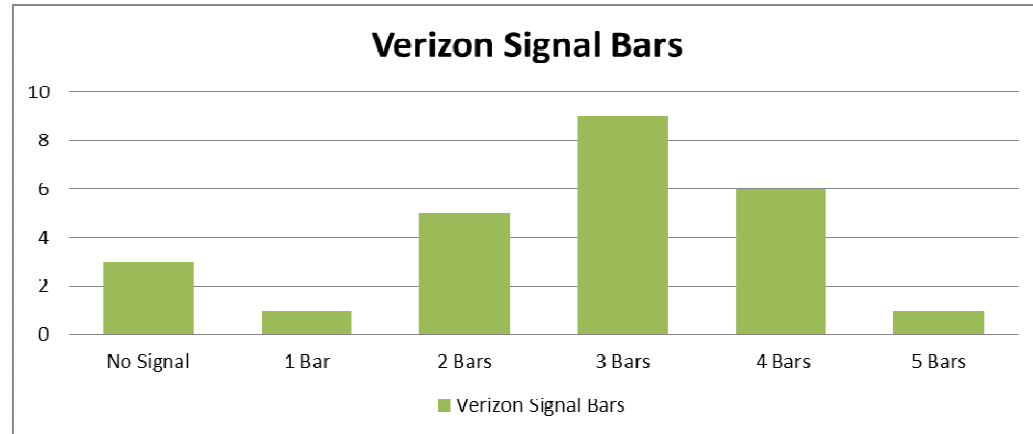


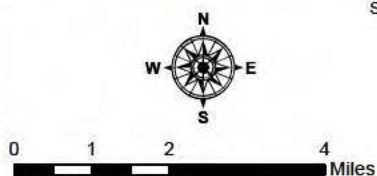
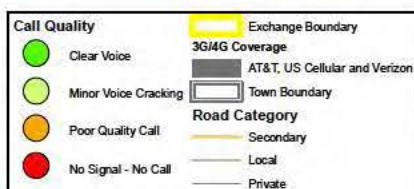
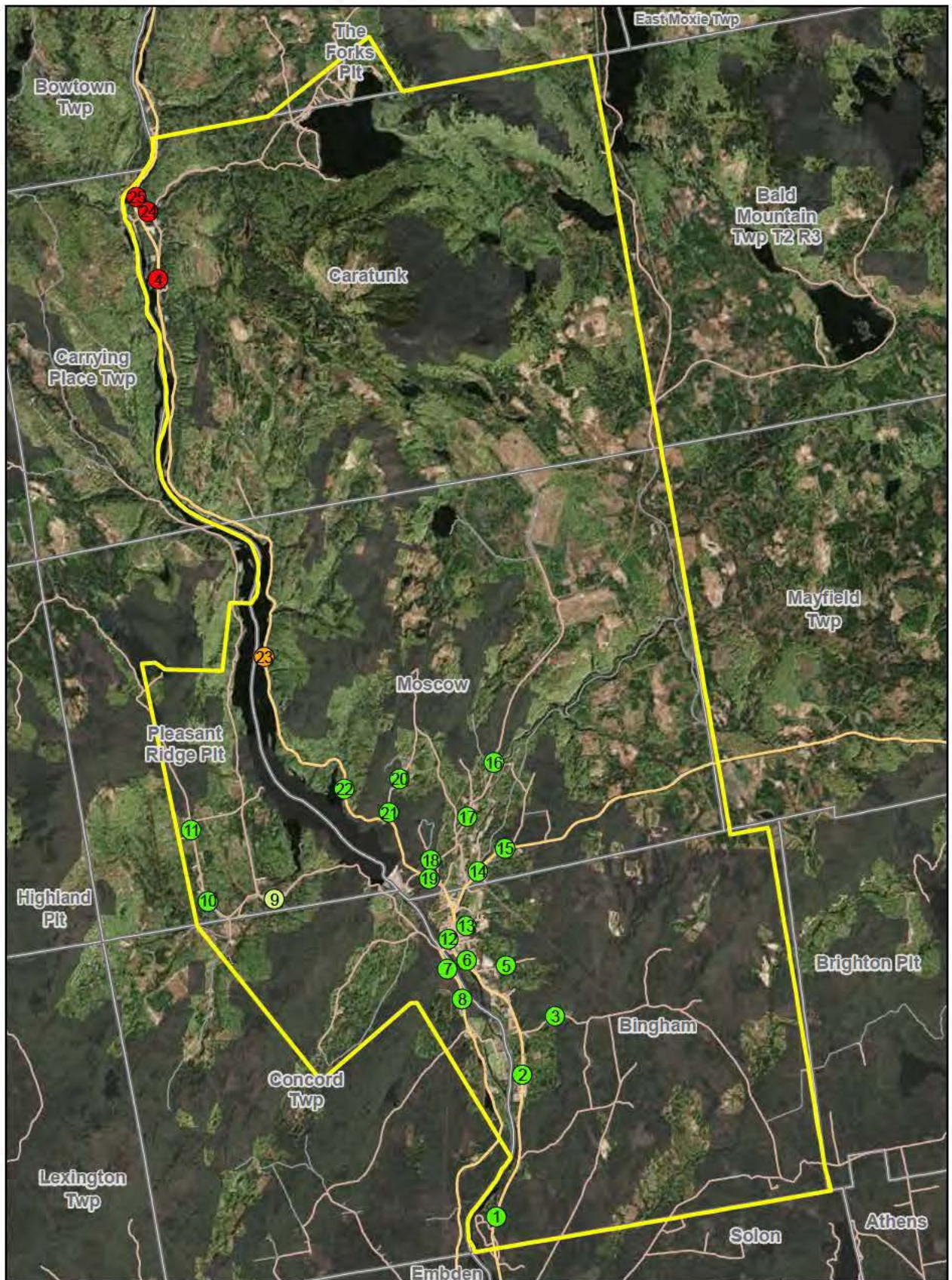
Figure 3-4: Verizon Signal Bars in the Bingham Exchange

Figure 3-5 shows the best call quality that was achieved by any of the carriers at each call location in the Bingham exchange.¹⁰ No calls were successfully completed in Caratunk, the northernmost town in the exchange, from any carrier. Among all carriers, the highest level of call completion in the exchange was 88 percent (22 out of 25 locations); 90.9 percent of which were clear voice connections (20 out of 22), 4.5 percent had minor voice cracking (1 out of 22), and 4.5 percent was of poor quality (1 out of 22).

¹⁰ Gray-shaded areas on Figure 3-5 indicate 3G or 4G mobile broadband coverage, based on ConnectME Authority broadband mapping. The parameters of mobile broadband coverage differ from cellular voice coverage, however, and voice coverage tests conducted outside the shaded areas show call performance of good quality.

Exchange Analysis: Bingham

Test Site Best Call Quality From AT&T, US Cellular and Verizon



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Maps showing the call performance of each carrier at test locations in the Bingham exchange are provided in the Appendix (Figures A-1–A-3).

3.2 GREENVILLE EXCHANGE

Cellphone coverage testing in the Greenville exchange was conducted at 44 outdoor locations in the following areas:

- Greenville (all of the town)
- Lily Bay Township
- Moosehead Junction Township
- Shirley
- Beaver Cove (western half)
- Big Moose Township (eastern half)
- Frenchtown Township (western three-fourths)
- Piscataquis County Island (southern islands)

A total of 132 field tests were conducted, 44 each using AT&T, US Cellular and Verizon service.

As shown in Figure 3-7, results of these tests indicate:

- 72.7 percent of AT&T calls (32 out of 44) had a clear voice connection
- 93.2 percent of US Cellular calls (41 out of 44) had a clear voice connection
- 86.4 percent of Verizon calls (38 out of 44) had a clear voice connection

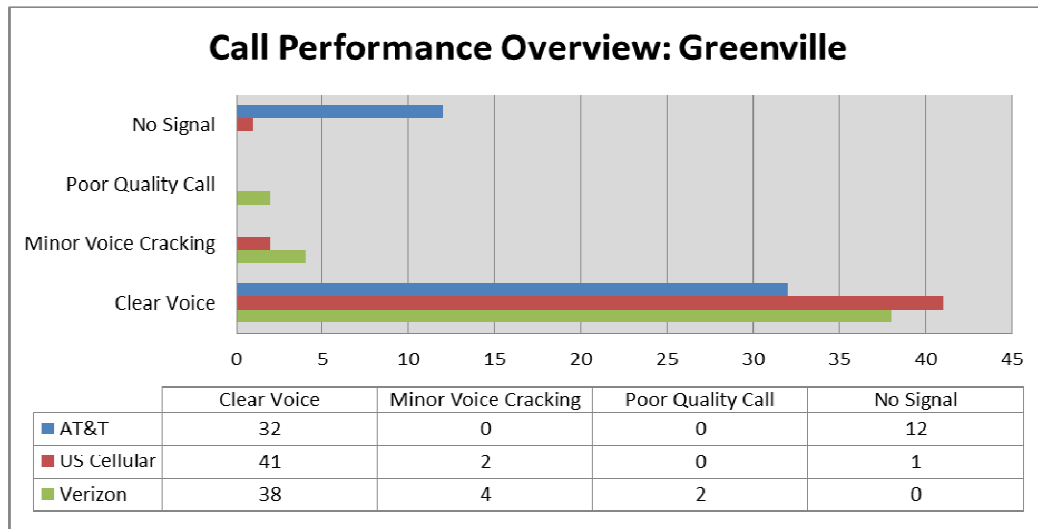


Figure 3-6: Call Performance Overview: Greenville Exchange

Signal strength in the exchange overall appears to be relatively high as compared to the other exchanges (Figures 3-7–3-9).



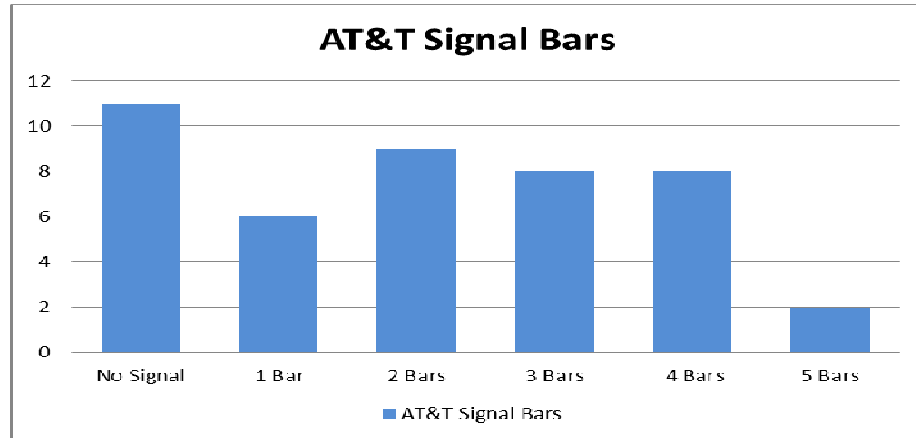


Figure 3-7: AT&T Signal Bars in the Greenville Exchange

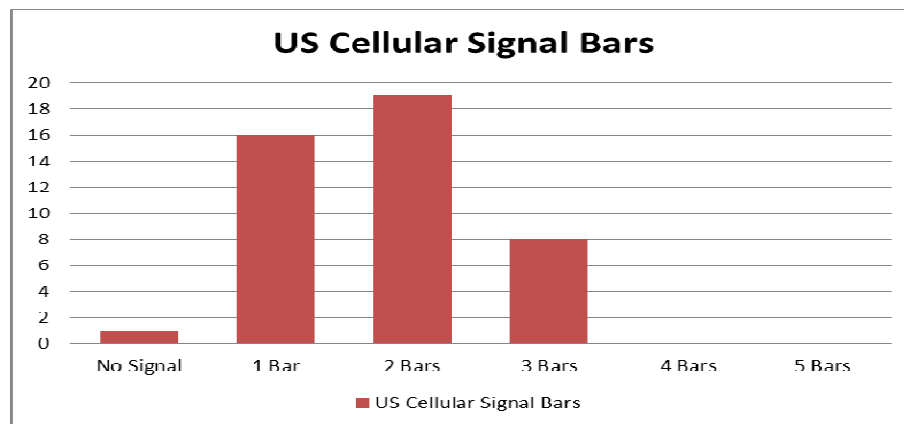


Figure 3-8: US Cellular Signal Bars in the Greenville Exchange

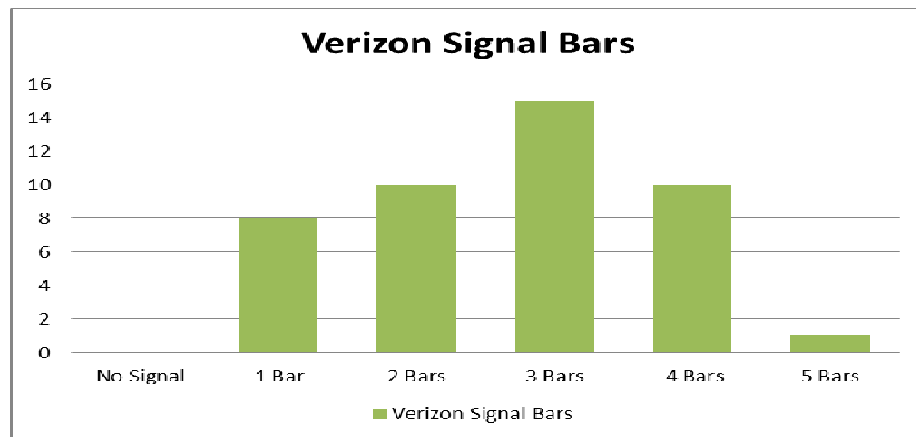
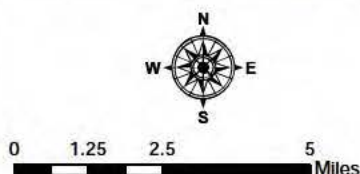
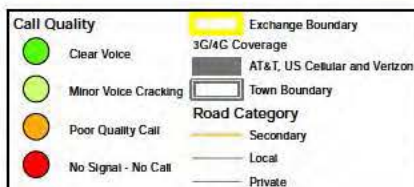
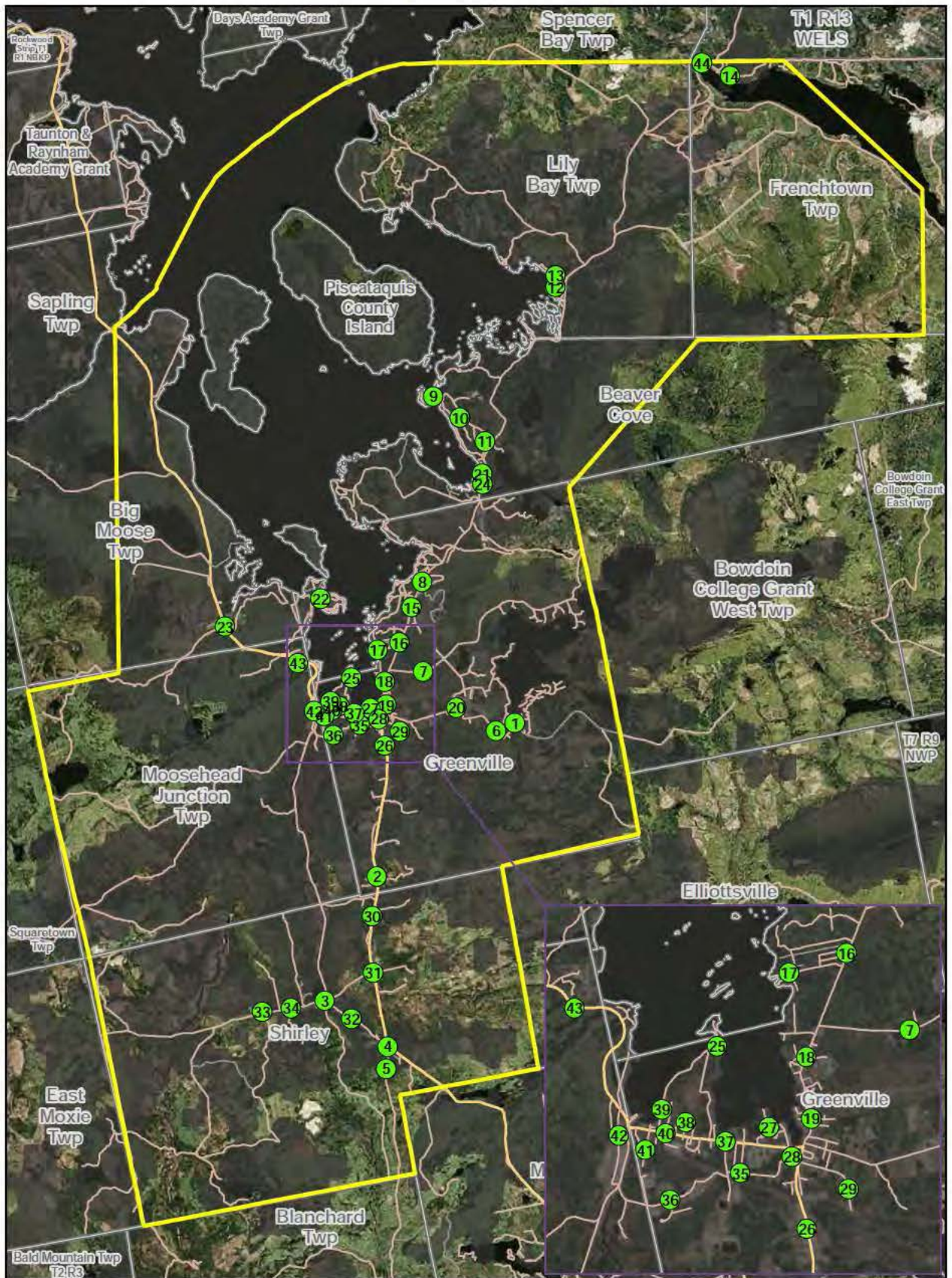


Figure 3-9: Verizon Signal Bars in the Greenville Exchange

All 44 test locations had at least one call with a clear voice connection from one of the carriers (Figure 3-10). Among all carriers, voice coverage was thus 100 percent (44 out of 44), with 100 percent clear voice connections.

Exchange Analysis: Greenville

Test Site Best Call Quality From AT&T, US Cellular and Verizon



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerognd, IGN, IGP, swisstopo, and the GIS User Community

Maps showing the call performance of each carrier at test locations in the Greenville exchange are provided in the Appendix (Figures A-4–A-6).

3.3 JACKMAN EXCHANGE

Cellphone coverage testing in the Jackman exchange was conducted at 43 outdoor sites in the following areas:

- Jackman (all of the town)
- Johnson Mountain Township
- Long Pond Township
- Parlin Pond Township
- Sandy Bay Township
- Attean Township (northeast corner)
- Bald Mountain Township T4 R3 (small portion of southwest corner)
- Dennistown Plantation (northeast half)
- Misery Gore Township (western tip)
- Moose River (western half)
- Upper Enchanted Township (small section eastern boundary)

A total of 129 outdoor field tests were conducted, 43 each for each of the three carriers. Results of the tests indicate the following (Figure 3-11):

- None of the AT&T calls (0 out of 43) achieved a connection
- 83.7% of the US Cellular calls (36 out of 43) had a clear connection
- 79.1% of the Verizon calls (34 out of 43) had a clear connection

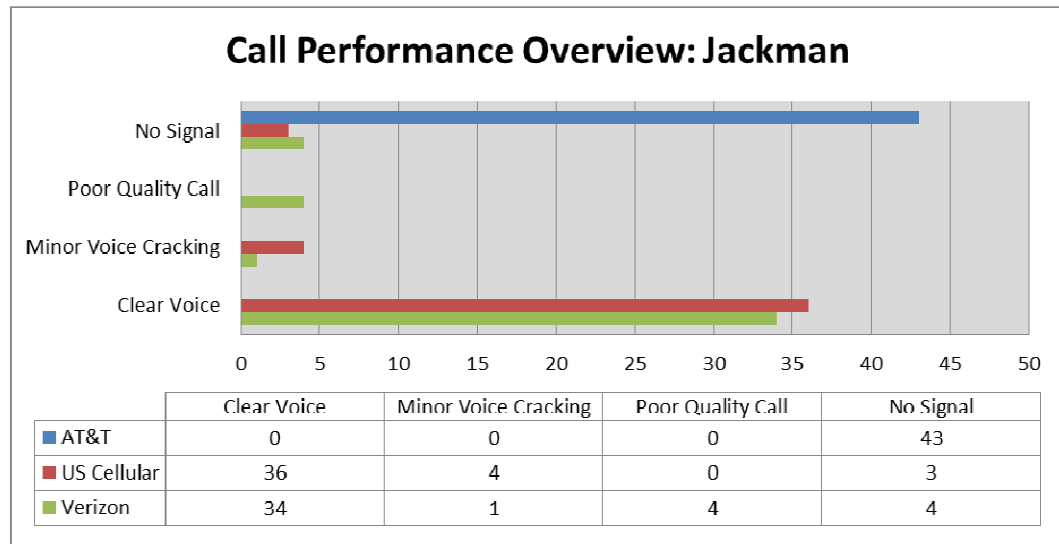


Figure 3-11: Call Performance Overview: Jackman Exchange

Signal bar strength of each of the carriers is shown in Figures 3-12–3-14. These results in general support the results in call performance.

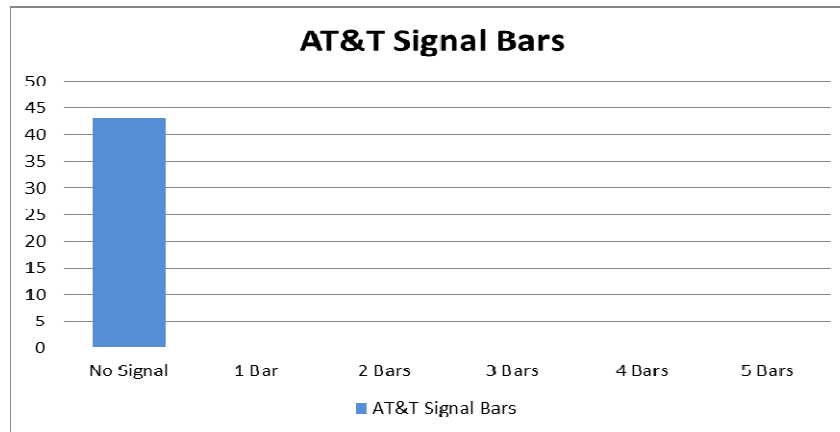


Figure 3-12: AT&T Signal Bars in the Jackman Exchange

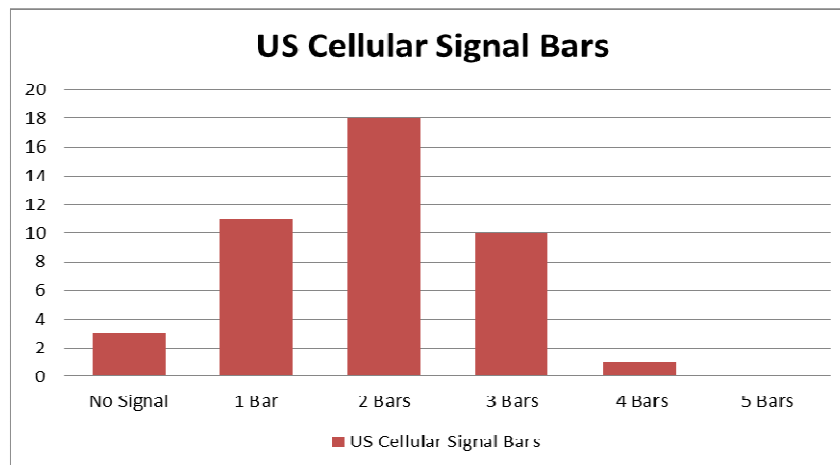


Figure 3-13: US Cellular Signal Bars in the Jackman Exchange

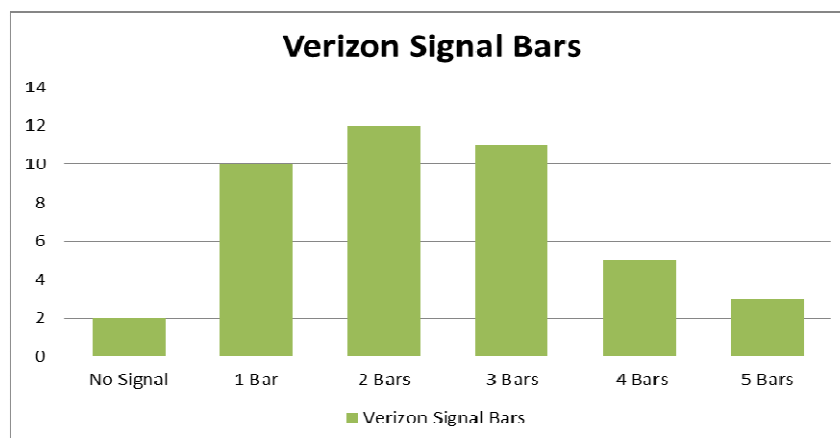
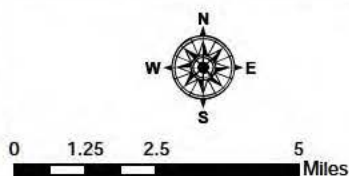
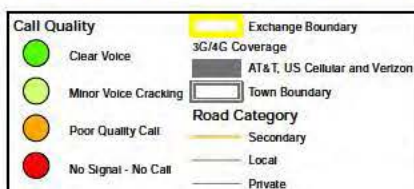
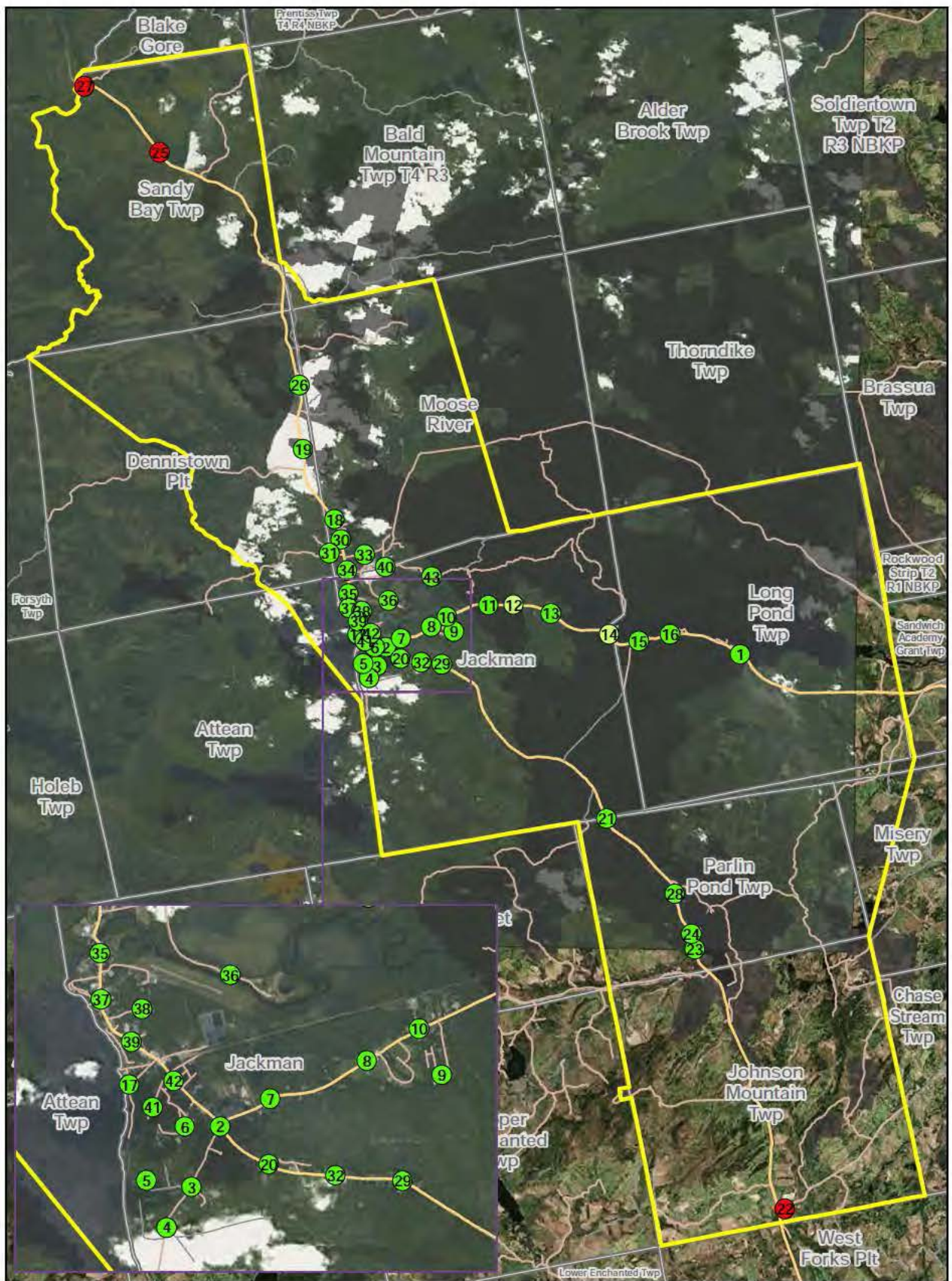


Figure 3-14: Verizon Signal Bars in the Jackman Exchange

Exchange Analysis: Jackman

Test Site Best Call Quality From AT&T, US Cellular and Verizon



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

As Figure 3-15 shows, no calls by any carrier were completed successfully in Sandy Bay Township (2 locations), the northernmost town in the Jackman exchange. Neither was any call completed in Johnson Mountain Township (1 location), the southernmost town in the exchange. Two calls of degraded quality (minor voice cracking) were completed in Jackman.

Among all carriers, the highest level of call completion in the Jackman exchange was 93 percent (40 out of 43 locations), 95 percent of which were clear voice connections (38 out of 40), and 5 percent had minor voice cracking (2 out of 40).

Maps showing the call performance of each carrier at test locations in the Jackman exchange are provided in the Appendix (Figures A-7–A-10).

3.4 RANGELEY EXCHANGE

Cellular voice coverage testing in the Rangeley exchange was conducted at 46 outdoor locations in the following areas:

- Rangeley (all of the town)
- Dallas Plantation¹¹
- Davis Township
- Rangeley Plantation
- Sandy River Plantation
- Adamstown Township (northeast corner)
- Lang Township (all except northeast corner)
- Lower Cupsuptic Township (eastern third)
- Stetsontown Township (southwest corner)

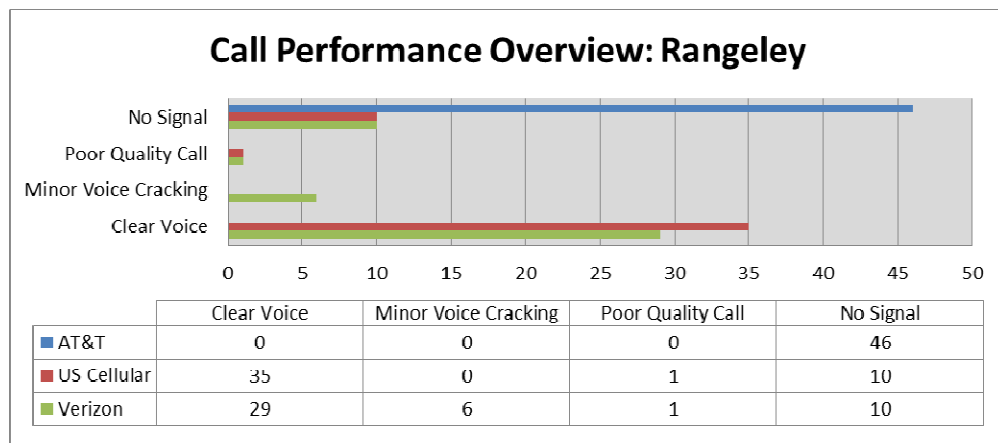


Figure 3-16: Call Performance Overview: Rangeley Exchange

¹¹ Tests originally planned in the Gull Pond area of Dallas Plantation were excluded due to lack of vehicle access.

A total of 138 field tests were conducted, 46 each for the three carriers. Results of the tests indicate the following (Figure 3-16):

- None of the AT&T calls (0 out of 46) achieved a connection
- 76.1 percent of US Cellular calls (35 out of 46) had a clear voice connection
- 63.0% of Verizon calls (29 out of 46) had a clear voice connection
- All three carriers shared the same 10 test locations with no signal/no connection

Signal bar strength of each of the carriers is shown in Figures 3-17–3-19. Although the signal bars indicate that Verizon signal strength was greatest in the test areas, US Cellular had the higher percentage of clear voice call connections.

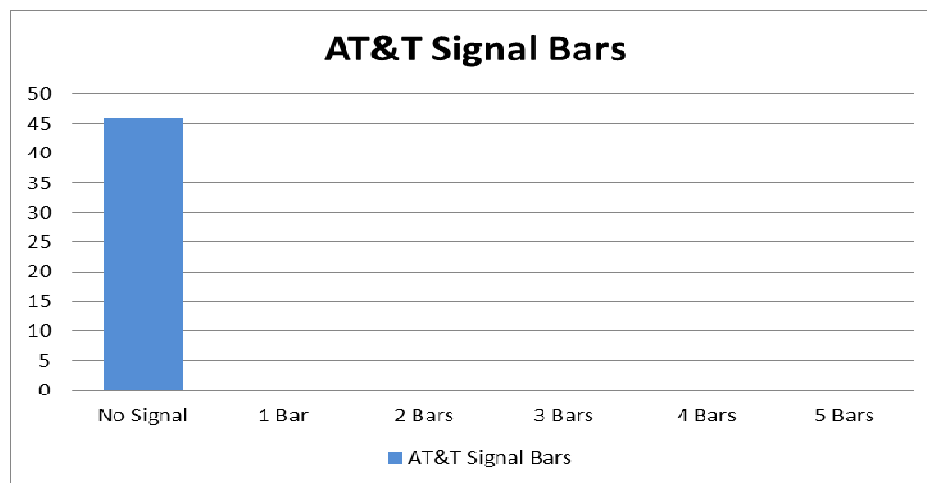


Figure 3-17: AT&T Signal Bars in the Rangeley Exchange

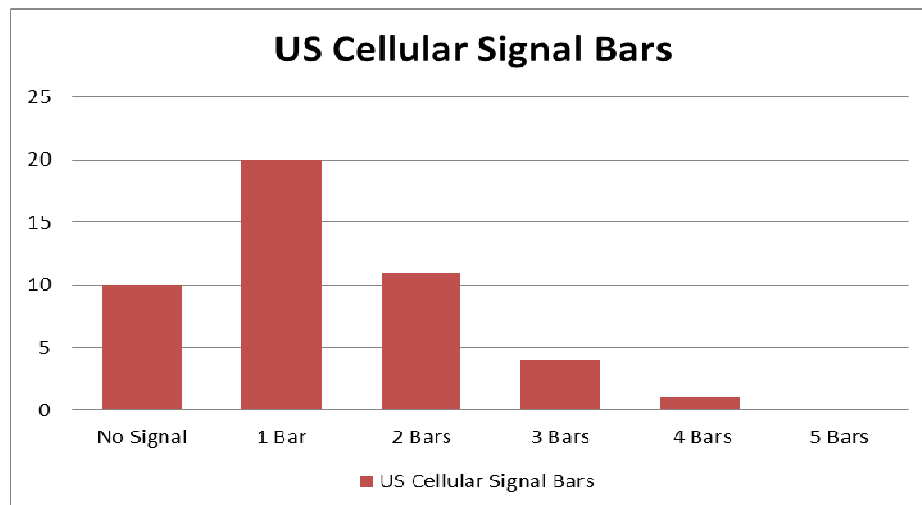


Figure 3-18: US Cellular Signal Bars in the Rangeley Exchange

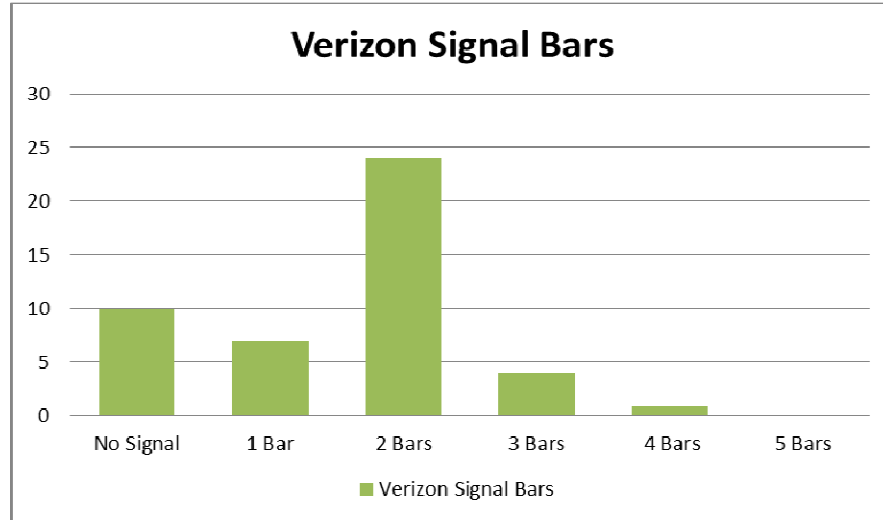


Figure 3-19: Verizon Signal Bars in the Rangeley Exchange

As Figure 3-20 shows, no calls were successfully completed in 10 test locations of the exchange (7 in central and western Sandy River Plantation, 2 in Rangeley Plantation, and 1 in northwestern Dallas Plantation). Among two carriers, the remaining 36 calls were completed with clear voice connections. The highest level of call completion in the Rangeley exchange was thus 78.3 percent (36 out of 46 locations), 100 percent of which were clear voice connections.

Maps showing the call performance of each carrier at test locations in the Rangeley exchange are provided in the Appendix (Figures A-11–A-13).

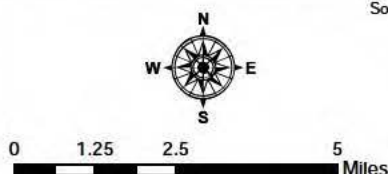
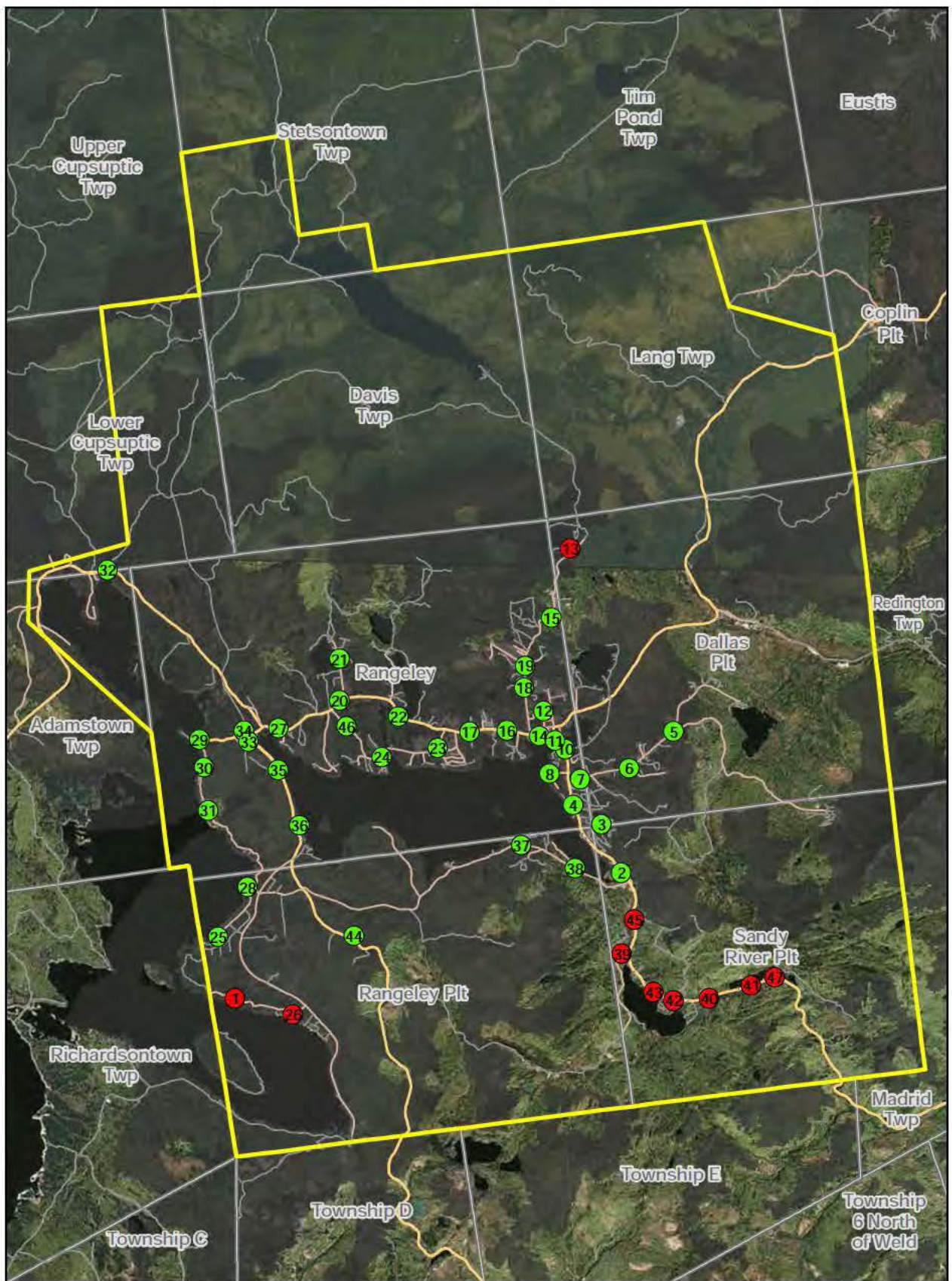
3.5 SEDGWICK EXCHANGE

Cellular coverage testing in the Sedgwick exchange was conducted at 43 call locations, two of which were indoors, in the following areas:

- Brooklin (all of the town)
- Sedgwick (all but the northwest corner)
- Brooksville (southeast corner)
- Tremont (westernmost islands)

Exchange Analysis: Rangeley

Test Site Best Call Quality From AT&T, US Cellular and Verizon



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerognd, IGN, IGP, swisstopo, and the GIS User Community

A total of 129 tests were conducted, 43 for each carrier, with the following results (Figure 3-21):

- 95.3 percent of AT&T calls (41 out of 43) had a clear voice connection
- 81.4 percent of US Cellular calls (35 out of 43) had a clear voice connection
- 72.1 percent of Verizon calls (31 out of 43) had a clear voice connection

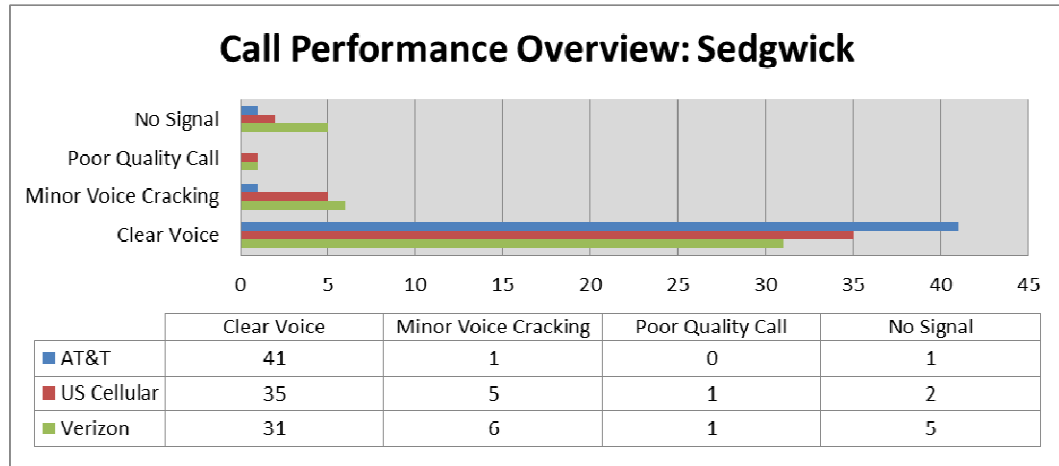


Figure 3-21: Call Performance Overview: Sedgwick Exchange

Signal bar strength of each of the carriers in this exchange, shown in Figures 3-22–3-24, is relatively high.

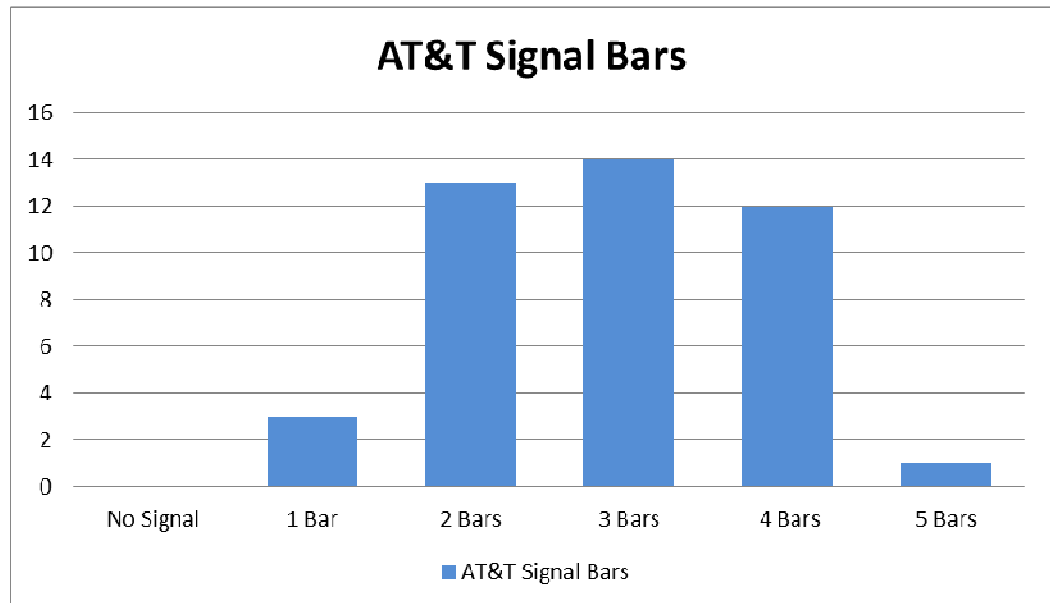


Figure 3-22: AT&T Signal Bars in the Sedgwick Exchange

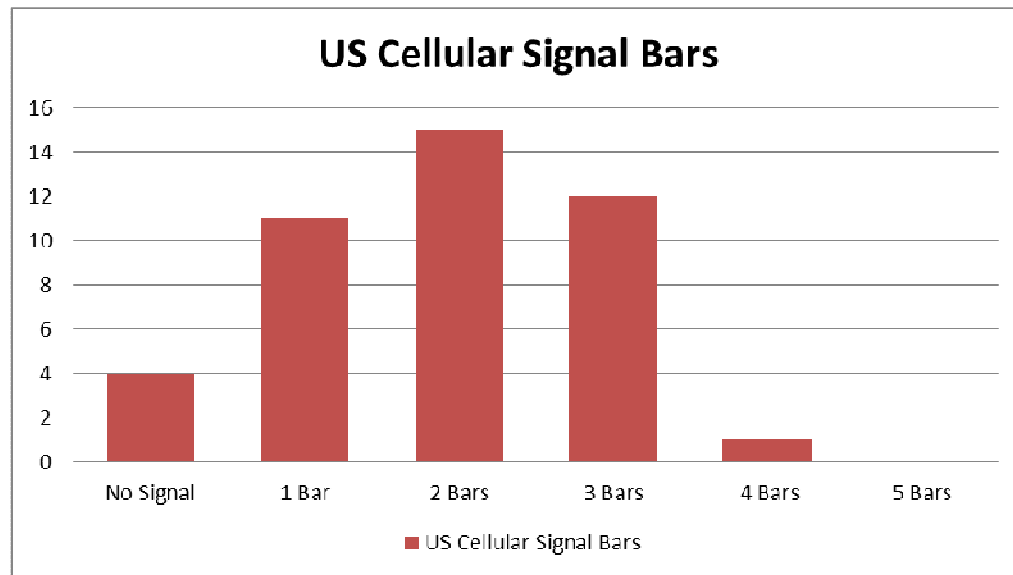


Figure 3-23: US Cellular Signal Bars in the Sedgwick Exchange

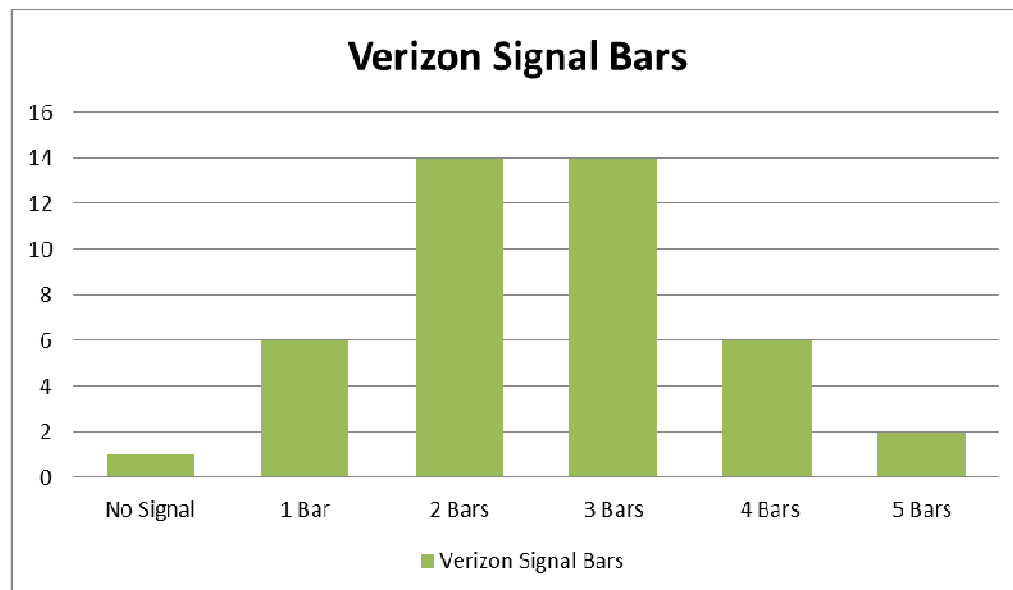
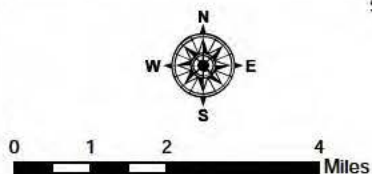
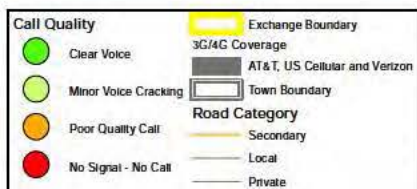
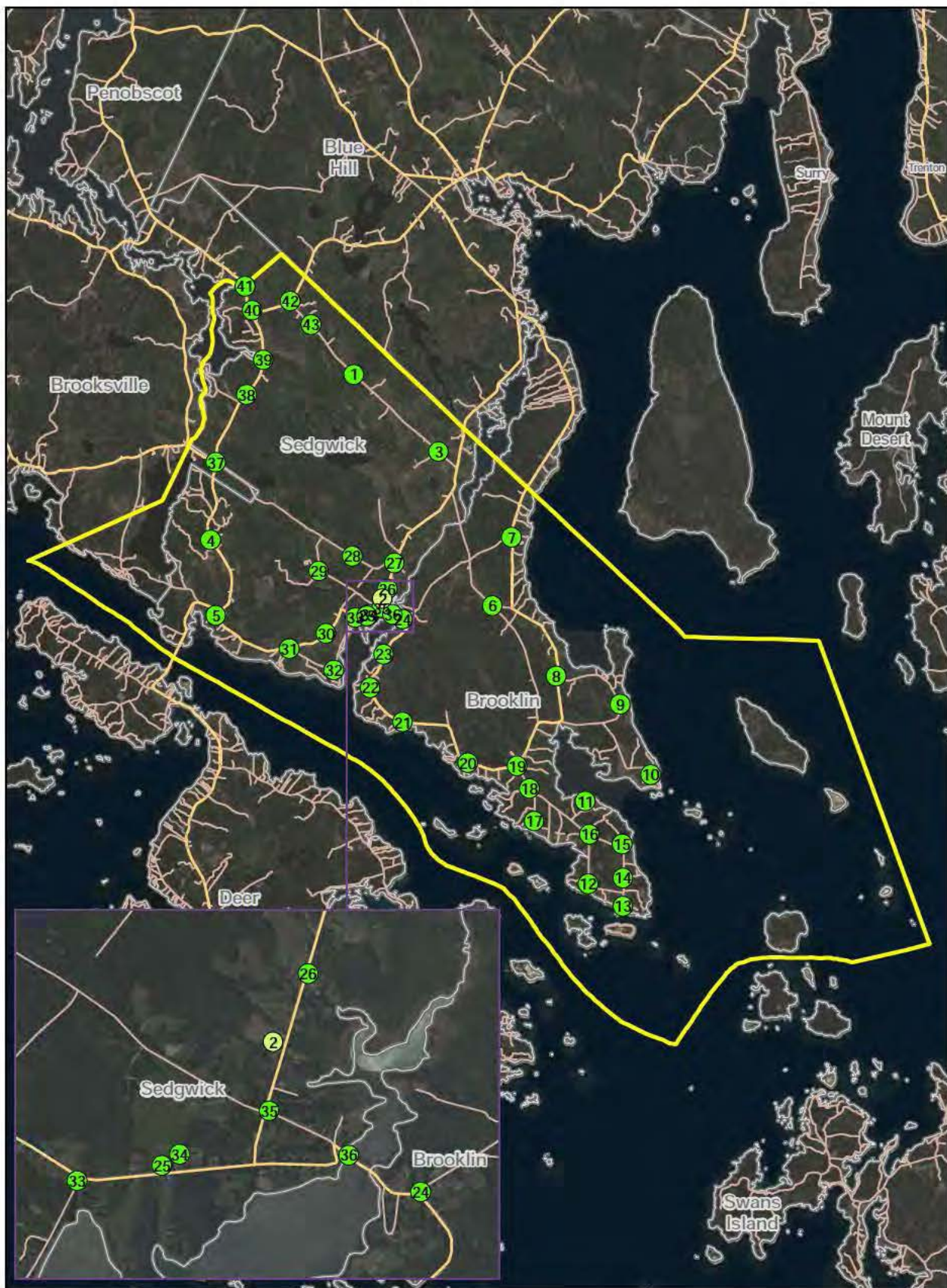


Figure 3-24: Verizon Signal Bars in the Sedgwick Exchange

As Figure 3-25 shows, 42 out of 43 test locations had at least one call with a clear voice connection from one of the carriers. The test location with minor voice cracking was inside the town office building. The highest level of call completion among all carriers in the Sedgwick exchange was 100 percent (43 out of 43 locations), 97.7 percent of which were clear voice connections (42 out of 43); 2.3 percent of which had minor voice cracking (1 out of 43).

Exchange Analysis: Sedgwick

Test Site Best Call Quality From AT&T, US Cellular and Verizon



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Maps showing the call performance of each carrier at test locations in the Sedgwick exchange are provided in the Appendix (Figures A-14–A-16).

3.6

SUMMARY

A summary of the highest level of completed call performance among all carriers achieved in each exchange is shown in Table 3-1:

Table 3-1: Summary of Completed Call Performance Among All Carriers by Exchange

Exchange	Calls Completed (%)	Clear Voice (%)	Minor Voice Cracking (%)	Poor Quality Call (%)
Bingham	88%	90.9%	4.5%	4.5%
Greenville	100%	100%	--	--
Jackman	93%	95%	5%	
Rangeley	78.3%	100%	--	--
Sedgwick	100%	97.7%	2.3%	--

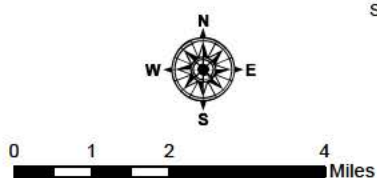
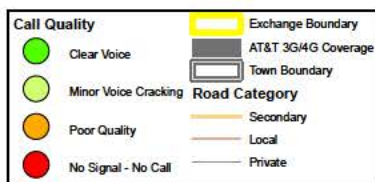
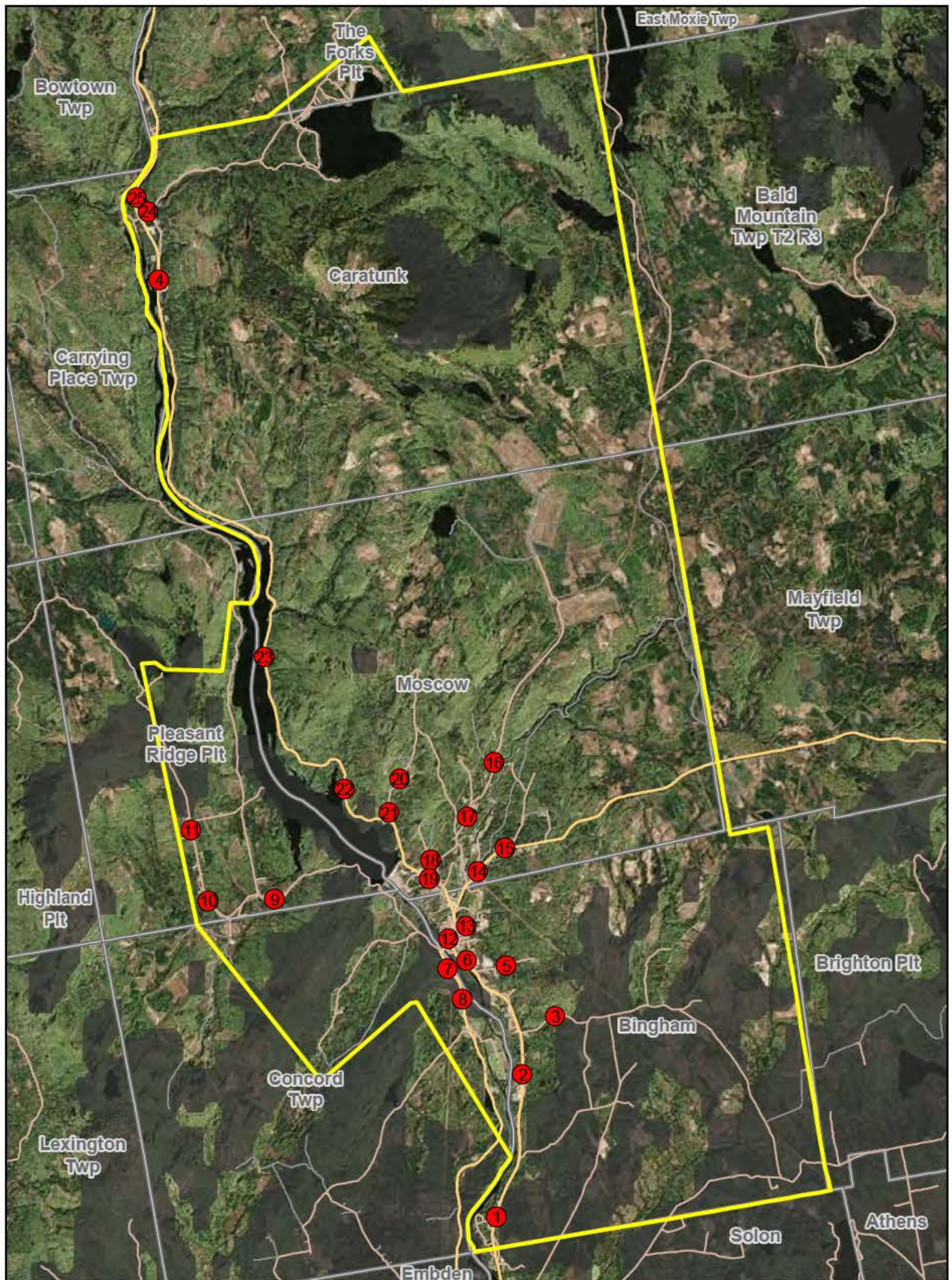
Appendix A. Additional Maps

Maps showing the call performance of each of the three carriers at sites within the five exchanges are provided in this appendix. They include:

- Exchange Analysis: Bingham. AT&T (ZTE Compel)
- Exchange Analysis: Bingham. US Cellular (Motorola G)
- Exchange Analysis: Bingham. Verizon Wireless (Motorola X)
- Exchange Analysis: Greenville. AT&T (ZTE Compel)
- Exchange Analysis: Greenville. US Cellular (Motorola G)
- Exchange Analysis: Greenville. Verizon Wireless (Motorola X)
- Exchange Analysis: Jackman. AT&T (ZTE Compel)
- Exchange Analysis: Jackman. US Cellular (Motorola G)
- Exchange Analysis: Jackman. Verizon Wireless (Motorola X)
- Exchange Analysis: Rangeley. AT&T (ZTE Compel)
- Exchange Analysis: Rangeley. US Cellular (Motorola G)
- Exchange Analysis: Rangeley. Verizon Wireless (Motorola X)
- Exchange Analysis: Sedgwick. AT&T (ZTE Compel)
- Exchange Analysis: Sedgwick. US Cellular (Motorola G)
- Exchange Analysis: Sedgwick. Verizon Wireless (Motorola X)

Exchange Analysis: Bingham

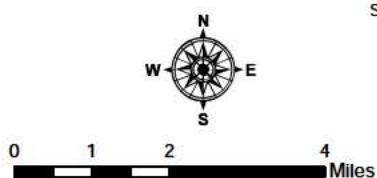
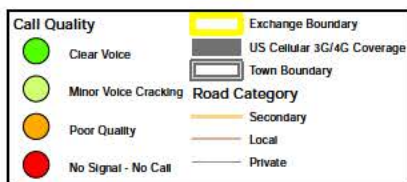
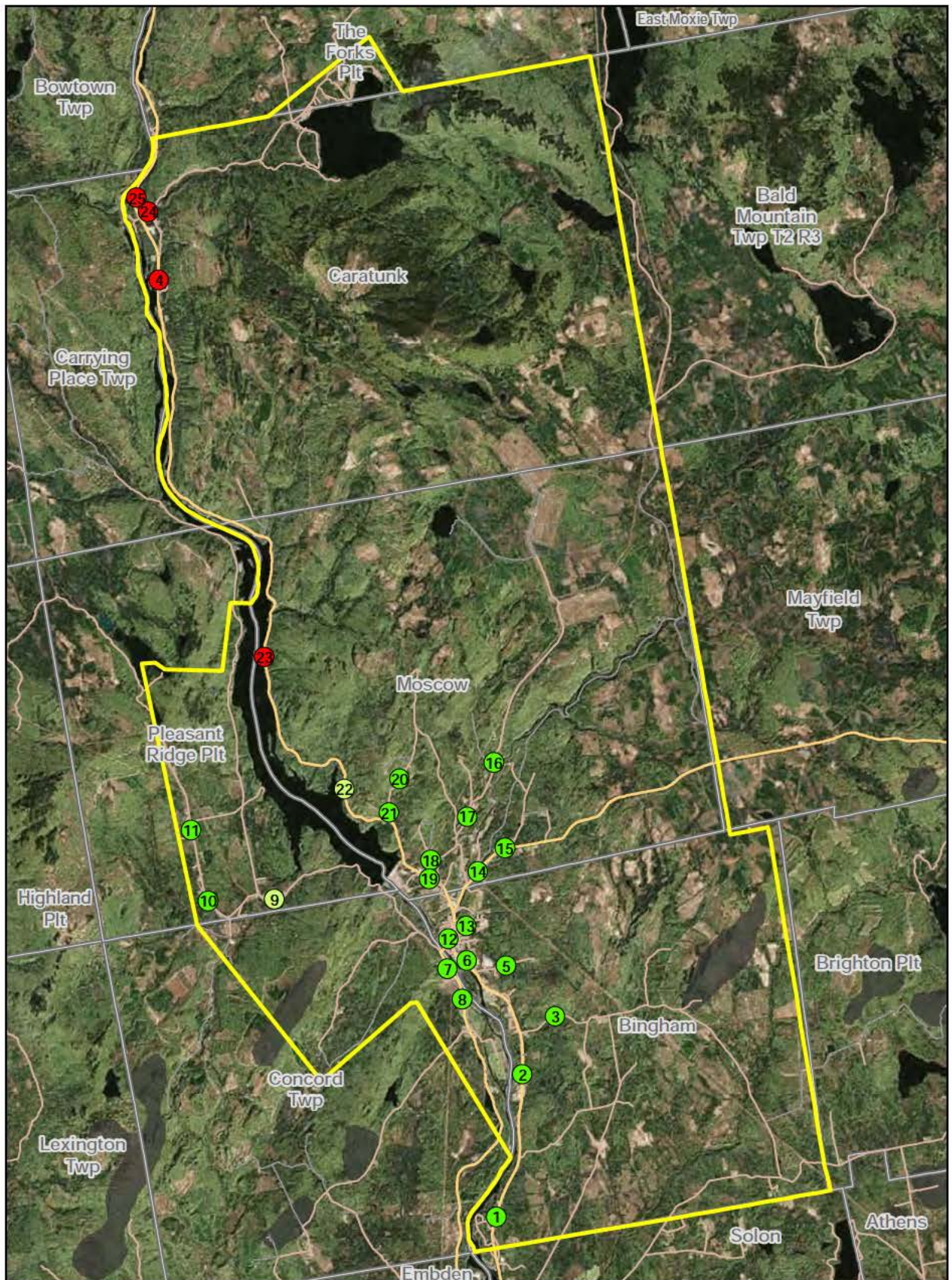
AT&T (ZTE Compel)



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Bingham

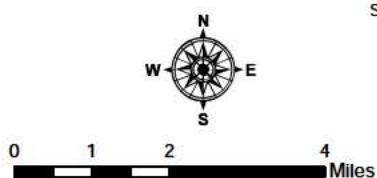
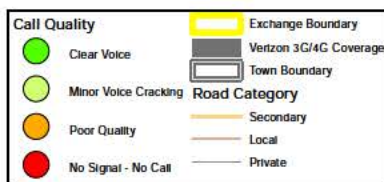
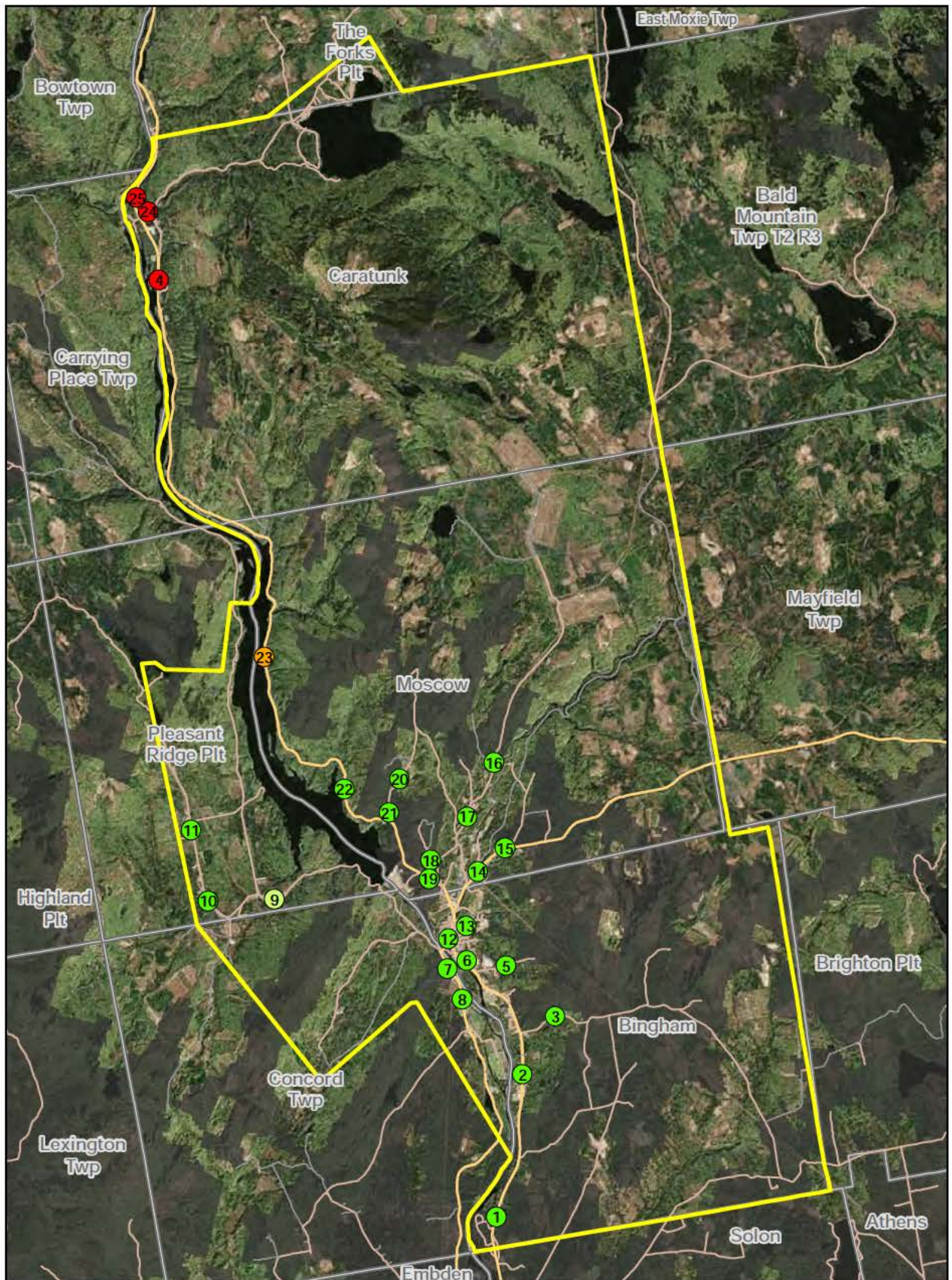
US Cellular (Motorola G)



Sources: Test Points - Tilson Technologies
 Wireless broadband coverage - ConnectME Authority
 Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Bingham

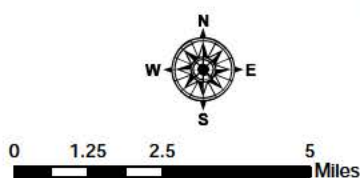
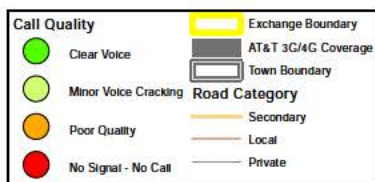
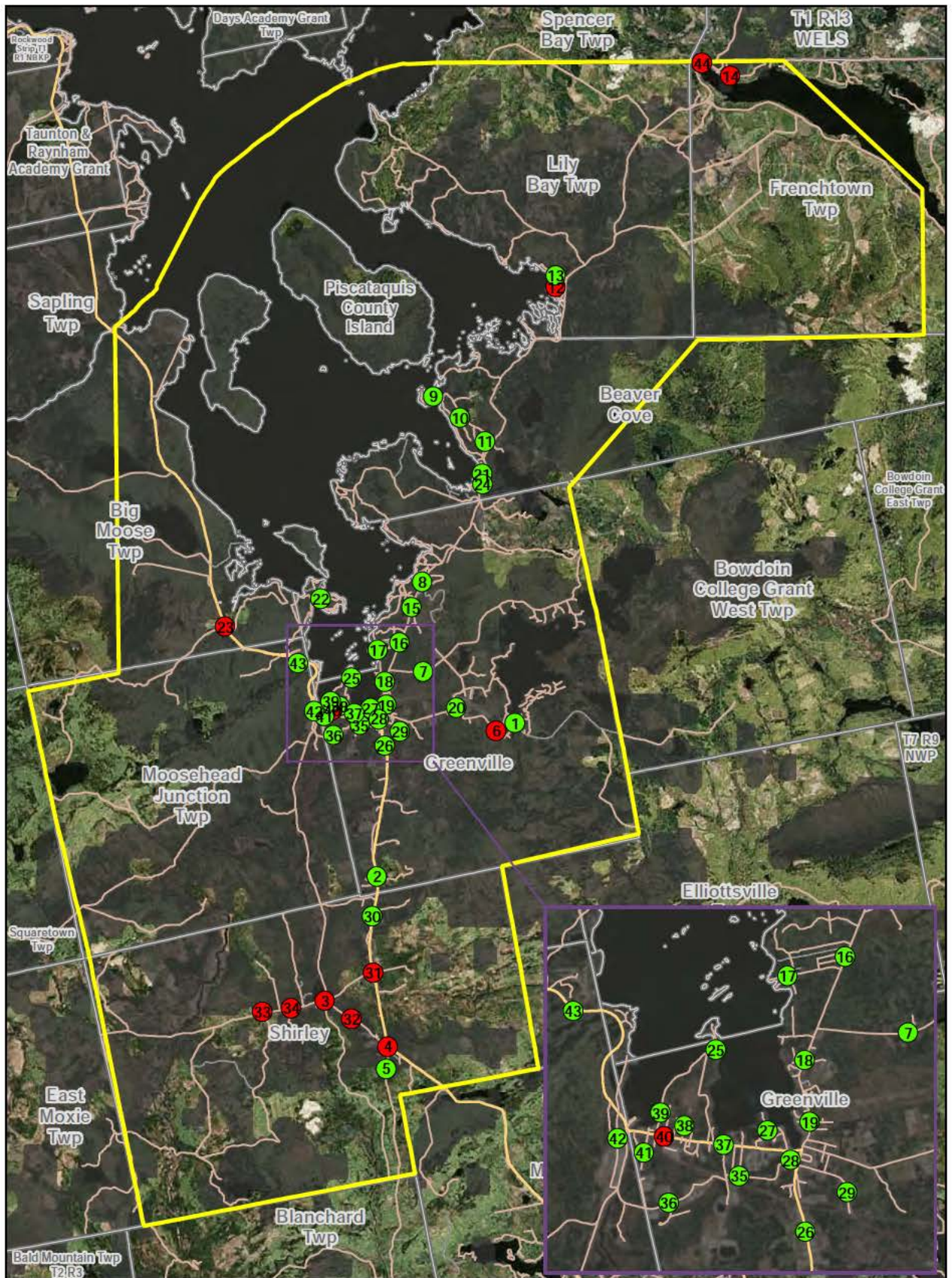
Verizon Wireless (Motorola X)



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerognd, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Greenville

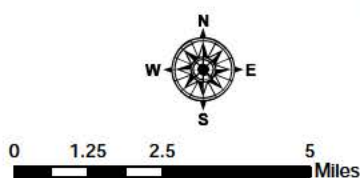
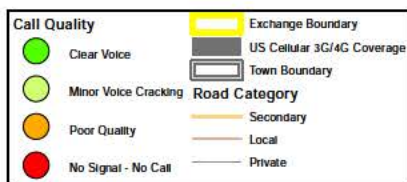
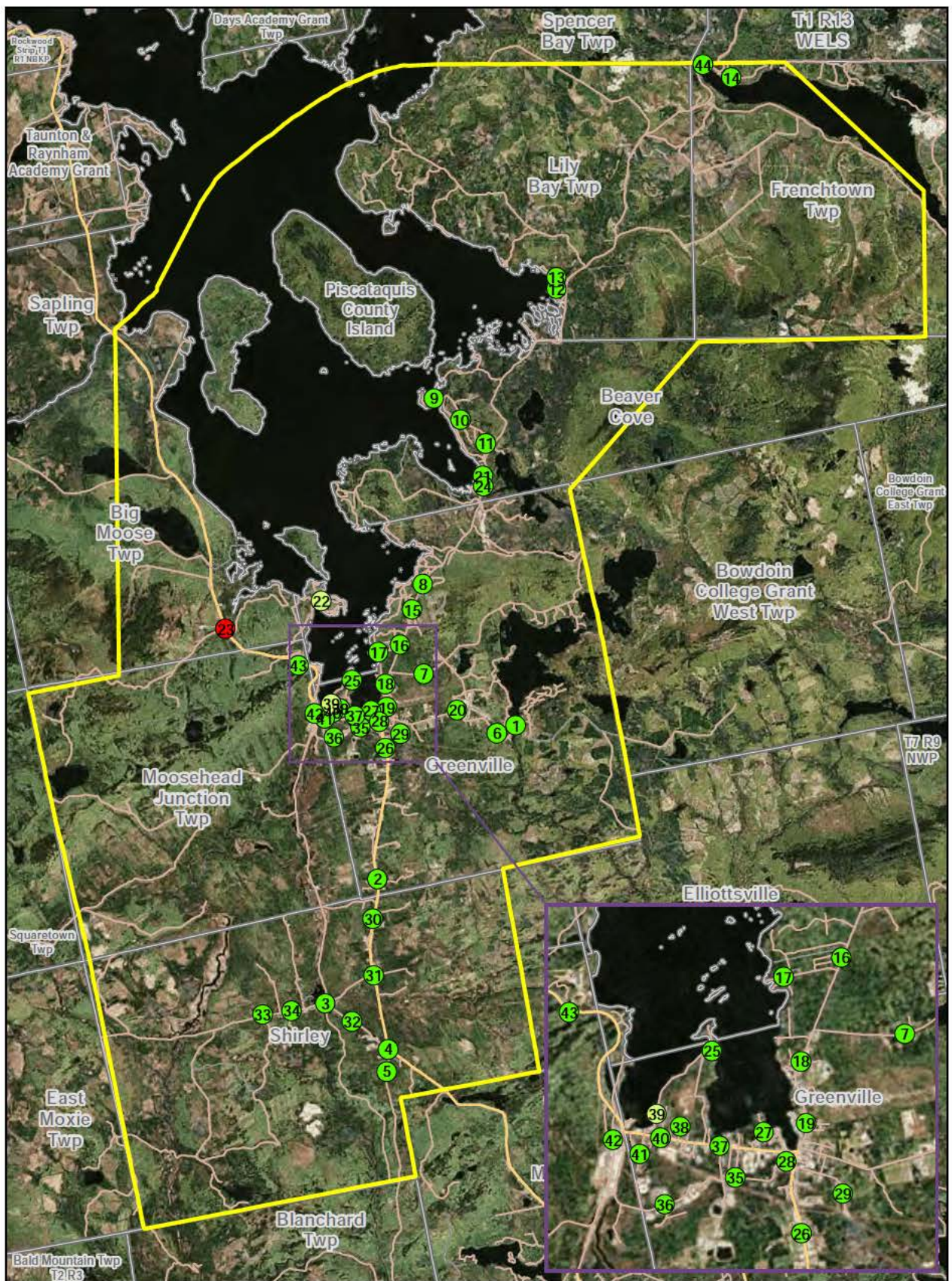
AT&T (ZTE Compel)



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerognd, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Greenville

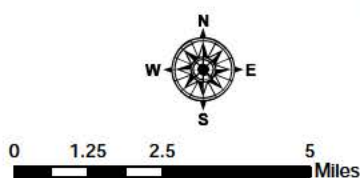
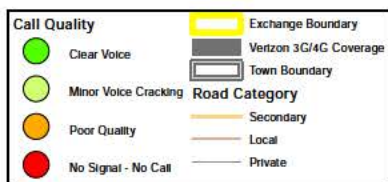
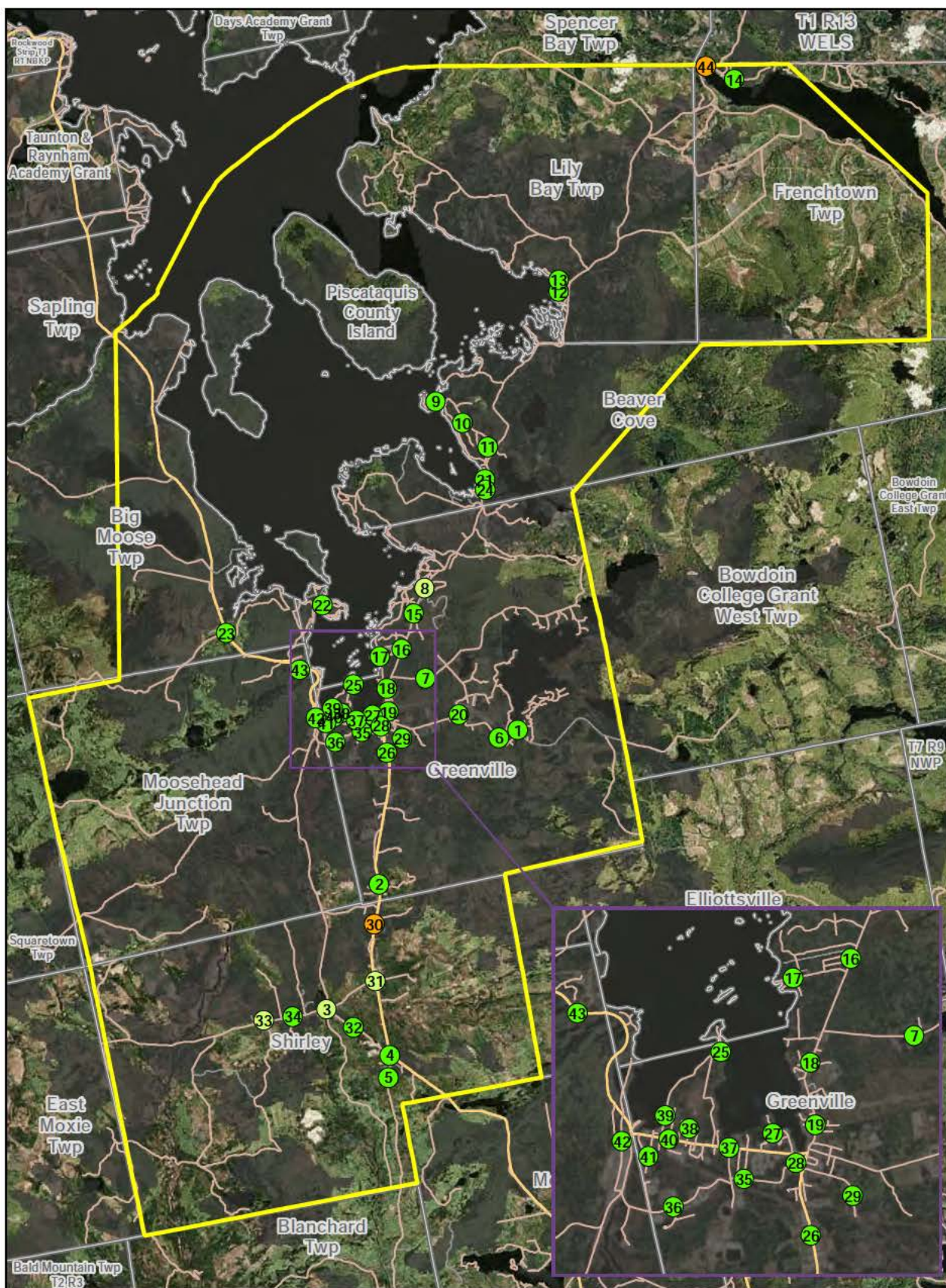
US Cellular (Motorola G)



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerognd, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Greenville

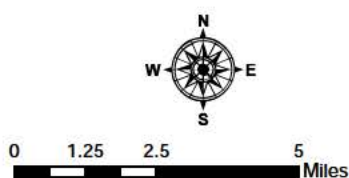
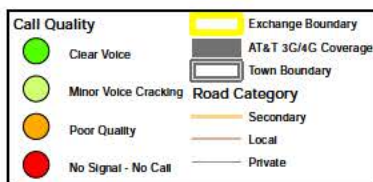
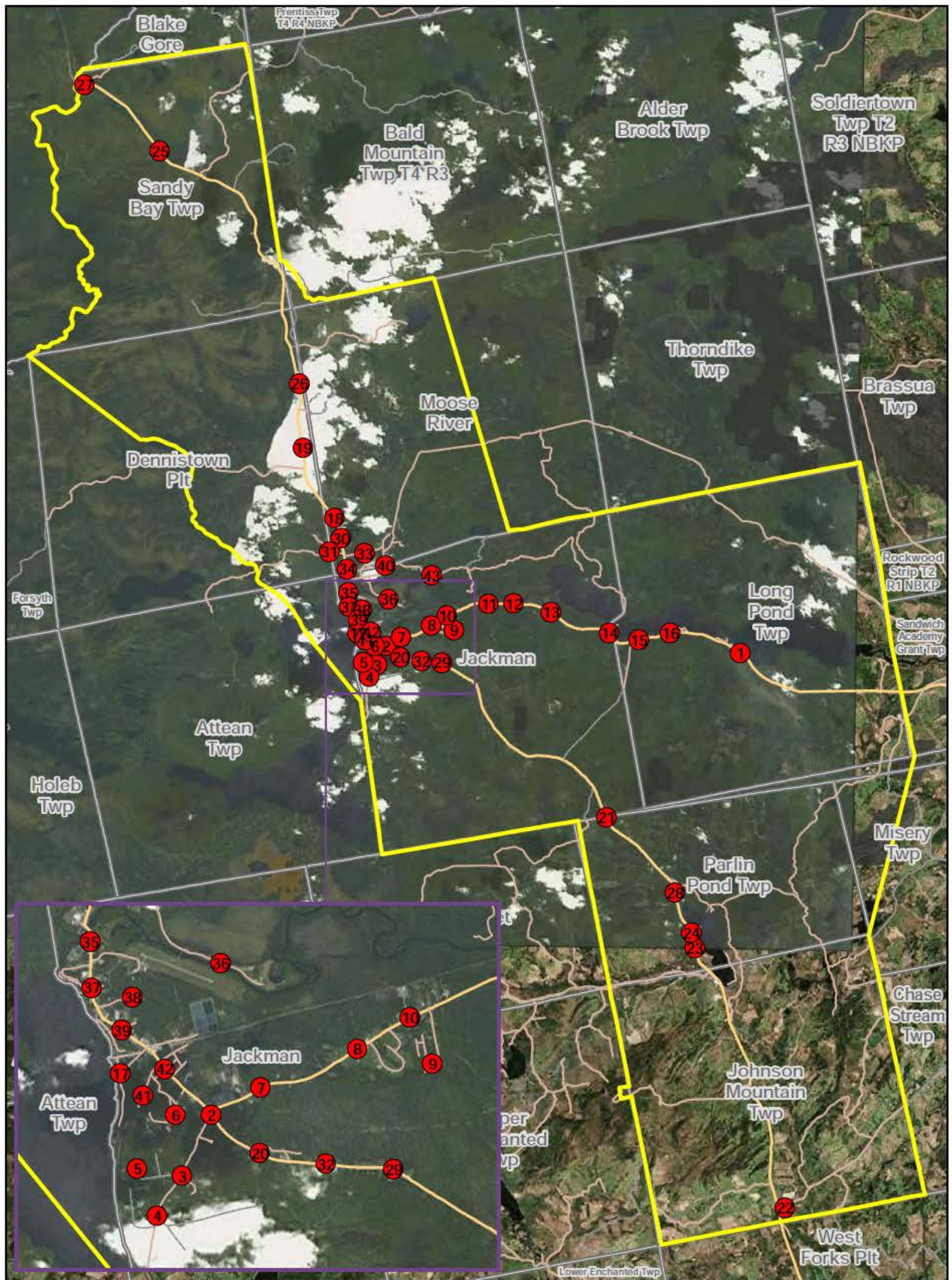
Verizon Wireless (Motorola X)



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerognd, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Jackman

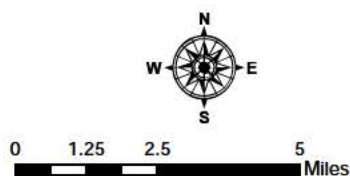
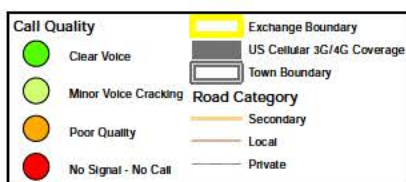
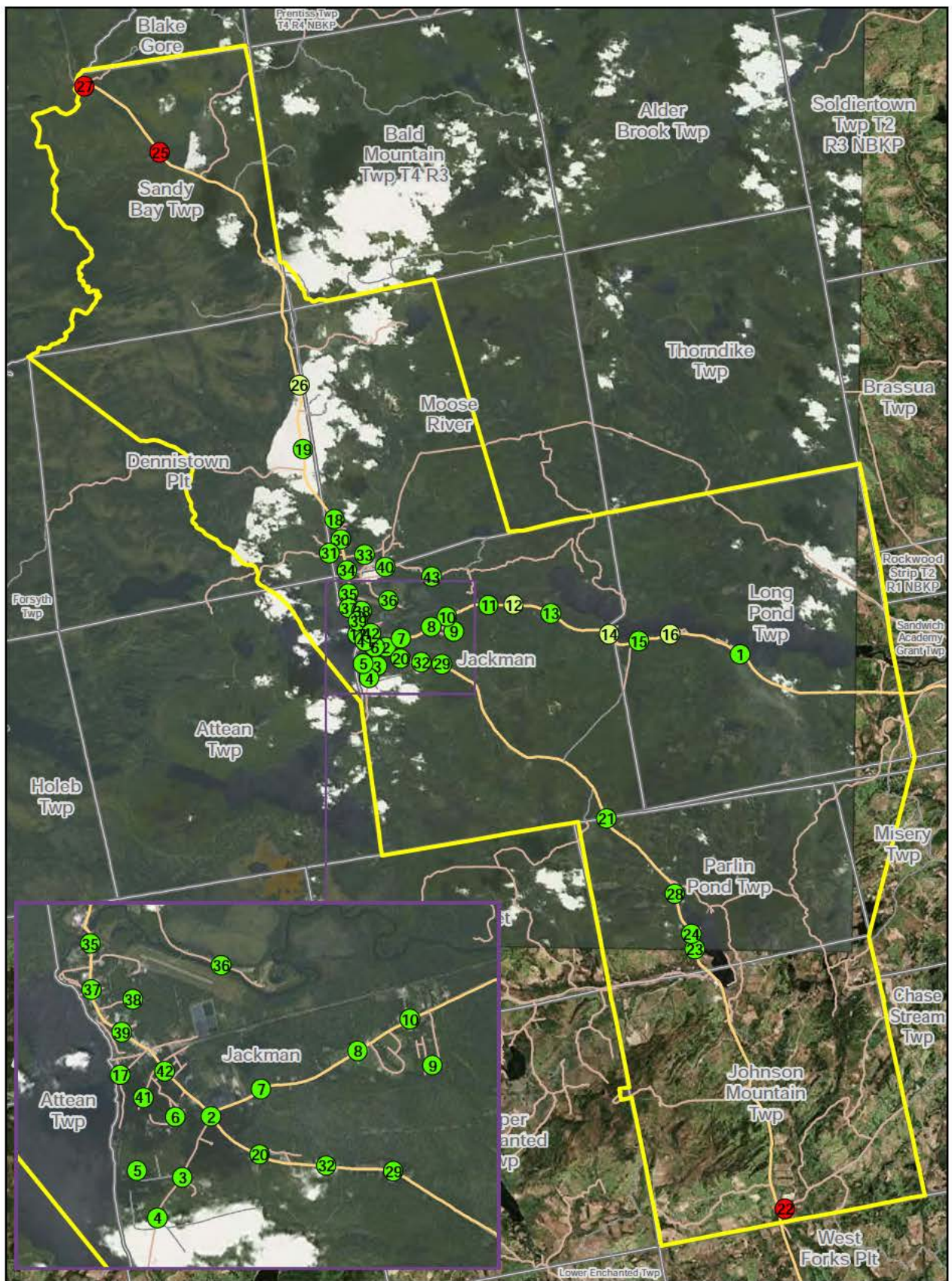
AT&T (ZTE Compel)



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerognd, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Jackman

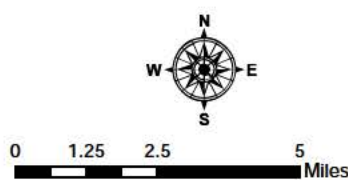
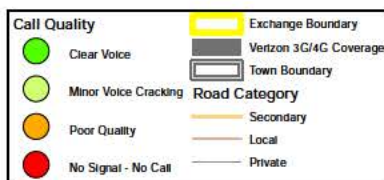
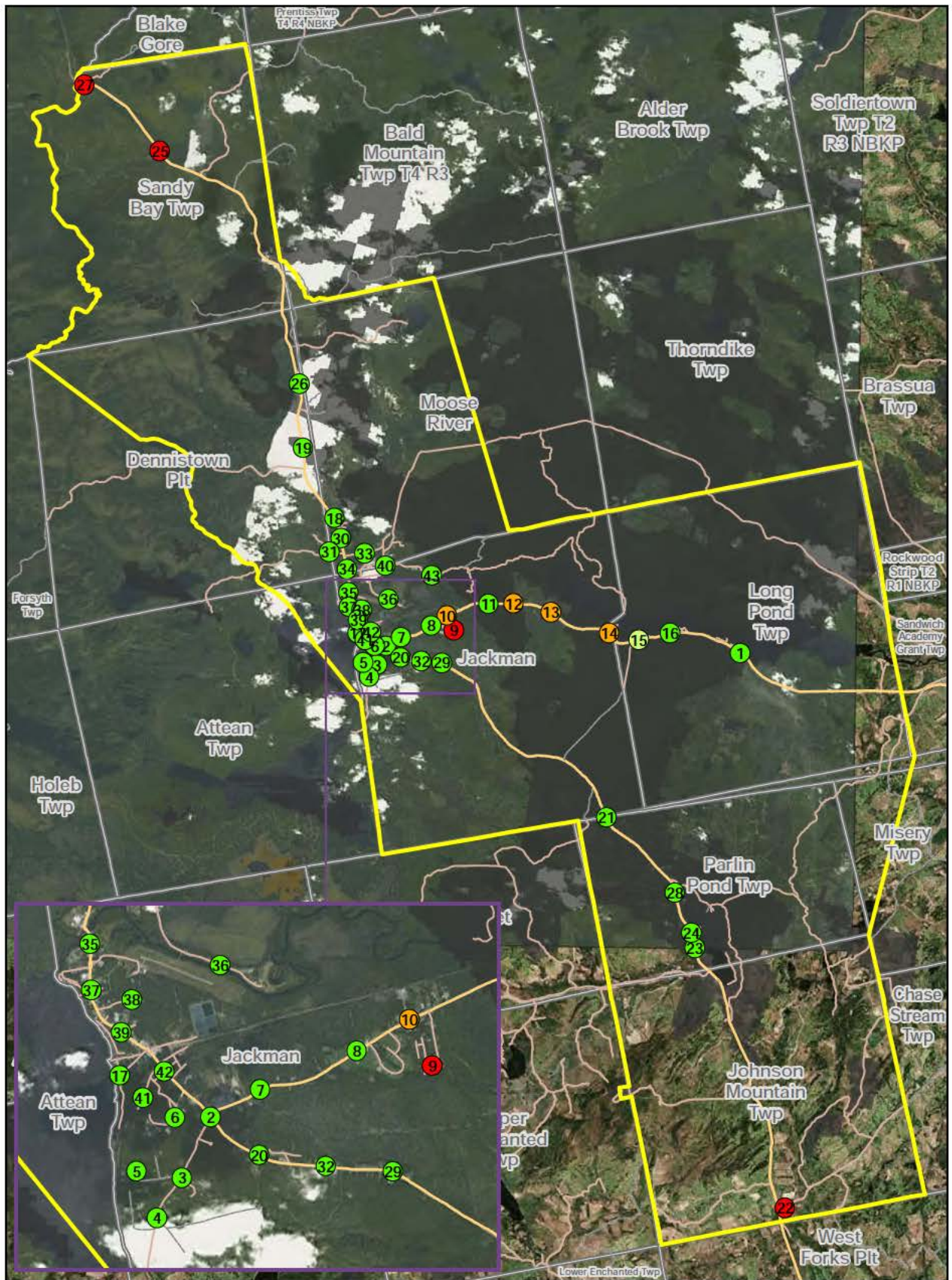
US Cellular (Motorola G)



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Jackman

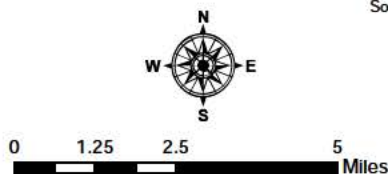
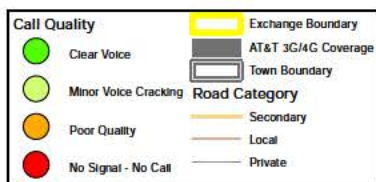
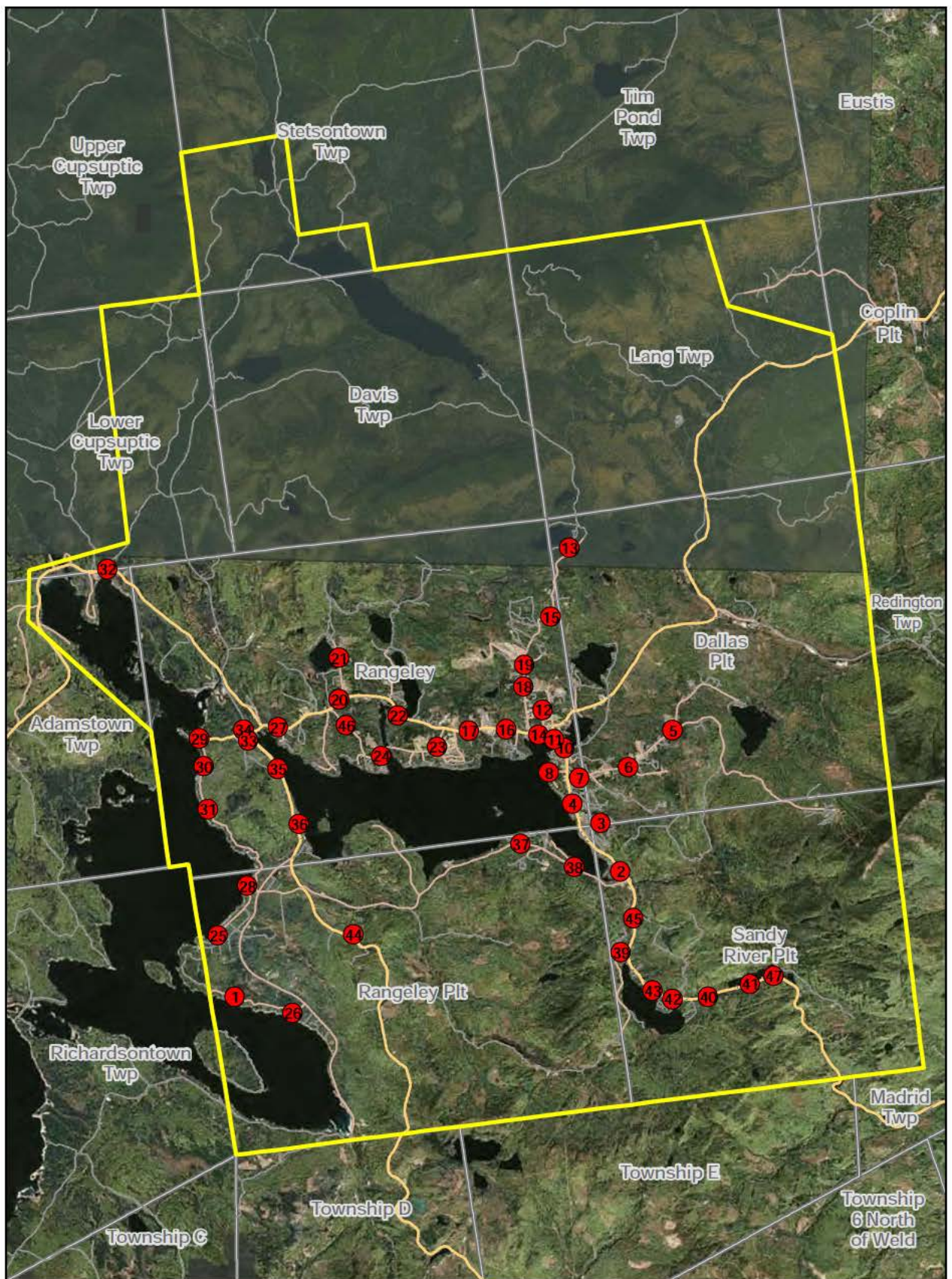
Verizon Wireless (Motorola X)



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Rangeley

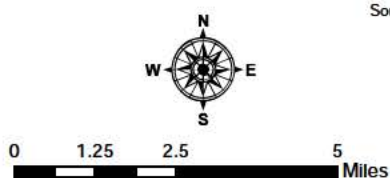
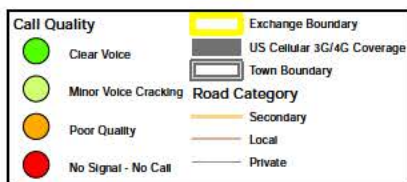
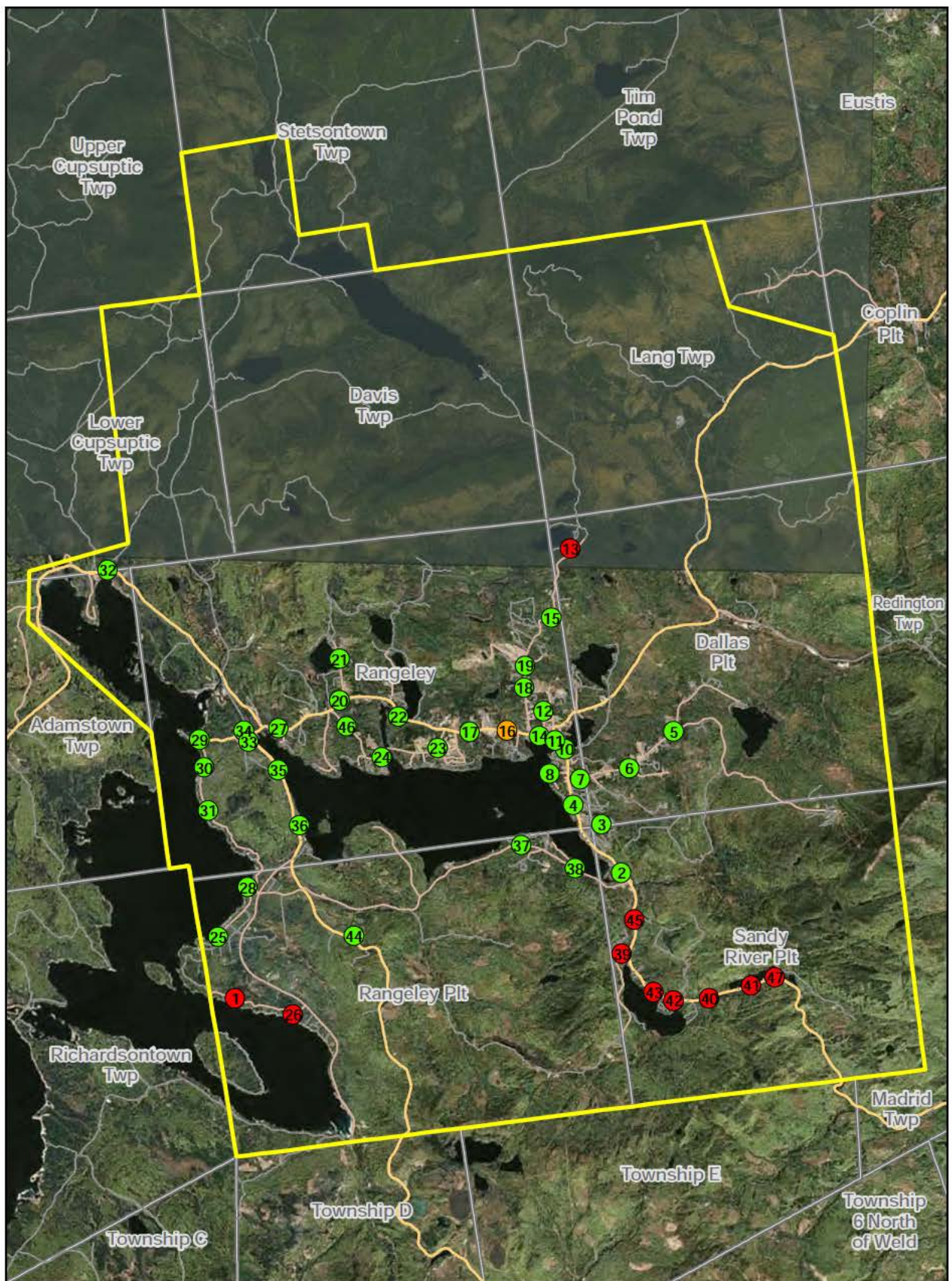
AT&T (ZTE Compel)



Sources: Test Points - Tilson Technologies
 Wireless broadband coverage - ConnectME Authority
 Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Rangeley

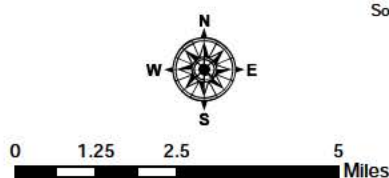
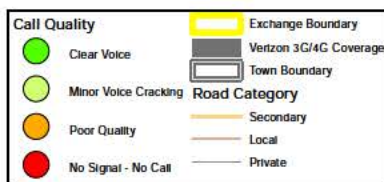
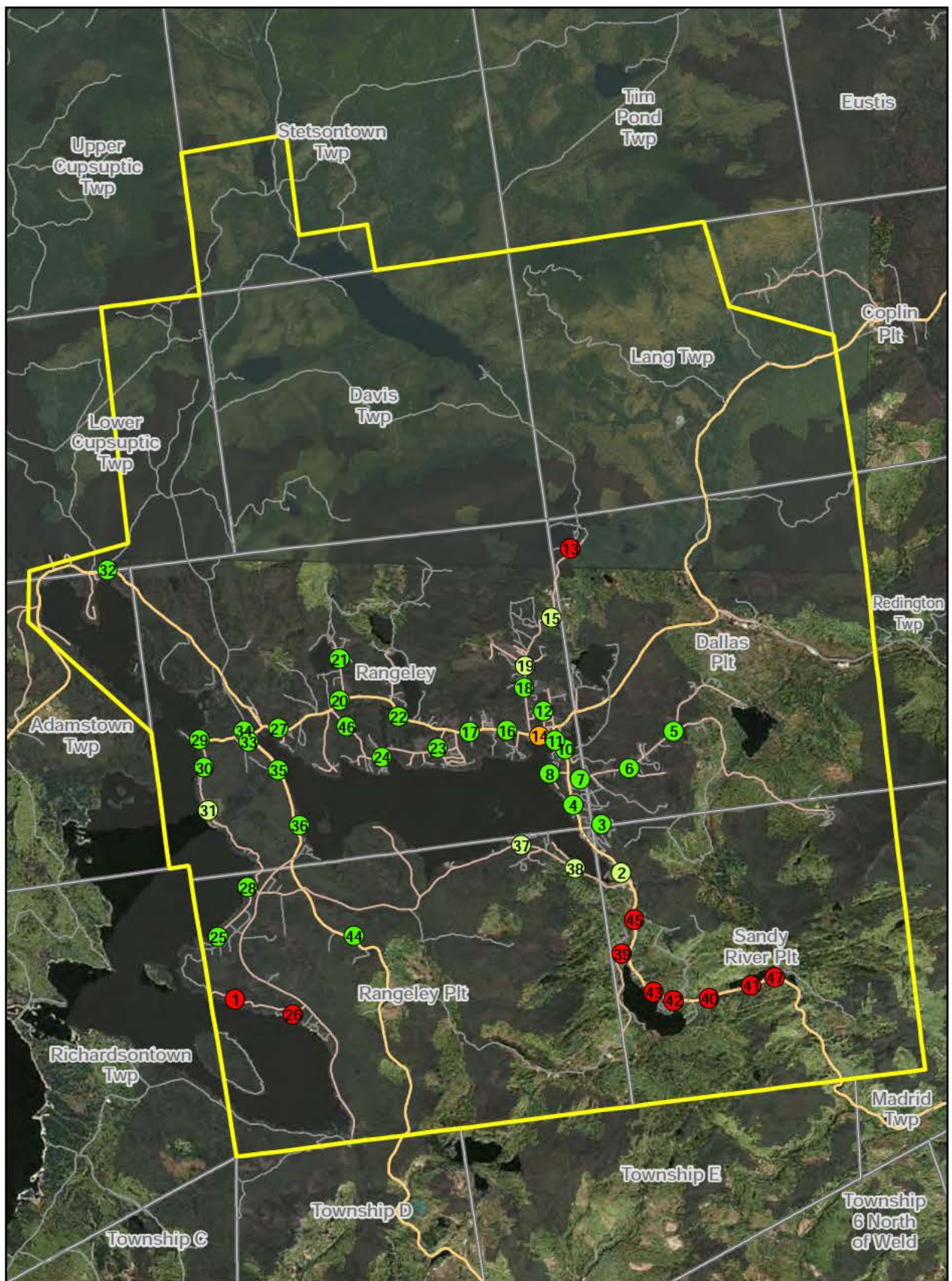
US Cellular (Motorola G)



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Rangeley

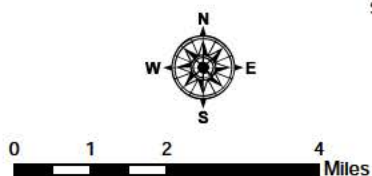
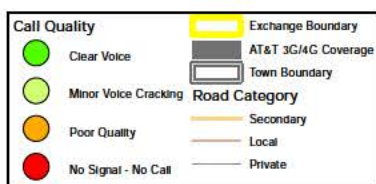
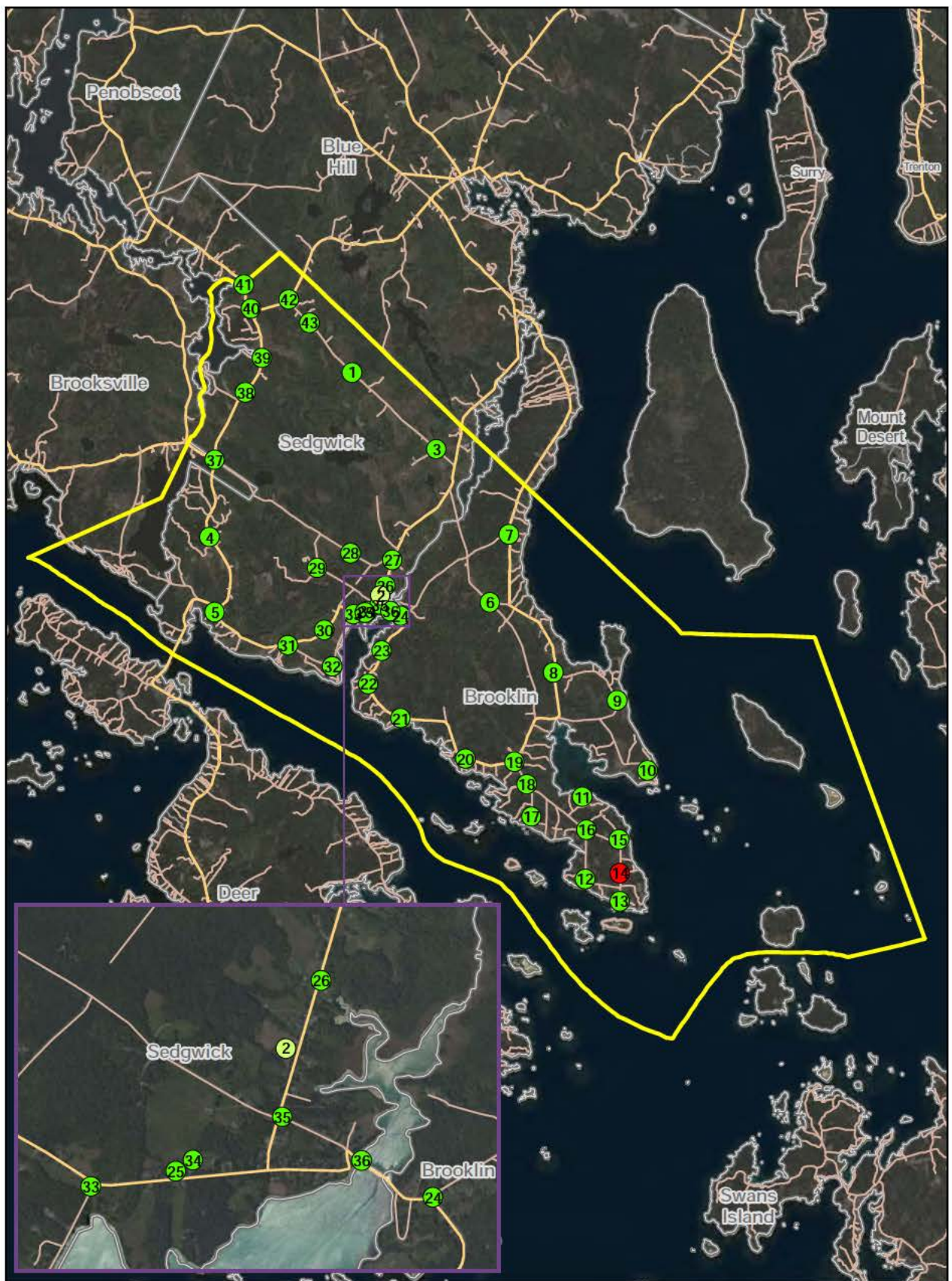
Verizon Wireless (Motorola X)



Sources: Test Points - Tilson Technologies
 Wireless broadband coverage - ConnectME Authority
 Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA,
 USGS, AEX, Getmapping, Aerognd, IGN, IGP,
 swisstopo, and the GIS User Community

Exchange Analysis: Sedgwick

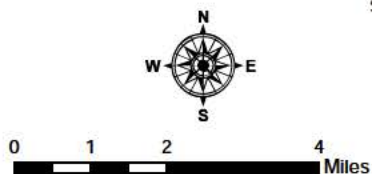
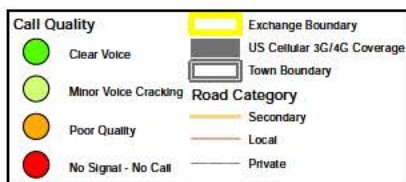
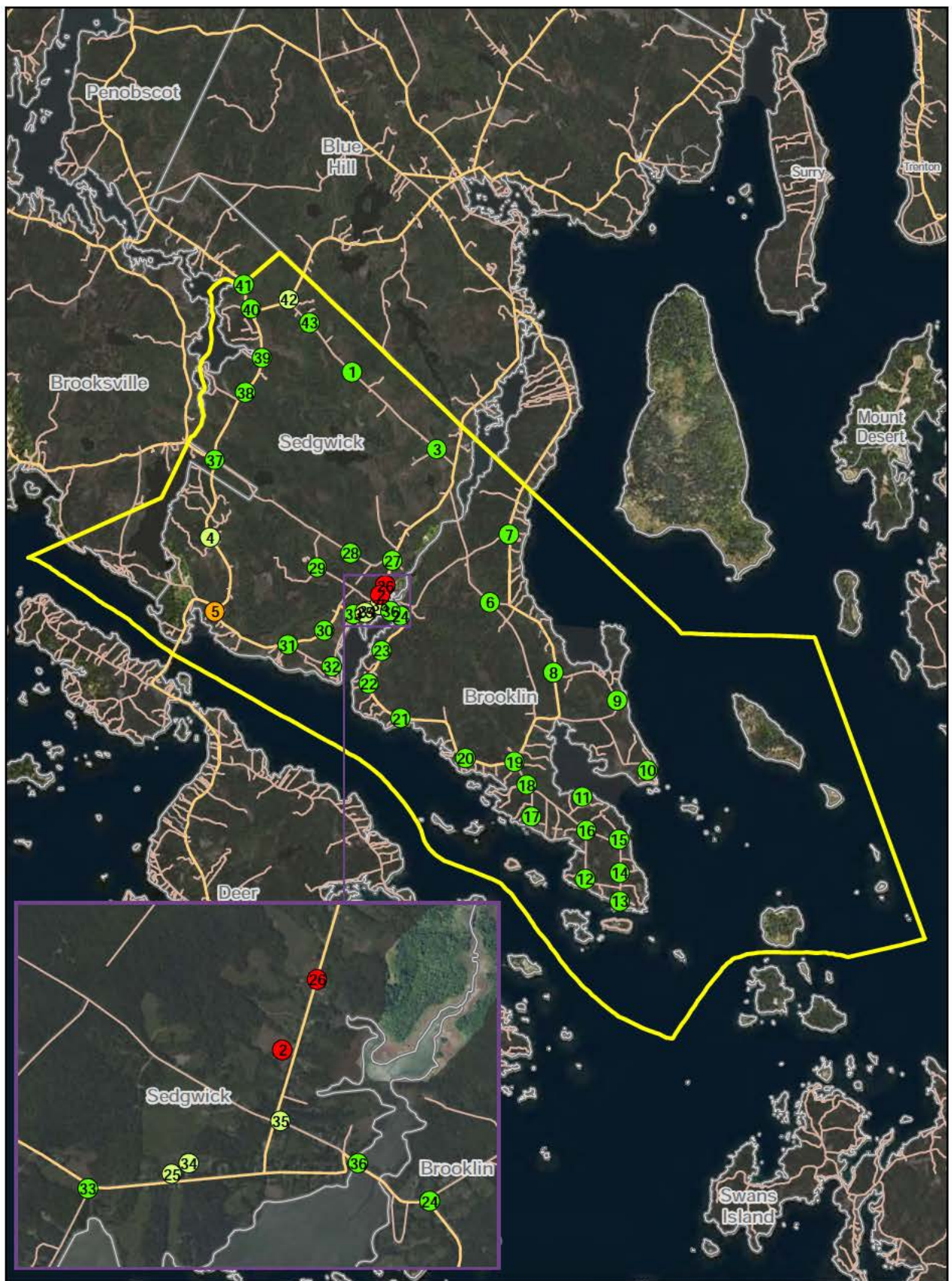
AT&T (ZTE Compel)



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Sedgwick

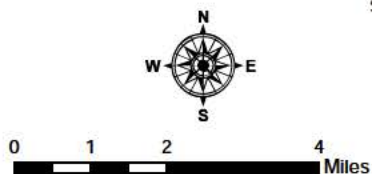
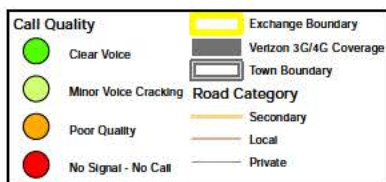
US Cellular (Motorola G)



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Exchange Analysis: Sedgwick

Verizon Wireless (Motorola X)



Sources: Test Points - Tilson Technologies
Wireless broadband coverage - ConnectME Authority
Basemap - Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Appendix B. Test Data

A tabular version of the voice coverage test results are provided in this appendix.

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
1	55	AT&T	No Signal - No Call	44.986515	-69.865992	No Signal	0	No
1	11	US Cellular	-92dBm 2 asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	44.986515	-69.865992	Clear Voice	2	No
1	35	Verizon	-93dBm 99asu 1xRTT 3 bars 1X,,Call completed; voice clear	44.986515	-69.865992	Clear Voice	3	No
2	56	AT&T	No Signal - No Call	45.021757	-69.857462	No Signal	0	No
2	12	US Cellular	-85dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.021757	-69.857462	Clear Voice	2	No
2	36	Verizon	-96dBm 99asu 1xRTT 2 bars 1X,,Call completed; voice clear	45.021757	-69.857462	Clear Voice	2	No
3	57	AT&T	No Signal - No Call	45.0362	-69.846137	No Signal	0	No
3	13	US Cellular	-93dBm 2asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.0362	-69.846137	Clear Voice	1	No
3	37	Verizon	-96dBm 99asu 1xRTT 2 bars 1X,,Call completed; voice clear	45.0362	-69.846137	Clear Voice	2	No
4	58	AT&T	No Signal - No Call	45.21736	-69.987715	No Signal	0	No
4	5	US Cellular	No Signal - No Call	45.21736	-69.987715	No Signal	0	No
4	30	Verizon	No Signal - No Call	45.21736	-69.987715	No Signal	0	No
5	59	AT&T	No Signal - No Call	45.048658	-69.863629	No Signal	0	No
5	14	US Cellular	-84dBm 4 asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.048658	-69.863629	Clear Voice	2	No
5	38	Verizon	-94dBm 99asu 1xRTT 3 bars 1X,,Call completed; voice clear	45.048658	-69.863629	Clear Voice	3	No
6	60	AT&T	No Signal - No Call	45.04986	-69.877255	No Signal	0	No
6	15	US Cellular	-84dBm 4 asu CDMA EvDo 2 Bars 3 G,,Call completed; voice clear	45.04986	-69.877255	Clear Voice	2	No
6	39	Verizon	-86dBm 99asu 1xRTT 3 bars 1X,,Call completed; voice clear	45.04986	-69.877255	Clear Voice	3	No
7	61	AT&T	No Signal - No Call	45.047729	-69.883934	No Signal	0	No
7	16	US Cellular	-91dBm 2 asu CDMA EvDo 1 bar 3G,,Call completed; clear voice	45.047729	-69.883934	Clear Voice	1	No
7	40	Verizon	-96dBm 99asu 1xRTT 3 bars 1X,,Call completed; clear voice	45.047729	-69.883934	Clear Voice	3	No
8	62	AT&T	No Signal - No Call	45.040281	-69.878697	No Signal	0	No
8	17	US Cellular	-85dBm 4 asu CDMA EvDo 2 Bars 3G,,Call completed; voice clear	45.040281	-69.878697	Clear Voice	2	No
8	41	Verizon	-93dBm 99asu 1xRTT 3 bars 1X,,Call completed; voice clear	45.040281	-69.878697	Clear Voice	3	No
9	63	AT&T	No Signal - No Call	45.064471	-69.944667	No Signal	0	No
9	9	US Cellular	-101dBm 1 asu CDMA EvDo 1 bar 3G,,Call completed; minor voice cracking	45.064471	-69.944667	Minor Voice Cracking	1	No
9	33	Verizon	-100dBm 99asu 1xRTT 2 bars 1X,,Call completed; minor voice cracking	45.064471	-69.944667	Minor Voice Cracking	2	No
10	64	AT&T	No Signal - No Call	45.063773	-69.967827	No Signal	0	No
10	18	US Cellular	-95dBm 2asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.063773	-69.967827	Clear Voice	2	No
10	42	Verizon	-101dBm 99asu 1xRTT 2bars 1X,,Call completed; voice clear	45.063773	-69.967827	Clear Voice	2	No
11	65	AT&T	No Signal - No Call	45.081362	-69.97396	No Signal	0	No
11	19	US Cellular	-84dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.081362	-69.97396	Clear Voice	2	No
11	43	Verizon	-96dBm 99asu 1xRTT 3 bars 1X,,Call completed; voice clear	45.081362	-69.97396	Clear Voice	3	No
12	66	AT&T	No Signal - No Call	45.055128	-69.883698	No Signal	0	No
12	20	US Cellular	-73dBm 8asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.055128	-69.883698	Clear Voice	3	No
12	44	Verizon	-92dBm 99asu 1xRTT 3 bars 1X,,Call completed; voice clear	45.055128	-69.883698	Clear Voice	3	No
13	67	AT&T	No Signal - No Call	45.058364	-69.877539	No Signal	0	No
13	21	US Cellular	-93dBm 2asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.058364	-69.877539	Clear Voice	2	No
13	45	Verizon	-97dBm 99asu 1xRTT 2 bars 1X,,Call completed; voice clear	45.058364	-69.877539	Clear Voice	2	No
14	68	AT&T	No Signal - No Call	45.071899	-69.873609	No Signal	0	No
14	22	US Cellular	-62dBm 18asu CDMA EvDo 4 bars 3G,,Call completed; voice clear	45.071899	-69.873609	Clear Voice	4	No
14	46	Verizon	-76dBm 99asu 1xRTT 4 bars,,Call completed; voice clear	45.071899	-69.873609	Clear Voice	4	No
15	69	AT&T	No Signal - No Call	45.077742	-69.864299	No Signal	0	No
15	23	US Cellular	-79dBm 4 asu CDMA EvDo 3 bars,,Call completed; voice clear	45.077742	-69.864299	Clear Voice	3	No
15	47	Verizon	-76dBm 99asu 1xRTT 4 bars 1X,,Call completed; voice clear	45.077742	-69.864299	Clear Voice	4	No
16	70	AT&T	No Signal - No Call	45.098926	-69.868464	No Signal	0	No
16	24	US Cellular	-82dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.098926	-69.868464	Clear Voice	2	No
16	48	Verizon	-77dBm 99asu 1xRTT 4 bars 1x,,Call completed; voice clear	45.098926	-69.868464	Clear Voice	4	No
17	71	AT&T	No Signal - No Call	45.085388	-69.8776	No Signal	0	No
17	25	US Cellular	-83dBm 4asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.085388	-69.8776	Clear Voice	3	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
17	49	Verizon	-83dBm 99asu 1xRTT 4 bars 1X,,Call completed; clear voice	45.085388	-69.8776	Clear Voice	4	No
18	72	AT&T	No Signal - No Call	45.074618	-69.890208	No Signal	0	No
18	26	US Cellular	-72dBm 4asu CDMA EvDo 3 bars 3G,,Call completed; clear voice	45.074618	-69.890208	Clear Voice	3	No
18	50	Verizon	-81dBm 99asu 1xRTT 4 bars 1x,,Call completed; clear voice	45.074618	-69.890208	Clear Voice	4	No
19	73	AT&T	No Signal - No Call	45.069927	-69.890689	No Signal	0	No
19	27	US Cellular	-70dBm 8asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.069927	-69.890689	Clear Voice	3	No
19	51	Verizon	-67dBm 99asu 1xRTT 5 bars 1X,,Call completed; voice clear	45.069927	-69.890689	Clear Voice	5	No
20	74	AT&T	No Signal - No Call	45.094639	-69 90127	No Signal	0	No
20	28	US Cellular	-86dBm 2 asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.094639	-69 90127	Clear Voice	1	No
20	52	Verizon	-88dBm 99asu 1xRTT 3 bars 1X,,Call completed; clear voice	45.094639	-69 90127	Clear Voice	3	No
21	75	AT&T	No Signal - No Call	45.086212	-69.904996	No Signal	0	No
21	29	US Cellular	-75dBm 8 asu 4 bars, unknown network,,Call completed; voice clear	45.086212	-69.904996	Clear Voice	4	No
21	54	Verizon	-74dBm 99asu 1xRTT 4 bars,,Call completed; voice was clear	45.086212	-69.904996	Clear Voice	4	No
22	76	AT&T	No Signal - No Call	45.09198	-69 92072	No Signal	0	No
22	10	US Cellular	-95dBm 2 asu 2 bars, network unknown,,Call completed; minor voice cracking	45.09198	-69 92072	Minor Voice Cracking	2	No
22	53	Verizon	-94dBm 99 asu 1xRTT 3 bars,,Call completed; clear voice	45.09198	-69 92072	Clear Voice	3	No
23	77	AT&T	No Signal - No Call	45.12431	-69 94921	No Signal	0	No
23	6	US Cellular	No Signal - No Call	45.12431	-69 94921	No Signal	0	No
23	34	Verizon	-102dBm 99asu 1xRTT 1 bar,,Call completed; broken voice, missed most of conversation, poor quality cal	45.12431	-69 94921	Poor Call Quality	1	No
24	78	AT&T	No Signal - No Call	45.234105	-69.991676	No Signal	0	No
24	7	US Cellular	No Signal - No Call	45.234105	-69.991676	No Signal	0	No
24	31	Verizon	No Signal - No Call	45.234105	-69.991676	No Signal	0	No
25	79	AT&T	No Signal - No Call	45.237599	-69.995779	No Signal	0	No
25	8	US Cellular	No Signal - No Call	45.237599	-69.995779	No Signal	0	No
25	32	Verizon	No Signal - No Call	45.237599	-69.995779	No Signal	0	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
1	15	AT&T	-97dBm 8asu HSPA 3 bars 4G,,Call completed; voice clear	45.456689	-69.530763	Clear Voice	3	No
1	67	US Cellular	-95dBm 2 asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.456689	-69.530763	Clear Voice	1	No
1	115	Verizon	-95dBm 9asu EHRPD 3 bars 3G,,Call completed; voice clear	45.456689	-69.530763	Clear Voice	3	No
2	16	AT&T	-108dBm 2asu HSPA 1 bar 4G,,Call completed; clear voice	45.406519	-69.594	Clear Voice	1	No
2	51	US Cellular	-95dBm 2asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.406519	-69.594	Clear Voice	1	No
2	92	Verizon	-107dBm 4asu CDMA eHRPD 1 bar 3G,,Call completed; minor static	45.406519	-69.594	Clear Voice	1	No
3	3	AT&T	No Signal - No Call	45.365881	-69.617649	No Signal	0	No
3	80	US Cellular	-92dBm 2 asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.365881	-69.617649	Clear Voice	2	No
3	96	Verizon	-104dBm 4asu CDMA EHRPD 1 bar 3G,,Call completed; minor voice breaking	45.365881	-69.617649	Minor Voice Cracking	1	No
4	4	AT&T	No Signal - No Call	45.351295	-69.588479	No Signal	0	No
4	89	US Cellular	-90dBm 2asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.351295	-69.588479	Clear Voice	2	No
4	114	Verizon	-90dBm 11asu CDMA 1xRTT 4 bars,,Call completed; voice clear	45.351295	-69.588479	Clear Voice	4	No
5	17	AT&T	-103dBm 5asu HSPA 2 bars 4G,,Call completed; voice clear	45.344076	-69.589055	Clear Voice	2	No
5	90	US Cellular	-90dBm 2asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.344076	-69.589055	Clear Voice	2	No
5	122	Verizon	-113dBm 27asu 1 bar 4G LTE,,Call completed; voice clear	45.344076	-69.589055	Clear Voice	1	No
6	5	AT&T	No Signal - Call dropped	45.454182	-69.539522	No Signal	0	No
6	64	US Cellular	-77dBm 4 asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.454182	-69.539522	Clear Voice	2	No
6	99	Verizon	-112dBm 28 asu 3 bars 4G,,Call completed; voice clear	45.454182	-69.539522	Clear Voice	3	No
7	18	AT&T	-86dBm 14 asu HSPA 4 bars 4G,,Call completed; voice clear	45.473274	-69.573283	Clear Voice	4	No
7	68	US Cellular	-89dBm 2 asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.473274	-69.573283	Clear Voice	2	No
7	98	Verizon	-100dBm 40 asu 4 bars 4G LTE,,Call completed; voice clear	45.473274	-69.573283	Clear Voice	4	No
8	19	AT&T	-98dBm 7asu HSPA 3 bars 4G,,Call completed; voice clear	45.502383	-69.574052	Clear Voice	3	No
8	66	US Cellular	-90dBm 4 asu CDMA 1xRTT 3 bars 1X,,Call completed; voice clear	45.502383	-69.574052	Clear Voice	3	No
8	93	Verizon	-116dBm 26 asu 3 bars 4G,,Call completed; minor voice cracking	45.502383	-69.574052	Minor Voice Cracking	3	No
9	20	AT&T	-84dBm 15 asu HSPA 4 bars 4G,,Call completed; voice clear	45.562686	-69.569437	Clear Voice	4	No
9	59	US Cellular	-104dBm 99asu CDMA 1xRTT 1 bar 1X,,Call completed; voice clear	45.562686	-69.569437	Clear Voice	1	No
9	101	Verizon	-100dBm 40asu 3 bars 4G LTE,,Call completed; voice clear	45.562686	-69.569437	Clear Voice	3	No
10	21	AT&T	-112 1asu HSPA 1 bar 4G,,Call completed; voice clear	45.555757	-69.557141	Clear Voice	1	No
10	62	US Cellular	-93dBm 2 asu CDMA EvDo 1 bar 3G,,Call completed; voice clear (roaming)	45.555757	-69.557141	Clear Voice	1	No
10	100	Verizon	-114dBm 26 asu 2 bars 4G LTE,,Call completed; voice clear	45.555757	-69.557141	Clear Voice	2	No
11	22	AT&T	-109dBm 2 asu HSPA 1 bar 4G,,Call completed; voice clear	45.548108	-69.545563	Clear Voice	1	No
11	60	US Cellular	-86dBm 2 asu CDMA EvDo 2 bars 3G,,Call completed; voice clear (roaming)	45.548108	-69.545563	Clear Voice	2	No
11	104	Verizon	-110dBm 30 asu 2 bars 4G LTE,,Call completed; voice clear	45.548108	-69.545563	Clear Voice	2	No
12	6	AT&T	No Signal - No Call	45.598444	-69.513153	No Signal	0	No
12	61	US Cellular	-101dBm 99asu CDMA 1xRTT 1 bar 1X,,Call completed; voice clear	45.598444	-69.513153	Clear Voice	1	No
12	102	Verizon	-119dBm 21 asu 2 bars 4G LTE,,Call completed; voice clear	45.598444	-69.513153	Clear Voice	2	No
13	23	AT&T	-104dBm 5 asu HSPA 2 bars 4G,,Call completed; voice clear	45.602254	-69.513271	Clear Voice	2	No
13	55	US Cellular	-103dBm 99asu CDMA 1xRTT 1 bar 1X,,Call completed; voice clear	45.602254	-69.513271	Clear Voice	1	No
13	103	Verizon	-98dBm 40ASU 3 bars 4G LTE,,Call completed; voice clear	45.602254	-69.513271	Clear Voice	3	No
14	7	AT&T	No Signal - No Call	45.667369	-69.432903	No Signal	0	No
14	57	US Cellular	-96dBm 1asu CDMA EvDo 1 bar 3G,,Call completed; voice clear (roaming)	45.667369	-69.432903	Clear Voice	1	No
14	106	Verizon	-117dBm 23asu 2 bars 4G LTE,,Call completed; voice clear	45.667369	-69.432903	Clear Voice	2	No
15	24	AT&T	-87dBm 14asu HSPA 4 bars 4G,,Call completed; voice clear	45.494079	-69.578885	Clear Voice	4	No
15	56	US Cellular	-90dBm 4 asu CDMA 1xRTT 3 bars 1X,,Call completed; voice clear	45.494079	-69.578885	Clear Voice	3	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
15	108	Verizon	-94dBm 47 asu 4 bars 4G LTE,,Call completed; voice clear	45.494079	-69.578885	Clear Voice	4	No
16	25	AT&T	-86dBm 13 asu HSPA 4 bars 4G,,Call completed; voice clear	45.482543	-69.584323	Clear Voice	4	No
16	58	US Cellular	-90dBm 4asu CDMA 1xRTT 3 bars 1X,,Call completed; voice clear	45.482543	-69.584323	Clear Voice	3	No
16	107	Verizon	-95dBm 45asu 4 bars 4G LTE,,Call completed; voice clear	45.482543	-69.584323	Clear Voice	4	No
17	26	AT&T	-84dBm 15 asu HSPA+ 4 bars 4G,,Call completed; voice clear	45.480125	-69.594265	Clear Voice	4	No
17	54	US Cellular	-86dBm 2 asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.480125	-69.594265	Clear Voice	2	No
17	113	Verizon	-101dBm 39asu 3 bars 4G,,Call completed; voice clear	45.480125	-69.594265	Clear Voice	3	No
18	27	AT&T	-84dBm 14 asu HSPA 4 bars 4G,,Call completed; voice clear	45.469882	-69.591159	Clear Voice	4	No
18	53	US Cellular	-82dBm 4 asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.469882	-69.591159	Clear Voice	3	No
18	110	Verizon	-93dBm 47 asu 4 bars 4G LTE,,Call completed; voice clear	45.469882	-69.591159	Clear Voice	4	No
19	28	AT&T	-99dBm 7 asu HSPA 3 bars 4G,,Call completed; voice clear	45.462365	-69.590234	Clear Voice	3	No
19	63	US Cellular	-70dBm 8 asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.462365	-69.590234	Clear Voice	3	No
19	111	Verizon	-105dBm 35 ASU 3 bars 4G LTE,,Call completed; voice clear	45.462365	-69.590234	Clear Voice	3	No
20	29	AT&T	-93dBm 10 asu HSPA 3 bars 4G,,Call completed; voice clear	45.461506	-69.557748	Clear Voice	3	No
20	65	US Cellular	-90dBm 2 asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.461506	-69.557748	Clear Voice	2	No
20	109	Verizon	-97dBm 43 asu 3 bars 4G LTE,,Call completed; voice clear	45.461506	-69.557748	Clear Voice	3	No
21	30	AT&T	-99dBm 7 asu HSPA 2 bars 4G,,Call completed; voice clear	45.537667	-69.546709	Clear Voice	2	No
21	70	US Cellular	-103dBm 99 asu CDMA 1xRTT 1 bar 1X,,Call completed; voice clear	45.537667	-69.546709	Clear Voice	1	No
21	105	Verizon	-108dBm 32asu 2 bars 4G LTE,,Call completed; voice clear	45.537667	-69.546709	Clear Voice	2	No
22	31	AT&T	-105dBm 4asu HSPA+ 2 bars 4G,,Call completed; voice clear	45.496622	-69.621001	Clear Voice	2	No
22	49	US Cellular	-103dBm 99asu CDMA 1 bar 3G,,Call completed; minor voice breakup	45.496622	-69.621001	Minor Voice Cracking	1	No
22	116	Verizon	-110dBm 30 ASU 3 bars 4G,,Call completed; voice clear	45.496622	-69.621001	Clear Voice	3	No
23	8	AT&T	No Signal - No Call	45.487274	-69.665042	No Signal	0	No
23	47	US Cellular	No Signal - No Call	45.487274	-69.665042	No Signal	0	No
23	117	Verizon	-105dBm 5 asu 1 bar 3G,,Call completed; voice clear	45.487274	-69.665042	Clear Voice	1	No
24	32	AT&T	-107dBm 4 asu HSPA 2 bars 4G,,Call completed; voice clear	45.534216	-69.546425	Clear Voice	2	No
24	52	US Cellular	-100dBm 1 asu CDMA 1xRTT 1 bar 1X,,Call completed; voice clear	45.534216	-69.546425	Clear Voice	1	No
24	112	Verizon	-106dBm 34 asu 2 bars 4G LTE,,Call completed; voice clear	45.534216	-69.546425	Clear Voice	2	No
25	33	AT&T	-91dBm 11asu HSPA 3 bars 4G,,Call completed; voice clear	45.471092	-69.606578	Clear Voice	3	No
25	88	US Cellular	-75dBm 8asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.471092	-69.606578	Clear Voice	2	No
25	118	Verizon	-98dBm 42asu 3 bars 4G LTE,,Call completed; voice clear	45.471092	-69.606578	Clear Voice	3	No
26	34	AT&T	-76dBm 18asu HSPA 5 bars 4G,,Call completed; voice clear	45.44895	-69.590851	Clear Voice	5	No
26	87	US Cellular	-81dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.44895	-69.590851	Clear Voice	2	No
26	134	Verizon	-90dBm 50asu 5 bars 4G LTE,,Call completed; voice clear	45.44895	-69.590851	Clear Voice	5	No
27	36	AT&T	-73dBm 20asu HSPA 5 bars 4G,,Call completed; voice clear	45.461267	-69.597561	Clear Voice	5	No
27	86	US Cellular	-76dBm 4asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.461267	-69.597561	Clear Voice	3	No
27	119	Verizon	-93dBm 47asu 4 bars 4G LTE,,Call completed; voice clear	45.461267	-69.597561	Clear Voice	4	No
28	35	AT&T	-91dBm 11asu HSPA 3 bars 4G,,Call completed; voice clear	45.4577	-69.593527	Clear Voice	3	No
28	85	US Cellular	-77dBm 4asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.4577	-69.593527	Clear Voice	3	No
28	121	Verizon	-94dBm 46asu 4 bars 4G LTE,,Call completed; voice clear	45.4577	-69.593527	Clear Voice	4	No
29	37	AT&T	-107dBm 3asu HSPA 2 bars 4G,,Call completed; voice clear	45.453819	-69.583722	Clear Voice	2	No
29	83	US Cellular	-85dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.453819	-69.583722	Clear Voice	2	No
29	120	Verizon	-109dBm 32 asu 3 bars 4G LTE,,Call completed; voice clear	45.453819	-69.583722	Clear Voice	3	No
30	38	AT&T	-110dBm 2asu HSPA 1 bar 4G,,Call completed; clear voice	45.393705	-69.595991	Clear Voice	1	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
30	82	US Cellular	-93dBm 2asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.393705	-69.595991	Clear Voice	1	No
30	95	Verizon	-103dBm 5asu CDMA eHRPD 1 bar 3G,,Call completed; frequent voice breaking	45.393705	-69.595991	Poor Call Quality	1	No
31	9	AT&T	No Signal - No Call	45.37518	-69.595533	No Signal	0	No
31	81	US Cellular	-102dBm 99asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.37518	-69.595533	Clear Voice	1	No
31	94	Verizon	-104dBm 4asu CDMA eHRPD 1 bar 3G,,Call completed; minor voice breaking	45.37518	-69.595533	Minor Voice Cracking	1	No
32	10	AT&T	No Signal - No Call	45.36026	-69.605257	No Signal	0	No
32	84	US Cellular	-78dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.36026	-69.605257	Clear Voice	2	No
32	123	Verizon	-103dBm 5asu CDMA EHRPD 2 bars 3G,,Call completed; voice clear	45.36026	-69.605257	Clear Voice	2	No
33	11	AT&T	No Signal - No Call	45.362159	-69.646455	No Signal	0	No
33	78	US Cellular	-104dBm 99asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.362159	-69.646455	Clear Voice	1	No
33	97	Verizon	-104dBm 4asu CDMA EHRPD 1 bar 3G,,Call completed; minor static	45.362159	-69.646455	Minor Voice Cracking	1	No
34	12	AT&T	No Signal - No Call	45.36351	-69.633008	No Signal	0	No
34	79	US Cellular	-90dBm 2asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.36351	-69.633008	Clear Voice	2	No
34	125	Verizon	-99dBm 7asu CDMA EHRPD 2 bars 3G,,Call completed; voice clear	45.36351	-69.633008	Clear Voice	2	No
35	39	AT&T	-95dBm 9asu HSPA 3 bars 4G,,Call completed; voice clear	45.455709	-69.602388	Clear Voice	3	No
35	77	US Cellular	-84dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.455709	-69.602388	Clear Voice	2	No
35	124	Verizon	-95dBm 45asu 3 bars 4G LTE,,Call completed; voice clear	45.455709	-69.602388	Clear Voice	3	No
36	40	AT&T	-101dBm 6asu HSPA 2 bars 4G,,Call completed; voice clear	45.452335	-69.614519	Clear Voice	2	No
36	76	US Cellular	-79dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.452335	-69.614519	Clear Voice	2	No
36	126	Verizon	-98dBm 42asu 4 bars 4G LTE,,Call completed; voice clear	45.452335	-69.614519	Clear Voice	4	No
37	41	AT&T	-92dBm 11asu HSPA 3 bars 4G,,Call completed; voice clear	45.459495	-69.605067	Clear Voice	3	No
37	75	US Cellular	-82dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.459495	-69.605067	Clear Voice	2	No
37	132	Verizon	-99dBm 41asu 4 bars 4G LTE,,Call completed; voice clear	45.459495	-69.605067	Clear Voice	4	No
38	42	AT&T	-105dBm 4asu HSPA 2 bars 4G,,Call completed; voice clear	45.461791	-69.611929	Clear Voice	2	No
38	74	US Cellular	-84dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.461791	-69.611929	Clear Voice	2	No
38	127	Verizon	-113dBm 27asu 3 bars 4G LTE,,Call completed; voice clear	45.461791	-69.611929	Clear Voice	3	No
39	43	AT&T	-111dBm 2asu HSPA 1 bar 4G,,Call completed; voice clear	45.46335	-69.616058	Clear Voice	1	No
39	48	US Cellular	-94dBm 2asu CDMA EvDo 1 bar 3G,,Call completed; minor voice breaking	45.46335	-69.616058	Minor Voice Cracking	1	No
39	133	Verizon	-113dBm 27 asu 2 bars 4G LTE,,Call completed; voice clear	45.46335	-69.616058	Clear Voice	2	No
40	13	AT&T	Call Failed (twice) -107dBm 3asu HSPA 1 bar 4G	45.460459	-69.615355	No Signal	1	No
40	73	US Cellular	-84dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.460459	-69.615355	Clear Voice	2	No
40	128	Verizon	-114dBm 26 asu 2 bars 4G LTE,,Call completed; voice clear	45.460459	-69.615355	Clear Voice	2	No
41	44	AT&T	-95dBm 5asu HSPA 4 bars 4G,,Call completed; voice clear	45.458417	-69.618902	Clear Voice	4	No
41	69	US Cellular	-90dBm 2asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.458417	-69.618902	Clear Voice	2	No
41	129	Verizon	-100dBm 40asu 3 bars 4G LTE,,Call completed; voice clear	45.458417	-69.618902	Clear Voice	3	No
42	45	AT&T	-97dBm 8asu HSPA 2 bars 4G,,Call completed; voice clear	45.460164	-69.623512	Clear Voice	2	No
42	71	US Cellular	-70dBm 8asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.460164	-69.623512	Clear Voice	3	No
42	130	Verizon	-101dBm 39asu 3 bars 4G LTE,,Call completed; voice clear	45.460164	-69.623512	Clear Voice	3	No
43	46	AT&T	-89dBm 12asu HSPA 4 bars 4G,,Call completed; voice clear	45.475617	-69.631341	Clear Voice	4	No
43	72	US Cellular	-93dBm 2 asu EvDo 1 bar 3G,,Call completed; voice clear	45.475617	-69.631341	Clear Voice	1	No
43	131	Verizon	-98dBm 42 ASU 4 bars 4G,,Call completed; voice clear	45.475617	-69.631341	Clear Voice	4	No
44	14	AT&T	No Signal	45.671607	-69.446077	No Signal	0	No
44	50	US Cellular	-104dBm 99asu CDMA 1xRTT 1 bar 1x,,Call completed; voice clear	45.671607	-69.446077	Clear Voice	1	No
44	91	Verizon	-105dBm 4asu CDMA eHRPD 1 bar 3G,,Call initiated, call dropped 20 seconds in	45.671607	-69.446077	Poor Call Quality	1	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
1	2	AT&T	No Signal - No Call	45.616638	-70.072705	No Signal	0	No
1	118	US Cellular	-101dBm 99asu CDMA 1xRTT 1 bar 1X,,Call completed; voice clear	45.616638	-70.072705	Clear Voice	1	No
1	54	Verizon	-111dBm 99asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.616638	-70.072705	Clear Voice	2	No
2	3	AT&T	No Signal - No Call	45.617401	-70.243445	No Signal	0	No
2	95	US Cellular	-90dBm 4asu unknown 2 bars 3G,,Call completed; voice clear	45.617401	-70.243445	Clear Voice	2	No
2	55	Verizon	-89dBm 4asu CDMA 1xRTT 3 bars,,Call completed; voice clear	45.617401	-70.243445	Clear Voice	3	No
3	4	AT&T	No Signal - No Call	45.611026	-70.24756	No Signal	0	No
3	119	US Cellular	-91dBm 2 asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.611026	-70.24756	Clear Voice	2	No
3	56	Verizon	-96dBm 1asu CDMA 1xRTT 2 bars,,Call completed; voice clear	45.611026	-70.24756	Clear Voice	2	No
4	5	AT&T	No Signal - No Call	45.606796	-70.251178	No Signal	0	No
4	120	US Cellular	-92dBm 2 asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.606796	-70.251178	Clear Voice	2	No
4	57	Verizon	-97dBm 1asu CDMA 1xRTT 2 bars,,Call completed; voice clear	45.606796	-70.251178	Clear Voice	2	No
5	6	AT&T	No Signal - No Call	45.611664	-70.254294	No Signal	0	No
5	121	US Cellular	-90dBm 2asu unknown 2 bars 3G,,Call completed; voice clear	45.611664	-70.254294	Clear Voice	2	No
5	58	Verizon	-91dBm 2asu CDMA 1xRTT 2 bars,,Call completed; voice clear	45.611664	-70.254294	Clear Voice	2	No
6	7	AT&T	No Signal - No Call	45.617316	-70.248733	No Signal	0	No
6	123	US Cellular	-95dBm 2asu unknown 2 bars 3G,,Call completed; voice clear	45.617316	-70.248733	Clear Voice	2	No
6	59	Verizon	-84dBm 4asu CDMA 1xRTT 4 bars,,Call completed; voice clear	45.617316	-70.248733	Clear Voice	4	No
7	8	AT&T	No Signal - No Call	45.620353	-70.236085	No Signal	0	No
7	124	US Cellular	-85dBm 4asu unknown 3 bars 3G,,Call completed; voice clear	45.620353	-70.236085	Clear Voice	3	No
7	60	Verizon	-83dBm 4asu CDMA 1xRTT 4 bars,,Call completed; voice clear	45.620353	-70.236085	Clear Voice	4	No
8	9	AT&T	No Signal - No Call	45.624524	-70.221838	No Signal	0	No
8	125	US Cellular	-78dBm 8asu unknown 3 bars 3G,,Call completed; voice clear	45.624524	-70.221838	Clear Voice	3	No
8	61	Verizon	-85dBm 4asu CDMA 1xRTT 3 bars,,Call completed; voice clear	45.624524	-70.221838	Clear Voice	3	No
9	10	AT&T	No Signal - No Call	45.623096	-70.210674	No Signal	0	No
9	126	US Cellular	-94dBm 2asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.623096	-70.210674	Clear Voice	2	No
9	45	Verizon	-117dBm 99asu CDMA eHRPD 1 bar 3G,,Call failed	45.623096	-70.210674	No Signal	1	No
10	11	AT&T	No Signal - No Call	45.627888	-70.214137	No Signal	0	No
10	128	US Cellular	-88dBm 4asu unknown 2 bars 3G,,Call completed; voice clear	45.627888	-70.214137	Clear Voice	2	No
10	46	Verizon	-105dBm 99 asu CDMA eHRDP 1 bar 3G,,Call started; call dropped at 20 seconds	45.627888	-70.214137	Poor Call Quality	1	No
11	12	AT&T	No Signal - No Call	45.632022	-70.194156	No Signal	0	No
11	129	US Cellular	-90dBm 4asu unknown 2 bars 3G,,Call completed; voice clear	45.632022	-70.194156	Clear Voice	2	No
11	62	Verizon	-120dBm 15asu 1 bar 4G LTE,,Call completed; voice clear	45.632022	-70.194156	Clear Voice	1	No
12	13	AT&T	No Signal - No Call	45.632319	-70.182171	No Signal	0	No
12	94	US Cellular	-108dBm 99asu CDMA EvDo 1 bar 3G,,Call completed; voice broke up twice during call	45.632319	-70.182171	Minor Voice Cracking	1	No
12	50	Verizon	-102dBm 1asu CDMA eHRPD 1 bar 3G,,Call dropped; voice cracking during entire call	45.632319	-70.182171	Poor Call Quality	1	No
13	14	AT&T	No Signal - No Call	45.629692	-70.164261	No Signal	0	No
13	130	US Cellular	-102dBm 1asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.629692	-70.164261	Clear Voice	1	No
13	51	Verizon	-103dBm 1asu CDMA eHRPD 1 bar 3G,,Call completed; voice broken up for the majority of the call test	45.629692	-70.164261	Poor Call Quality	1	No
14	15	AT&T	No Signal - No Call	45.622858	-70.136014	No Signal	0	No
14	92	US Cellular	-104dBm 99asu CDMA 1xRTT 1 bar 1X,,Call completed; voice broken up at times	45.622858	-70.136014	Minor Voice Cracking	1	No
14	52	Verizon	-105dBm 99asu unknown 1 bar,,Call dropped; voice broken up during entire call	45.622858	-70.136014	Poor Call Quality	1	No
15	16	AT&T	No Signal - No Call	45.620687	-70.1217	No Signal	0	No
15	127	US Cellular	-102dBm 99asu CDMA 1xRTT 1 bar 1X,,Call completed; voice clear	45.620687	-70.1217	Clear Voice	1	No
15	53	Verizon	-95dBm 2asu CDMA eHRPD 2 bars 3G,,Call completed; voice broken up at times	45.620687	-70.1217	Minor Voice Cracking	2	No
16	17	AT&T	No Signal - No Call	45.623254	-70.106708	No Signal	0	No
16	93	US Cellular	-104dBm 99asu CDMA 1xRTT 1 bar 1X,,Call completed; minor voice breaking	45.623254	-70.106708	Minor Voice Cracking	1	No
16	63	Verizon	-126dBm 14asu 1 bar 4G LTE,,Call completed; voice clear	45.623254	-70.106708	Clear Voice	1	No
17	18	AT&T	No Signal - No Call	45.621589	-70.257011	No Signal	0	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
17	122	US Cellular	-85dBm 2 asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.621589	-70.257011	Clear Voice	2	No
17	64	Verizon	-97dBm 1asu CDMA 1xRTT 2 bars,,Call completed; voice clear	45.621589	-70.257011	Clear Voice	2	No
18	19	AT&T	No Signal - No Call	45.660286	-70.269008	No Signal	0	No
18	117	US Cellular	-88dBm 2asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.660286	-70.269008	Clear Voice	2	No
18	65	Verizon	-91dBm 2asu CDMA 1xRTT 3 bars,,Call completed; voice clear	45.660286	-70.269008	Clear Voice	3	No
19	20	AT&T	No Signal - No Call	45.683767	-70.28471	No Signal	0	No
19	98	US Cellular	-85dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.683767	-70.28471	Clear Voice	2	No
19	66	Verizon	-104dBm 1asu CDMA eHRPD 2 bars,,Call completed; voice clear	45.683767	-70.28471	Clear Voice	2	No
20	21	AT&T	No Signal - No Call	45.613509	-70.236123	No Signal	0	No
20	104	US Cellular	-91dBm 2asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.613509	-70.236123	Clear Voice	1	No
20	67	Verizon	-91dBm 2asu 3 CDMA 1xRTT 3 bars,,Call completed; voice clear	45.613509	-70.236123	Clear Voice	3	No
21	22	AT&T	No Signal - No Call	45.560542	-70.13609	No Signal	0	No
21	102	US Cellular	-65dBm 8asu CDMA EvDo 4 bars 3G,,Call completed; voice clear	45.560542	-70.13609	Clear Voice	4	No
21	68	Verizon	-100dBm 40asu 5 bars 4G LTE,,Call completed; voice clear	45.560542	-70.13609	Clear Voice	5	No
22	23	AT&T	No Signal - No Call	45.429544	-70.047746	No Signal	0	No
22	88	US Cellular	No Signal - no call	45.429544	-70.047746	No Signal	0	No
22	47	Verizon	-104dBm 99asu CDMA 1xRTT 1 bar,,Call failed; would not dial out	45.429544	-70.047746	No Signal	1	No
23	24	AT&T	No Signal - No Call	45.516935	-70.09264	No Signal	0	No
23	99	US Cellular	-92dBm 2asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.516935	-70.09264	Clear Voice	1	No
23	69	Verizon	-117dBm 23asu 2 bars 4G LTE,,Call completed; voice clear	45.516935	-70.09264	Clear Voice	2	No
24	25	AT&T	No Signal - No Call	45.522051	-70.094303	No Signal	0	No
24	100	US Cellular	-82dBm 8asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.522051	-70.094303	Clear Voice	3	No
24	70	Verizon	-110dBm 30asu 5 bars 4G LTE,,Call completed; voice clear	45.522051	-70.094303	Clear Voice	5	No
25	26	AT&T	No Signal - No Call	45.783358	-70.356202	No Signal	0	No
25	89	US Cellular	No Signal - No Call	45.783358	-70.356202	No Signal	0	No
25	48	Verizon	No Signal - No Call	45.783358	-70.356202	No Signal	0	No
26	27	AT&T	No Signal - No Call	45.705519	-70.287139	No Signal	0	No
26	91	US Cellular	-99dBm 2 asu CDMA 1xRTT 1 bar 1x,,Call completed; minor voice breaking	45.705519	-70.287139	Minor Voice Cracking	1	No
26	71	Verizon	-117dBm 99asu CDMA eHRPD 1 bar,,Call completed; voice clear	45.705519	-70.287139	Clear Voice	1	No
27	28	AT&T	No Signal - No Call	45.80521	-70.393122	No Signal	0	No
27	90	US Cellular	No Signal - No call	45.80521	-70.393122	No Signal	0	No
27	49	Verizon	No Signal - No Call	45.80521	-70.393122	No Signal	0	No
28	29	AT&T	No Signal - No Call	45.535512	-70.102487	No Signal	0	No
28	101	US Cellular	-91dBm 2asu 2 bars 3G,,Call completed; voice clear	45.535512	-70.102487	Clear Voice	2	No
28	72	Verizon	-107dBm 33asu 3 bars 4G LTE,,Call completed; voice clear	45.535512	-70.102487	Clear Voice	3	No
29	30	AT&T	No Signal - No Call	45.612028	-70.216234	No Signal	0	No
29	106	US Cellular	-85dBm 4asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.612028	-70.216234	Clear Voice	3	No
29	73	Verizon	-88dBm 4asu CDMA 1xRTT 3 bars,,Call completed; voice clear	45.612028	-70.216234	Clear Voice	3	No
30	31	AT&T	No Signal - No Call	45.65352	-70.265857	No Signal	0	No
30	114	US Cellular	-84dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.65352	-70.265857	Clear Voice	2	No
30	74	Verizon	-80dBm 8asu CDMA 1xRTT 3 bars,,Call completed; voice clear	45.65352	-70.265857	Clear Voice	3	No
31	32	AT&T	No Signal - No Call	45.648902	-70.271241	No Signal	0	No
31	113	US Cellular	-89dBm 2asu CDMA EvDo 2 bar 3G,,Call completed; voice clear	45.648902	-70.271241	Clear Voice	2	No
31	75	Verizon	-97dBm 1asu CDMA 1xRTT 2 bars,,Call completed; voice clear	45.648902	-70.271241	Clear Voice	2	No
32	33	AT&T	No Signal - No Call	45.612482	-70.226231	No Signal	0	No
32	115	US Cellular	-83dBm 4asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.612482	-70.226231	Clear Voice	3	No
32	76	Verizon	-99dBm 1asu CDMA 1xRTT 2 bars,,Call completed; voice clear	45.612482	-70.226231	Clear Voice	2	No
33	34	AT&T	No Signal - No Call	45.648529	-70.254322	No Signal	0	No
33	112	US Cellular	-84dBm 4asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.648529	-70.254322	Clear Voice	3	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
33	77	Verizon	-104dBm 99asu CDMA 1xRTT 2 bars,,Call completed; voice clear	45.648529	-70.254322	Clear Voice	2	No
34	35	AT&T	No Signal - No Call	45.64317	-70.262526	No Signal	0	No
34	111	US Cellular	-71dBm 8asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.64317	-70.262526	Clear Voice	3	No
34	78	Verizon	-88dBm 4asu CDMA 1xRTT 3 bars,,Call completed; voice clear	45.64317	-70.262526	Clear Voice	3	No
35	36	AT&T	No Signal - No Call	45.635234	-70.261747	No Signal	0	No
35	110	US Cellular	-92dBm 2asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.635234	-70.261747	Clear Voice	1	No
35	79	Verizon	-91dBm 2asu CDMA 1xRTT 2 bars,,Call completed; voice clear	45.635234	-70.261747	Clear Voice	2	No
36	37	AT&T	No Signal - No Call	45.63321	-70.242328	No Signal	0	No
36	109	US Cellular	-73dBm 8asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	45.63321	-70.242328	Clear Voice	3	No
36	80	Verizon	-71dBm 16asu 5 bars,,Call completed; voice clear	45.63321	-70.242328	Clear Voice	5	No
37	38	AT&T	No Signal - No Call	45.630451	-70.261443	No Signal	0	No
37	108	US Cellular	-81dBm 4asu CDMA EvDo 2 bars 3G,,Call completed;voice clear	45.630451	-70.261443	Clear Voice	2	No
37	81	Verizon	-86dBm 4asu CDMA 1xRTT 3 bars,,Call completed; voice clear	45.630451	-70.261443	Clear Voice	3	No
38	39	AT&T	No Signal - No Call	45.629529	-70.255368	No Signal	0	No
38	107	US Cellular	-91dBm 2asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.629529	-70.255368	Clear Voice	2	No
38	82	Verizon	-92dBm 2asu CDMA 1xRTT 3 bars,,Call completed; voice clear	45.629529	-70.255368	Clear Voice	3	No
39	40	AT&T	No Signal - No Call	45.626078	-70.256875	No Signal	0	No
39	105	US Cellular	-91dBm 2asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.626078	-70.256875	Clear Voice	2	No
39	83	Verizon	-94dBm 2asu CDMA 1xRTT 3 bars,,Call completed; voice clear	45.626078	-70.256875	Clear Voice	3	No
40	41	AT&T	No Signal - No Call	45.6444	-70.244216	No Signal	0	No
40	103	US Cellular	-77dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	45.6444	-70.244216	Clear Voice	2	No
40	84	Verizon	-85dBm 4asu CDMA 1xRTT 4 bars,,Call completed; voice clear	45.6444	-70.244216	Clear Voice	4	No
41	42	AT&T	No Signal - No Call	45.619301	-70.253551	No Signal	0	No
41	116	US Cellular	-88dBm 4asu unknown 3 bars 3G,,Call completed; voice clear	45.619301	-70.253551	Clear Voice	3	No
41	85	Verizon	-93dBm 2 asu CDMA 1xRTT 4 bars,,Call completed; voice clear	45.619301	-70.253551	Clear Voice	4	No
42	43	AT&T	No Signal - No Call	45.622087	-70.250434	No Signal	0	No
42	96	US Cellular	-85dBm 4asu unknown 3 bars 3G,,Call completed; voice clear	45.622087	-70.250434	Clear Voice	3	No
42	86	Verizon	-81dBm 8asu CDMA 1xRTT 4 bars,,Call completed; voice clear	45.622087	-70.250434	Clear Voice	4	No
43	44	AT&T	No Signal - No Call	45.641449	-70.221901	No Signal	0	No
43	97	US Cellular	-94dBm 2asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.641449	-70.221901	Clear Voice	1	No
43	87	Verizon	-113dBm 99asu CDMA eHRPD 1 bar 3G,,Call completed; voice clear	45.641449	-70.221901	Clear Voice	1	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
1	98	AT&T	No Call - No Signal	44.886727	-70.775583	No Signal	0	No
1	4	US Cellular	No Call - No Signal	44.886821	-70.775665	No Signal	0	No
1	54	Verizon	No Call - No Signal	44.88657	-70.775731	No Signal	0	No
2	99	AT&T	No Signal, No Call	44.926396	-70.615492	No Signal	0	No
2	15	US Cellular	-103dBm 1asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	44.926396	-70.615492	Clear Voice	1	No
2	62	Verizon	-103dBm 99asu unknown network, 1 bar,,Call completed; minor voice breaking up, static during dialing	44.926396	-70.615492	Minor Voice Cracking	1	No
3	100	AT&T	No Signal - No Call	44.940613	-70.624125	No Signal	0	No
3	16	US Cellular	-80dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	44.940613	-70.624125	Clear Voice	2	No
3	69	Verizon	-108dBm 32asu 2 bars 4G LTE,,Call completed; voice clear	44.940613	-70.624125	Clear Voice	2	No
4	101	AT&T	No Signal - No Call	44.946227	-70.636248	No Signal	0	No
4	17	US Cellular	-87dBm 2asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	44.946227	-70.636248	Clear Voice	2	No
4	70	Verizon	-107dBm 33asu 2 bars 4G LTE,,Call completed; voice clear	44.946227	-70.636248	Clear Voice	2	No
5	102	AT&T	No Signal - No Call	44.968734	-70.594902	No Signal	0	No
5	18	US Cellular	-84dBm 2asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	44.968734	-70.594902	Clear Voice	2	No
5	71	Verizon	-109dBm 31asu 2 bars 4G LTE,,Call completed; voice clear	44.968734	-70.594902	Clear Voice	2	No
6	103	AT&T	No Signal, No Call	44.957469	-70.613201	No Signal	0	No
6	19	US Cellular	-97dBm 1asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	44.957469	-70.613201	Clear Voice	1	No
6	72	Verizon	-106dBm 32asu 2 bars 4G LTE,,Call completed; voice clear	44.957469	-70.613201	Clear Voice	2	No
7	104	AT&T	No signal, no call	44.953959	-70.633523	No Signal	0	No
7	20	US Cellular	-82dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	44.953959	-70.633523	Clear Voice	2	No
7	73	Verizon	-111dBm 29asu 2 bars 4G LTE,,Call completed; voice clear	44.953959	-70.633523	Clear Voice	2	No
8	105	AT&T	No Signal - No Call	44.955376	-70.646415	No Signal	0	No
8	21	US Cellular	-84dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	44.955376	-70.646415	Clear Voice	2	No
8	74	Verizon	-106dBm 32asu 2 bars 4G LTE,,Call completed; voice clear	44.955376	-70.646415	Clear Voice	2	No
10	107	AT&T	No signal, no call	44.96278	-70.639908	No Signal	0	No
10	23	US Cellular	-96dBm 1 asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	44.96278	-70.639908	Clear Voice	1	No
10	75	Verizon	-120dBm 20asu 2 bars 4G LTE,,Call completed; voice clear	44.96278	-70.639908	Clear Voice	2	No
11	108	AT&T	No signal - no call	44.965274	-70.644216	No Signal	0	No
11	22	US Cellular	-96dBm 2asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	44.965274	-70.644216	Clear Voice	1	No
11	76	Verizon	-108dBm 32asu 2 bars 4G LTE,,Call completed; voice clear	44.965274	-70.644216	Clear Voice	2	No
12	109	AT&T	No Signal - No call	44.97395	-70.649337	No Signal	0	No
12	24	US Cellular	-101dBm 1asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	44.97395	-70.649337	Clear Voice	1	No
12	77	Verizon	-97dBm 1asu CDMA eHRPD 2 bars 3G,,Call completed; voice clear	44.97395	-70.649337	Clear Voice	2	No
13	110	AT&T	No Signal - No Call	45.022238	-70.63962	No Signal	0	No
13	6	US Cellular	No Signal - No Call	45.022238	-70.63962	No Signal	0	No
13	52	Verizon	No Signal - No Call	45.022238	-70.63962	No Signal	0	No
14	111	AT&T	No signal - no call	44.966539	-70.650941	No Signal	0	No
14	25	US Cellular	-105dBm 2asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	44.966539	-70.650941	Clear Voice	1	No
14	63	Verizon	-132dBm 13asu 1 bar 4G LTE,,Call completed; voice breaking up often	44.966539	-70.650941	Poor Call Quality	1	No
15	112	AT&T	No Signal - No Call	45.001605	-70.646837	No Signal	0	No
15	29	US Cellular	-110dBm 99asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	45.001605	-70.646837	Clear Voice	1	No
15	64	Verizon	-94dBm 99asu 1 bar, unknown network,,Call completed; minor voice cracking	45.001605	-70.646837	Minor Voice Cracking	1	No
16	113	AT&T	No Signal - No Call	44.967945	-70.664568	No Signal	0	No
16	50	US Cellular	-103dBm 99asu CDMA EvDo 1 bar 3G,,Call completed; voice breaking up throughout entire call	44.967945	-70.664568	Poor Call Quality	1	No
16	80	Verizon	-126dBm 14asu 2 bars 4G LTE,,Call completed; voice clear	44.967945	-70.664568	Clear Voice	2	No
17	114	AT&T	No Signal - No Call	44.967336	-70.68015	No Signal	0	No
17	26	US Cellular	-96dBm 2asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	44.967336	-70.68015	Clear Voice	1	No
17	79	Verizon	-112dBm 26asu 2 bars 4G LTE,,Call completed; voice clear	44.967336	-70.68015	Clear Voice	2	No
18	115	AT&T	No Signal - No Call	44.980696	-70.657704	No Signal	0	No
18	27	US Cellular	-92dBm 2asu CDMA EvDo 2 bar 3G,,Call completed; voice clear	44.980696	-70.657704	Clear Voice	2	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
18	78	Verizon	-111dBm 29asu 2 bars 4G LTE,,Call completed; voice clear	44.980696	-70.657704	Clear Voice	2	No
19	116	AT&T	No Signal - No Call	44.987224	-70.657498	No Signal	0	No
19	28	US Cellular	-93dBm 2asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	44.987224	-70.657498	Clear Voice	1	No
19	65	Verizon	-116dBm 24asu 2 bars 4G LTE,,Call completed; minor voice cracking	44.987224	-70.657498	Minor Voice Cracking	2	No
20	117	AT&T	No Signal - No Call	44.975799	-70.734763	No Signal	0	No
20	30	US Cellular	-87dBm 2 asu CDMA EvDo 3 bars 3G,,Call completed; clear voice	44.975799	-70.734763	Clear Voice	3	No
20	81	Verizon	-113dBm 27asu 2 bars 4G LTE,,Call completed; voice clear	44.975799	-70.734763	Clear Voice	2	No
21	118	AT&T	No Signal - No Call	44.988109	-70.735096	No Signal	0	No
21	31	US Cellular	-80dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	44.988109	-70.735096	Clear Voice	2	No
21	82	Verizon	-114dBm 27 asu 2 bars 4G LTE,,Call completed; voice clear	44.988109	-70.735096	Clear Voice	2	No
22	119	AT&T	No Signal - No Call	44.971371	-70.709983	No Signal	0	No
22	32	US Cellular	-100dBm 1asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	44.971371	-70.709983	Clear Voice	1	No
22	83	Verizon	-101dBm 1asu 2 bars, unknown network,,Call completed; voice clear	44.971371	-70.709983	Clear Voice	2	No
23	120	AT&T	No Signal - No Call	44.962346	-70.693196	No Signal	0	No
23	33	US Cellular	-94dBm 1asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	44.962346	-70.693196	Clear Voice	2	No
23	84	Verizon	-115dBm 25asu 2 bars 4G LTE,,Call completed; voice clear	44.962346	-70.693196	Clear Voice	2	No
24	121	AT&T	No Signal - No Call	44.95924	-70.716546	No Signal	0	No
24	34	US Cellular	-100dBm 1asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	44.95924	-70.716546	Clear Voice	1	No
24	85	Verizon	-117dBm 18 asu 1 bar 4G LTE,,Call completed; voice clear	44.95924	-70.716546	Clear Voice	1	No
25	122	AT&T	No Signal - No Call	44.90484	-70.783238	No Signal	0	No
25	35	US Cellular	-100dBm 1asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	44.90484	-70.783238	Clear Voice	1	No
25	86	Verizon	-124dBm 16asu 2 bars 4G LTE,,Call completed; voice clear	44.90484	-70.783238	Clear Voice	2	No
26	123	AT&T	No Signal - No Call	44.882311	-70.751284	No Signal	0	No
26	7	US Cellular	No Signal - No Call	44.882311	-70.751284	No Signal	0	No
26	53	Verizon	No Call - No Signal	44.882311	-70.751284	No Signal	0	No
27	124	AT&T	No Signal - No Call	44.967079	-70.760059	No Signal	0	No
27	37	US Cellular	-73dBm 8asu CDMA EvDo 3 bars 3G,,Call completed; voice clear	44.967079	-70.760059	Clear Voice	3	No
27	87	Verizon	-104dBm 36 3 bars 4G LTE,,Call completed; voice clear	44.967079	-70.760059	Clear Voice	3	No
28	125	AT&T	No Signal - No Call	44.91978	-70.77143	No Signal	0	No
28	38	US Cellular	-97dBm 1asu CDMA EvDo 1 bar 3G,,Call completed; voice clear	44.91978	-70.77143	Clear Voice	1	No
28	89	Verizon	-101dBm 2asu CDMA eHRPD 2 bars 3G,,Call completed; voice clear	44.91978	-70.77143	Clear Voice	2	No
29	126	AT&T	No Signal - No Call	44.963269	-70.79303	No Signal	0	No
29	39	US Cellular	-77dBm 4asu CDMA 3 bars 3G,,Call completed; voice clear	44.963269	-70.79303	Clear Voice	3	No
29	91	Verizon	-109dBm 39asu 3 bars 4G LTE,,Call completed; voice clear	44.963269	-70.79303	Clear Voice	3	No
30	127	AT&T	No Signal - No Call	44.955065	-70.790789	No Signal	0	No
30	40	US Cellular	-84dBm 4asu CDMA 2 bars 3G,,Call completed; voice clear	44.955065	-70.790789	Clear Voice	2	No
30	90	Verizon	-110 30asu 3 bars 4G LTE,,Call completed; voice clear	44.955065	-70.790789	Clear Voice	3	No
31	128	AT&T	No Signal - No Test	44.942387	-70.788703	No Signal	0	No
31	41	US Cellular	-102dBm 1asu CDMA EvDo 1 bar 3G,,Call completed; call clear	44.942387	-70.788703	Clear Voice	1	No
31	66	Verizon	-102dBm 99asu CDMA 1xRTT 1 bar,,Call completed; voice cracking at times	44.942387	-70.788703	Minor Voice Cracking	1	No
32	129	AT&T	No Signal - No Call	45.013059	-70.832894	No Signal	0	No
32	42	US Cellular	-100dBm 1 asu CDMA 1 bar 3G,,Call completed; voice clear	45.013059	-70.832894	Clear Voice	1	No
32	92	Verizon	-112dBm 23 asu 1 bar 4G LTE,,Call completed; voice clear	45.013059	-70.832894	Clear Voice	1	No
33	130	AT&T	No Signal - No Call	44.963106	-70.772388	No Signal	0	No
33	43	US Cellular	-84dBm 4asu CDMA 2 bars 3G,,Call completed; clear voice	44.963106	-70.772388	Clear Voice	2	No
33	94	Verizon	-110dBm 30asu 2 bars 4G LTE,,Call completed; voice clear	44.963106	-70.772388	Clear Voice	2	No
34	131	AT&T	No Signal - No Call	44.966167	-70.774478	No Signal	0	No
34	44	US Cellular	-73dBm 8 asu CDMA 4 bars 3G,,Call completed; voice clear	44.966167	-70.774478	Clear Voice	4	No
34	93	Verizon	-103dBm 37asu 3 bars 4G LTE,,Call completed; voice clear	44.966167	-70.774478	Clear Voice	3	No
35	132	AT&T	No Signal - No Call	44.954856	-70.759817	No Signal	0	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
35	45	US Cellular	-103dBm 1asu CDMA 1 bar 3G,,Call completed; voice clear	44.954856	-70.759817	Clear Voice	1	No
35	95	Verizon	-115dBm 25asu 2 bars 4G LTE,,Call completed; voice clear	44.954856	-70.759817	Clear Voice	2	No
36	133	AT&T	No Signal - No Call	44.938442	-70.750479	No Signal	0	No
36	47	US Cellular	-93dBm 2asu CDMA 1 bar 3G,,Call completed; voice clear	44.938442	-70.750479	Clear Voice	1	No
36	96	Verizon	-117dBm 23asu 1 bar 4G LTE,,Call completed; voice clear	44.938442	-70.750479	Clear Voice	1	No
37	134	AT&T	No Signal - No Call	44.93394	-70.65754	No Signal	0	No
37	48	US Cellular	-95dBm 2asu CDMA 1 Bar 3G,,Call completed; voice clear	44.93394	-70.65754	Clear Voice	1	No
37	67	Verizon	-113dBm 25asu 2 bars 4G LTE,,Call completed; static at times, no drop outs	44.93394	-70.65754	Minor Voice Cracking	2	No
38	135	AT&T	No Signal - No Call	44.927467	-70.634957	No Signal	0	No
38	49	US Cellular	-100dBm 1asu CDMA 1 bar 3G,,Call completed; clear voice	44.927467	-70.634957	Clear Voice	1	No
38	68	Verizon	-104dBm 99asu CDMA 1xRTT 2 bars,,Call completed; voice cracking up at times	44.927467	-70.634957	Minor Voice Cracking	2	No
39	136	AT&T	No Signal - No Call	44.902328	-70.614726	No Signal	0	No
39	13	US Cellular	No Signal - No Call	44.902328	-70.614726	No Signal	0	No
39	59	Verizon	No Signal - No Call	44.902328	-70.614726	No Signal	0	No
40	137	AT&T	No Signal - No Call	44.88973	-70.577731	No Signal	0	No
40	11	US Cellular	No Signal - No Call	44.88973	-70.577731	No Signal	0	No
40	57	Verizon	No Signal - No Call	44.88973	-70.577731	No Signal	0	No
41	138	AT&T	No Signal - No Call	44.893735	-70.560479	No Signal	0	No
41	10	US Cellular	No Signal - No Call	44.893735	-70.560479	No Signal	0	No
41	56	Verizon	No Signal - No Call	44.893735	-70.560479	No Signal	0	No
42	139	AT&T	No Signal - No Call	44.888744	-70.592634	No Signal	0	No
42	12	US Cellular	No Signal - No Call	44.888744	-70.592634	No Signal	0	No
42	55	Verizon	No Signal - No Call	44.888744	-70.592634	No Signal	0	No
43	140	AT&T	No Signal - No Call	44.891246	-70.601078	No Signal	0	No
43	9	US Cellular	No Signal - No Call	44.891246	-70.601078	No Signal	0	No
43	58	Verizon	No Signal - No Call	44.891246	-70.601078	No Signal	0	No
44	141	AT&T	No Signal - No Call	44.906056	-70.726688	No Signal	0	No
44	46	US Cellular	-82dBm 4asu CDMA 3 bars 3G,,Call completed; voice clear	44.906056	-70.726688	Clear Voice	3	No
44	97	Verizon	-115dBm 25asu 2 bars 4G LTE,,Call completed; voice clear	44.906056	-70.726688	Clear Voice	2	No
45	142	AT&T	No Signal - No Call	44.912571	-70.609683	No Signal	0	No
45	8	US Cellular	No Signal - No Call	44.912571	-70.609683	No Signal	0	No
45	60	Verizon	No Signal - No Call	44.912571	-70.609683	No Signal	0	No
46	143	AT&T	No Signal - No Call	44.9681	-70.731557	No Signal	0	No
46	36	US Cellular	-79dBm 4asu CDMA EvDo 2 bars 3G,,Call completed; voice clear	44.9681	-70.731557	Clear Voice	2	No
46	88	Verizon	-98dBm 42asu 4 bars 4G LTE,,Call completed; voice clear	44.9681	-70.731557	Clear Voice	4	No
47	144	AT&T	No Signal - No Call	44.896301	-70.550589	No Signal	0	No
47	14	US Cellular	No Signal - No Call	44.896301	-70.550589	No Signal	0	No
47	61	Verizon	No Signal - No Call	44.896301	-70.550589	No Signal	0	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
1	8	AT&T	-81dBm 14asu HSPA 4 bars 4G,,Call completed; voice clear	44 364366	-68.625553	Clear Voice	4	No
1	49	US Cellular	-71dBm 9 asu 3 bars CDMA EvDo,,Call completed; clear voice	44 364396	-68.625584	Clear Voice	3	No
1	89	Verizon	-79dBm 99asu 1xRTT 5 bars 1X,,Call completed; clear voice	44 364366	-68.625543	Clear Voice	5	No
2	7	AT&T	Town Office,,-113dBm 0asu, 4G, 1 bars HSPA,,Call completed, no drops, minor crackle, voice clear	44 308096	-68.615937	Minor Voice Cracking	1	Yes
2	42	US Cellular	Town Office, Call Failed, would not connect, No signal	44 308136	-68.615937	No Signal	0	Yes
2	83	Verizon	Town Office, Call Failed, no signal	44 308124	-68.615928	No Signal	0	Yes
3	9	AT&T	-79dBm 17asu HSPA 4 bars 4G,,Call completed; voice clear	44 344877	-68.595899	Clear Voice	4	No
3	50	US Cellular	-69dBm 8 asu 3 bars CDMA EvDo,,Call completed; clear voice	44.34486	-68.595863	Clear Voice	3	No
3	90	Verizon	-76dBm 99asu 1xRTT 5 bars 1X,,Call completed; clear voice	44 344874	-68.595922	Clear Voice	5	No
4	10	AT&T	-87dBm 13 asu HSPA 4 bars 4G,,Call completed; clear voice	44 322941	-68.675812	Clear Voice	4	No
4	45	US Cellular	-80dBm 1 asu 1 bar 3G,,Call completed; voice breaking up	44 322821	-68.675682	Minor Voice Cracking	1	No
4	91	Verizon	-90dBm 99asu 1xRTT 3 bars 1X,,Call completed; voice clear	44 322796	-68.675734	Clear Voice	3	No
5	11	AT&T	-102dBm 6asu HSPA+ 2 bars 4G,,Call completed; clear voice	44 304136	-68.674041	Clear Voice	2	No
5	46	US Cellular	-103dBm 99asu 0 bars, network unknown,,Call completed; voice breaking up	44 304203	-68.674068	Poor Call Quality	0	No
5	78	Verizon	-99dBm 99asu 1xRTT 2 bars 1X,,Call Failed; would not dial out	44 304152	-68.674126	No Signal	2	No
6	12	AT&T	-82dBm 16 asu HSPA+ 4bars 4G,,Call completed; clear voice	44 306159	-68.577406	Clear Voice	4	No
6	51	US Cellular	-82dBm 4asu 3 bars CDMA EvDO,,Call completed; clear voice	44.30618	-68.577428	Clear Voice	3	No
6	92	Verizon	-86dBm 99asu 1xRTT 4 bars 1X,,Call completed; clear voice	44 306164	-68.577439	Clear Voice	4	No
7	13	AT&T	-97dBm 8 asu HSPA 3 bars 4G,,Call completed; clear voice	44 323333	-68.570736	Clear Voice	3	No
7	52	US Cellular	-90dBm 4asu 2 bars, unknown network,,Call completed; clear voice	44 323328	-68.570729	Clear Voice	2	No
7	93	Verizon	-87dBm 99asu 1xRTT 3 bars 1X,,Call completed; clear voice	44 323302	-68.570736	Clear Voice	3	No
8	14	AT&T	-86dBm 14 asu HSPA 4 bars 4G,,Call completed; clear voice	44 288454	-68.555281	Clear Voice	4	No
8	53	US Cellular	-72dBm 8 asu CDMA EvDO 4 bars,,Call completed; clear voice	44 288488	-68.55527	Clear Voice	4	No
8	94	Verizon	-97dBm 99asu 1xRTT 3 bars,,Call completed; clear voice	44 288452	-68.555273	Clear Voice	3	No
9	15	AT&T	-80dBm 17asu HSPA 4 bars 4G,,Call completed; clear voice	44 281299	-68.532987	Clear Voice	4	No
9	54	US Cellular	-82dBm 4 asu 3 bars CDMA EvDO,,Call completed; clear voice	44 281339	-68.532983	Clear Voice	3	No
9	95	Verizon	-90dBm 99asu 1xRTT 3 bars 1X,,Call completed; clear voice	44 281293	-68.532996	Clear Voice	3	No
10	16	AT&T	-95dBm 9 asu HSPA+ 3 bars 4G,,Call completed; clear voice	44 263612	-68.522585	Clear Voice	3	No
10	55	US Cellular	-79dBm 4asu CDMA EvDO 2 bars 3G,,Call completed; clear voice	44 263603	-68.522557	Clear Voice	2	No
10	96	Verizon	-93dBm 99asu 1xRTT 3 bars,,Call completed; clear voice	44 263592	-68.522567	Clear Voice	3	No
11	17	AT&T	-90dBm 12 asu HSPA+ 3 bars 4G,,Call completed; clear voice	44 257081	-68.545397	Clear Voice	3	No
11	56	US Cellular	-86dBm 4 asu 2 bars unknown network,,Call completed; clear voice	44 257062	-68.545349	Clear Voice	2	No
11	97	Verizon	-97dBm 99asu 1xRTT 2 bars,,Call completed; clear voice	44 257028	-68.545298	Clear Voice	2	No
12	18	AT&T	-103dBm 5 asu HSPA+ 2 bars 4G LTE,,Call completed; voice clear	44.23638	-68.544587	Clear Voice	2	No
12	57	US Cellular	-93dBm 2 asu 2 bars unknown network,,Call completed; clear voice	44 236358	-68.544577	Clear Voice	2	No
12	98	Verizon	-98dBm 99asu 1xRTT 2 bars,,Call completed; clear voice	44 236391	-68.544592	Clear Voice	2	No
13	19	AT&T	-98dBm 8 asu HSPA+ 2 bars 4G,,Call completed; voice clear	44 230661	-68.532467	Clear Voice	2	No
13	58	US Cellular	-94dBm 2 asu CDMA EvDO 3 bars,,Call completed, clear voice	44 230664	-68.532477	Clear Voice	3	No
13	99	Verizon	-100dBm 99asu 1xRTT 3 bars,,Call completed; clear voice	44 230643	-68.532462	Clear Voice	3	No
14	6	AT&T	-110dBm 28asu 2 bars 4G LTE,,Call failed; would not connect to dial	44 237812	-68.53231	No Signal	2	No
14	59	US Cellular	-91dBm 2 asu CDMA EvDO 1 bar 3G,,Call completed; clearly	44 237821	-68.532285	Clear Voice	1	No
14	100	Verizon	-100dBm 99asu 1xRTT 1 bar,,Call completed, clear voice	44 237794	-68.532302	Clear Voice	1	No
15	20	AT&T	-102 6 asu HSPA+ 2 Bars 4G,,Call completed clearly.	44.24631	-68.532619	Clear Voice	2	No
15	60	US Cellular	-90 4 asu Unknown 2 Bars 3G,,Call completed clearly.	44 246315	-68.532617	Clear Voice	2	No
15	101	Verizon	-94 99 asu 1xRTT 3 Bars 1x,,Call completed clearly.	44 246311	-68.532612	Clear Voice	3	No
16	21	AT&T	-103 5 asu HSPA+ 2 Bars 4G,,Call completed clearly.	44 248704	-68.544028	Clear Voice	2	No
16	61	US Cellular	-96 2 asu Unknown 2 Bars 3G,,Call completed clearly.	44 248666	-68.544038	Clear Voice	2	No
16	102	Verizon	-97 99 asu 1xRTT 2 Bars 1x,,Call completed clearly	44 248698	-68.544015	Clear Voice	2	No
17	22	AT&T	-108 2 asu HSPA+ 1 Bar 4G,,Call completed clearly.	44 252064	-68.563288	Clear Voice	1	No
17	62	US Cellular	-99 1 asu Unknown 1 Bar 3G,,Call completed clearly.	44.25206	-68.563274	Clear Voice	1	No
17	79	Verizon	-99 99 asu 1xRTT 1 Bar 1x,,Call dropped.	44.25208	-68.563296	No Signal	1	No
18	23	AT&T	-97 9 asu HSPA+ 3 Bars 4G,,Call completed clearly.	44 260229	-68.564941	Clear Voice	3	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
18	63	US Cellular	-90 4 asu Unknown 2 Bars 3G,,Call completed clearly.	44 260196	-68.564941	Clear Voice	2	No
18	80	Verizon	-100 99 asu 1xRTT 2 Bars 1x,,Call dropped.	44 260193	-68.564937	No Signal	2	No
19	24	AT&T	--95 9 asu HSPA+ 3 Bard 4G,,Call completed clearly.	44 265982	-68.568983	Clear Voice	3	No
19	64	US Cellular	-91 2 asu CDMA - EvDo rev. A 2 Bars 3G,,Call completed clearly.	44.266	-68.569005	Clear Voice	2	No
19	103	Verizon	-97 99 asu 1xRTT 2 Bars 1x,,Call completed clearly.	44 266009	-68.569048	Clear Voice	2	No
20	25	AT&T	-91 7 asu HSPA+ 3 Bard 4G,,Phone call completed clearly.	44 266769	-68.586386	Clear Voice	3	No
20	65	US Cellular	-89 2 asu CDMA - EvDo rev. A 1 Bar 3G,,Call completed clearly	44 266936	-68.586354	Clear Voice	1	No
20	85	Verizon	-96 00 asu 1xRTT 2 Bars 1x,,Call completed but a little choppy.	44 266811	-68.586403	Minor Voice Cracking	2	No
21	26	AT&T	-99 7asu HSPA+ 2 Bars 4G,,Call Completed Clearly	44 277081	-68.608937	Clear Voice	2	No
21	66	US Cellular	-87 2 asu CDMA - EvDo rev. A,,Call completed clearly.	44 277142	-68.609016	Clear Voice	1	No
21	104	Verizon	-97 99 asu 1xRTT 2 Bars 1x,,Call completed clearly	44 277112	-68.608989	Clear Voice	2	No
22	27	AT&T	-101dBm 8asu HSPA+ 2 bars 4G,,Call completed, clear voice	44 285799	-68.62021	Clear Voice	2	No
22	67	US Cellular	-87dBm 2asu CDMA - EvDo rev 2 bars 3G,,Call completed, clear voice	44 285854	-68.620173	Clear Voice	2	No
22	105	Verizon	-98dBm 99asu 1xRTT 2 bars 1x,,Call completed, clear voice	44.28571	-68.620169	Clear Voice	2	No
23	28	AT&T	-100dBm 7asu HSPA 2 bars 4G,,Call completed, clear voice	44 294168	-68.615393	Clear Voice	2	No
23	68	US Cellular	-92dBm 2 asu 2 bars, network unknown,,Call completed, voice clear	44 294229	-68.615381	Clear Voice	2	No
23	106	Verizon	-95dBm 2 asu CDMA 1xRTT 3 bars, roaming,,Call completed, voice clear	44 294101	-68.615443	Clear Voice	3	No
24	29	AT&T	-99dBm 7 asu HSPA+ 2 bars 4G,,Call completed, call clear	44 302892	-68.60886	Clear Voice	2	No
24	69	US Cellular	-95dBm 2 asu CDMA EvDo 1 bar 3G,,Call completed; clear	44 302862	-68.608859	Clear Voice	1	No
24	81	Verizon	-99dBm 1 asu CDMA 1xRTT 2 bars,,Call failed; could not connect	44 302888	-68.608886	No Signal	2	No
25	30	AT&T	Post Office,,-97dBm 8 asu, 3 bars 4G, HSPA,,Call completed, no static or dops	44.30385	-68.621312	Clear Voice	3	Yes
25	44	US Cellular	-101dBm 0asu, 0 bars,,Call completed; minor voice crackling, no drop outs	44 303837	-68.621326	Minor Voice Cracking	0	Yes
25	84	Verizon	Post Office,,-99dBm 1 asu, 2 bar, CDMA 1xRTT roaming,,Call completed, minor crackling, no drops	44 303849	-68.621326	Minor Voice Cracking	2	Yes
26	31	AT&T	-104dBm 5asu, 4G, 2 bars HSPA,,Call completed, no drops or static	44 310456	-68.614225	Clear Voice	2	No
26	43	US Cellular	Call failed, -117dBm 0 asu, no bars	44 310583	-68.61425	No Signal	0	No
26	82	Verizon	Call failed, 25 seconds into call became choppy, then disconnected,,-103dBm 0 asu, 1 bars, CDMA 1xRTT roaming	44 310528	-68.614199	Poor Call Quality	1	No
27	32	AT&T	-86dBm 14asu, 4G, 4bars HSPA,,Call completed, no drops or static	44 317028	-68.611638	Clear Voice	4	No
27	70	US Cellular	-86dBm 4asu, 3 bars CDMA EvDo,,Call completed; no static, no drop outs	44 316913	-68.611648	Clear Voice	3	No
27	107	Verizon	-85dBm 4 asu, 4 bars, CDMA 1xRTT roaming,,Call completed, no static, no drops	44 316977	-68.611635	Clear Voice	4	No
28	33	AT&T	-90dBm 12asu, 4G, 4bars,,Call completed, no drops or static	44 318847	-68.626331	Clear Voice	4	No
28	71	US Cellular	-99dBm 1asu, 3 bars CDMA EvDo,,Call completed; no static, no drop outs	44 318807	-68.626256	Clear Voice	3	No
28	108	Verizon	-87dBm 4 asu, 4 bars, CDMA 1xRTT roaming,,Call completed, no static, no drops	44 318847	-68.626297	Clear Voice	4	No
29	34	AT&T	-101dBm 38asu, 4G, 4bars LTE,,Call completed, no drops or static	44 315022	-68.637987	Clear Voice	4	No
29	72	US Cellular	-80dBm 8asu, 3 bars CDMA EvDo,,Call completed; no static, no drop outs	44 315162	-68.63802	Clear Voice	3	No
29	109	Verizon	-83dBm 4 asu, 4 bars, CDMA 1xRTT roaming,,Call completed, no static, no drops	44 315068	-68.63802	Clear Voice	4	No
30	35	AT&T	-83dBm 16asu, 4G, 4bars HSPA,,Call completed, no drops or static	44 299424	-68.635644	Clear Voice	4	No
30	73	US Cellular	-84dBm 4asu, 3 bars CDMA EvDo,,Call completed; no static, no drop outs	44 299376	-68.635601	Clear Voice	3	No
30	113	Verizon	-87dBm 4 asu, 3 bars, CDMA 1xRTT roaming,,Call completed, no static, no drops	44 299372	-68.635603	Clear Voice	3	No
31	36	AT&T	-93dBm 47asu, 4G, 3 bars LTE,,Call completed, no drops or static	44 295642	-68.648486	Clear Voice	3	No
31	74	US Cellular	-98dBm 21asu, 1 bar CDMA EvDo,,Call completed; no static, no drop outs	44.29575	-68.648452	Clear Voice	1	No
31	110	Verizon	-89dBm 4 asu, 3 bars, CDMA 1xRTT roaming,,Call completed, no static, no drops	44 295737	-68.648434	Clear Voice	3	No
32	37	AT&T	-89dBm 12asu, 4G, 3 bars HSPA,,Call completed, no drops or static	44 290236	-68.632984	Clear Voice	3	No
32	75	US Cellular	-95dBm 2asu, 2 bar CDMA EvDo,,Call completed; no static, no drop outs	44 290171	-68.633076	Clear Voice	2	No
32	111	Verizon	-94dBm 2 asu, 3 bars, CDMA 1xRTT roaming,,Call completed, no static, no drops	44 290204	-68.63303	Clear Voice	3	No
33	38	AT&T	-102dBm 6asu, 4G, 2 bars HSPA+,Call completed, no drops or static	44 303324	-68.625408	Clear Voice	2	No
33	76	US Cellular	-92dBm 4asu, 2 bar CDMA EvDo,,Call completed; no static, no drop outs	44 303348	-68.625391	Clear Voice	2	No
33	88	Verizon	-95dBm 2 asu, 3 bars, CDMA 1xRTT roaming,,Call completed, no static, no drops	44 303348	-68.625391	Clear Voice	3	No
34	39	AT&T	-107dBm 3asu, 4G, 1 bar HSPA+,Call completed, no drops or static	44 304227	-68.620466	Clear Voice	1	No
34	47	US Cellular	-100dBm 2asu, 1 bar CDMA EvDo,,Call completed; minor voice crackling, no drop outs	44 304208	-68.62051	Minor Voice Cracking	1	No
34	86	Verizon	-98dBm 1 asu, 2 bar, CDMA 1xRTT roaming,,Call completed, minor crackling, no drops	44 304219	-68.620482	Minor Voice Cracking	2	No
35	40	AT&T	-103dBm 36asu, 4G LTE, 3 bars,,Call completed, no drops or static	44 305707	-68.616127	Clear Voice	3	No
35	48	US Cellular	-100dBm 1asu, 1 bar CDMA EvDo,,Call completed; minor voice crackling, no drop outs	44 305673	-68.616049	Minor Voice Cracking	1	No

Test Site	Call No.	Carrier	Signal & Voice Quality	Latitude	Longitude	Call Quality	Reception Bars	Indoor
35	87	Verizon	-101dBm 1 asu, 1 bar, CDMA 1xRTT roaming,,Call completed, minor crackling, no drops	44 305684	-68.616082	Minor Voice Cracking	1	No
36	41	AT&T	-92dBm 42asu 4G LTE, 5 bars,,Call completed, no drops or static	44 304181	-68.612316	Clear Voice	5	No
36	77	US Cellular	-97dBm 2asu, 1 bar of 3G,,Phone Call Completed; 2 minute call with no drops or static	44 304181	-68.612316	Clear Voice	1	No
36	112	Verizon	-92dbm 2asu, 3 bars 1X CDMA 1xRTT (roaming),Call completed, no drop outs or static	44 304199	-68.612279	Clear Voice	3	No
37	0	Verizon	-103dBm 99asu CDMA 1xRTT 2 bars, call completed; voice clear,	44.34246	-68.673818	Clear Voice	2	No
38	0	Verizon	-84dBm 4asu CDMA 1xRTT 4 bars, call completed; voice clear,	44.35947	-68.663068	Clear Voice	4	No
39	0	Verizon	-93dBm 2asu CDMA 1xRTT 3 bars (roaming), call completed; voice clear	44 368038	-68.657034	Clear Voice	3	No
40	0	Verizon	-105dBm 99ASU CDMA 1xRTT 1 bar, call completed; minor voice cracking,	44 380445	-68.660805	Minor Voice Cracking	1	No
41	0	Verizon	-82dBm 8ASU CDMA 1xRTT 4 bars, call completed; voice clear	44 386629	-68.663342	Clear Voice	4	No
42	0	Verizon	-112dBm 23ASU 4G LTE 2 bars, call completed; voice breaking a few times throughout call	44.38272	-68.647577	Minor Voice Cracking	2	No
43	0	Verizon	-96dBm 1asu CDMA 1xRTT 1 bar, call completed; voice clear,	44 376896	-68.640439	Clear Voice	1	No
48	0	AT&T	-101dBm 39asu LTE 4G 3 bars, call completed; voice clear	44.34246	-68.673818	Clear Voice	3	No
48	0	US Cellular	-95dBm 2asu CDMA 1xRTT 2 bars, call completed; voice clear	44.34246	-68.673818	Clear Voice	2	No
49	0	AT&T	-97dBm 42asu LTE 4G 3 bars, call completed; voice clear	44.35947	-68.663068	Clear Voice	3	No
49	0	US Cellular	-81dBm 8asu CDMA 1xRTT 3 bars, call completed; voice clear	44.35947	-68.663068	Clear Voice	3	No
50	0	AT&T	-108dBm 30ASU LTE 4G 2 bars, call completed; voice clear	44 368038	-68.657034	Clear Voice	2	No
50	0	US Cellular	-91dBm 2asu CDMA 1xRTT 2 bars, call completed; voice clear	44 368038	-68.657034	Clear Voice	2	No
51	0	AT&T	-101dBm 39ASU 4G LTE 3 bars, call completed; voice clear	44 380445	-68.660805	Clear Voice	3	No
51	0	US Cellular	-96dBm 2ASU CDMA 1xRTT 2 bars, call completed; voice clear	44 380445	-68.660805	Clear Voice	2	No
52	0	AT&T	-94dBm 46ASU 4G LTE 4 bars, call completed; voice clear	44 386629	-68.663342	Clear Voice	4	No
52	0	US Cellular	-86dBm 4asu CDMA 1xRTT 3 bars, call completed; voice clear	44 386629	-68.663342	Clear Voice	3	No
53	0	AT&T	-95dBm 43ASU 4G LTE 3 bars, call completed; voice clear	44.38272	-68.647577	Clear Voice	4	No
53	0	US Cellular	-87dBm 4ASU CDMA 1xRTT 2 bars, call completed; minor voice breaking	44.38272	-68.647577	Minor Voice Cracking	3	No
54	0	AT&T	-96dBm 44asu 4G LTE 3 bars; call completed, voice clear	44 376896	-68.640439	Clear Voice	3	No
54	0	US Cellular	-96dBm 1asu CDMA 1xRTT 1 bar, call completed; voice clear	44 376896	-68.640439	Clear Voice	1	No