



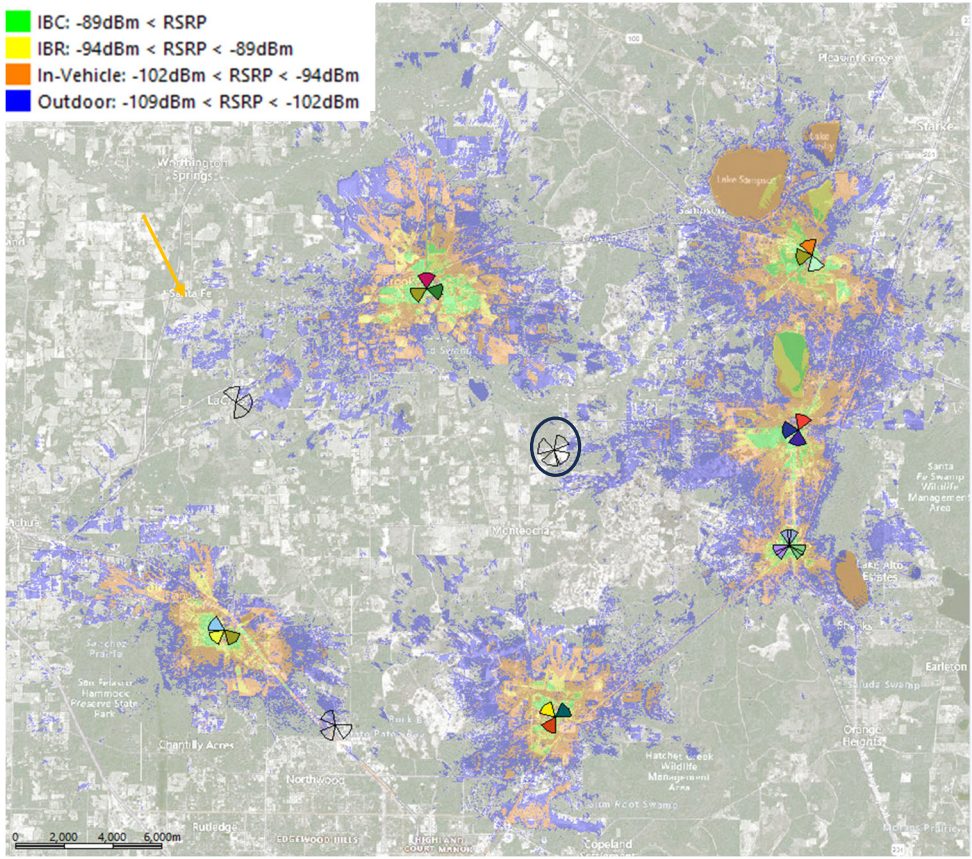
RF Package  
Macro Site 9JK2816

# Objective

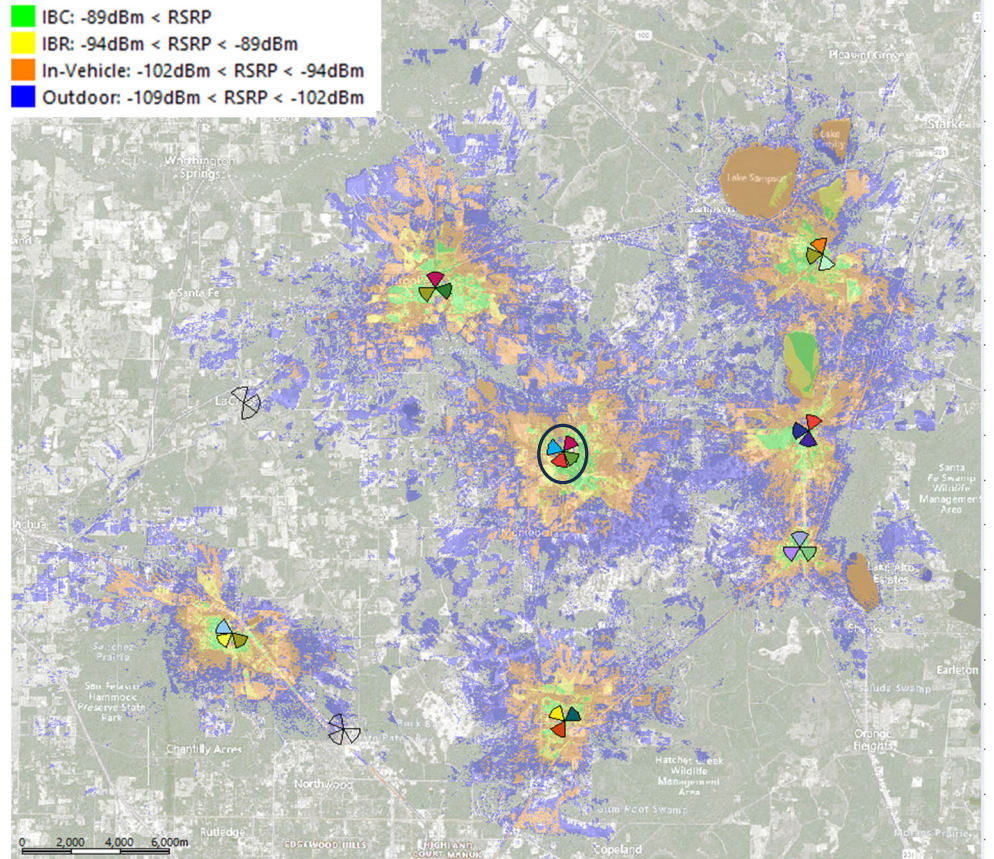
- Provide indoor coverage our customers in the Montechoa area, In vehicle coverage on Hwy 225 and the surrounding areas.
- location: 29.8260307312012, -82.2688903808594
- In order to provide coverage to our customers in the Montechoa area, Hwy 225 and the surrounding areas, we propose the following.
  - Request to build a new tower within the search ring for 9JK2816.
  - Proposed site will allow us to deploy a full array that will include L21,L6,L7,N6,N19,N25.
  - Full array will allow deployment of our entire Mid-Band, Low-Band and 5G spectrum portfolio and provide Ultra Capacity 5G to this area.
    - By utilizing the Full Array (Tower mounted integrated radios) will allow Ultra Capacity 5G.
    - Ultra Capacity 5G provides up to 35% increase in download speeds (depending on the traffic volume) vs the ground mounted radios.
    - Tower mounted radios provides increased coverage area and better in-building penetration.
    - Tower mounted radios greatly reduces intermodulation issues and noise issues caused by diplexing for ground radio solutions.



# 5G Mid-Band Coverage Analysis – Band 41\_n41\_TDD



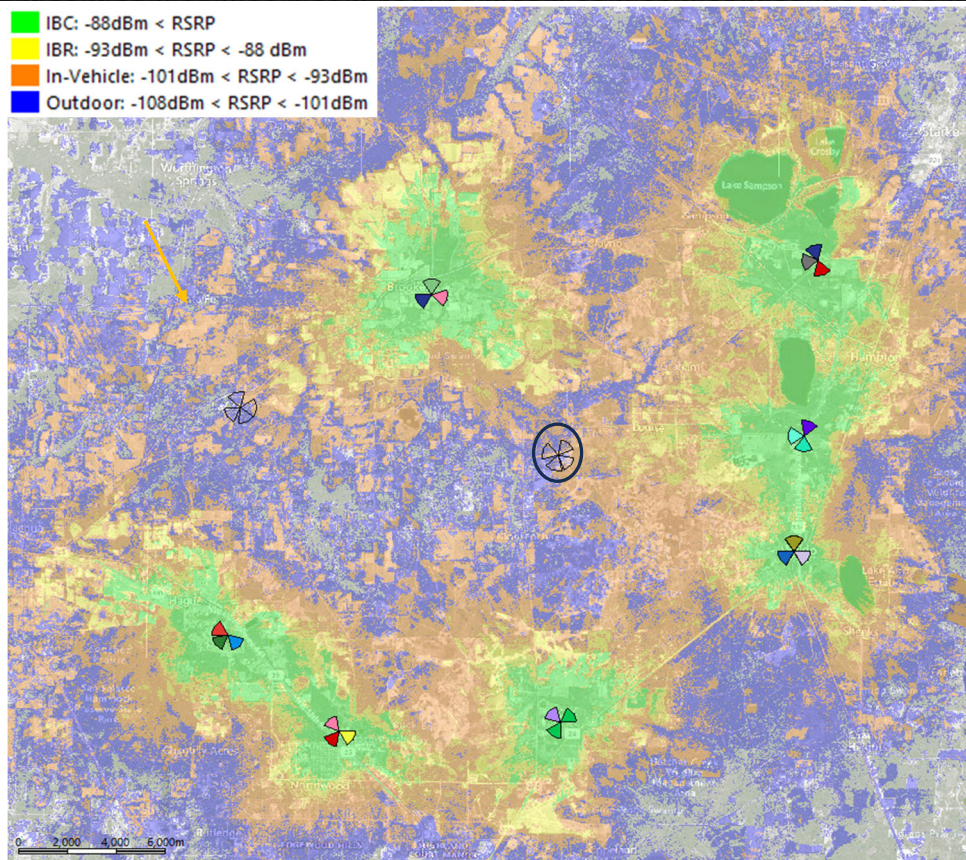
- Existing 5G Low-Band Coverage.



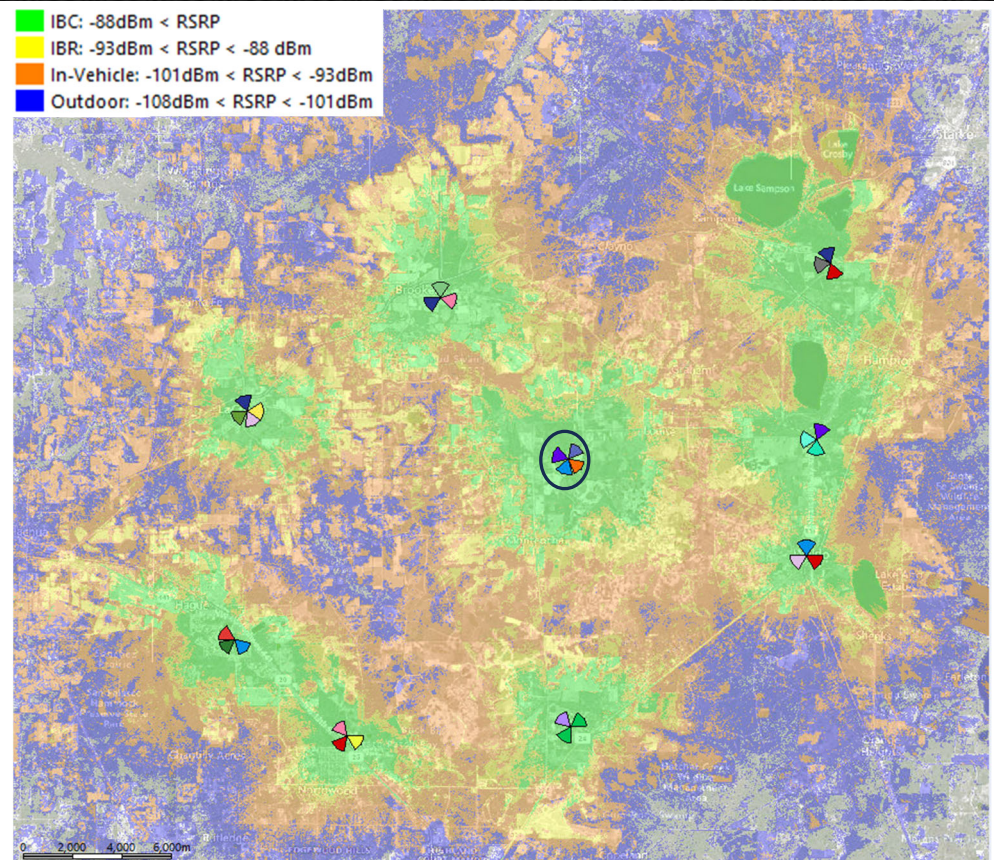
- Existing and planned 5G Low-Band Coverage with proposed site.



# 5G Low-Band Coverage Analysis – Band 71\_n71\_FDD



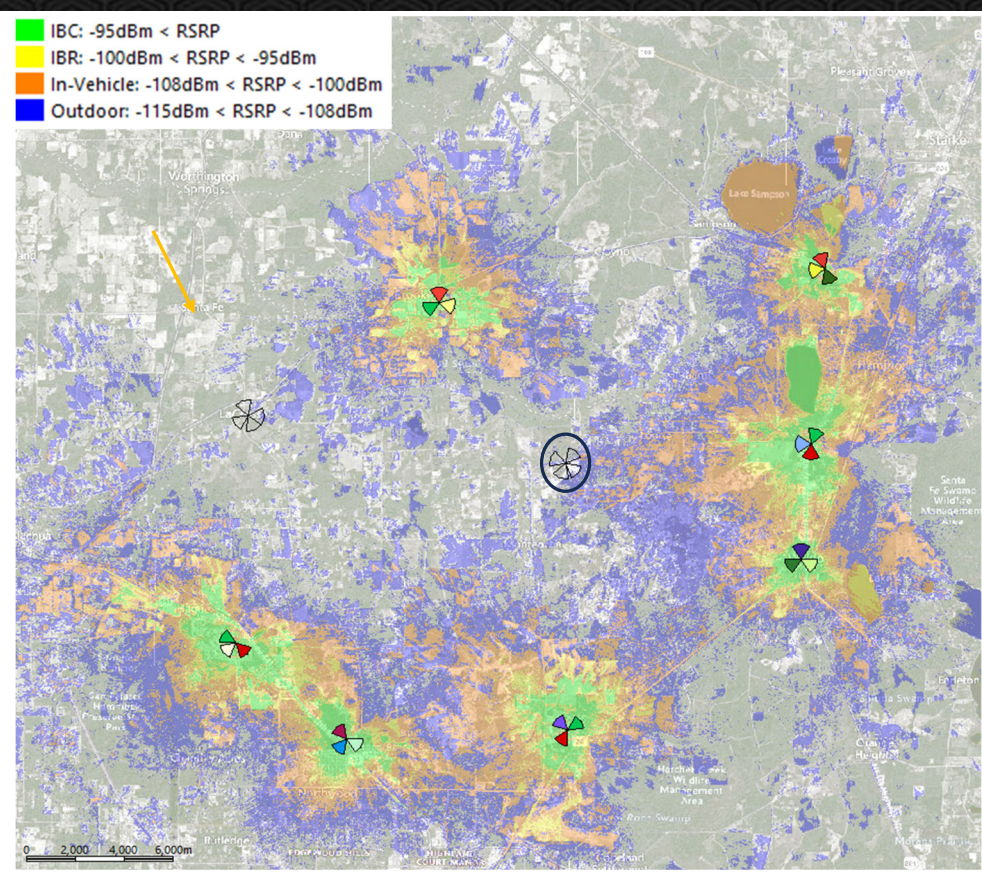
- Existing 5G Low-Band Coverage.



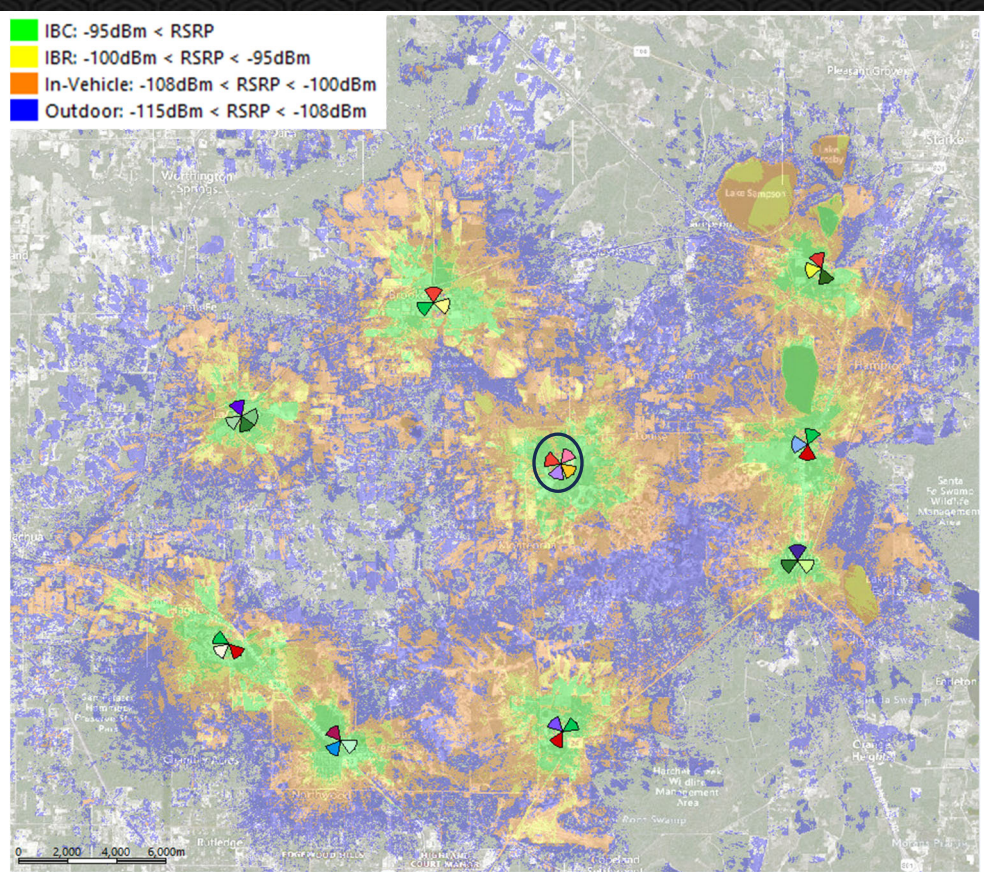
- Existing and planned 5G Low-Band Coverage with proposed site.



# LTE Mid-Band Coverage Analysis – Band 4\_E-UTRA band 4



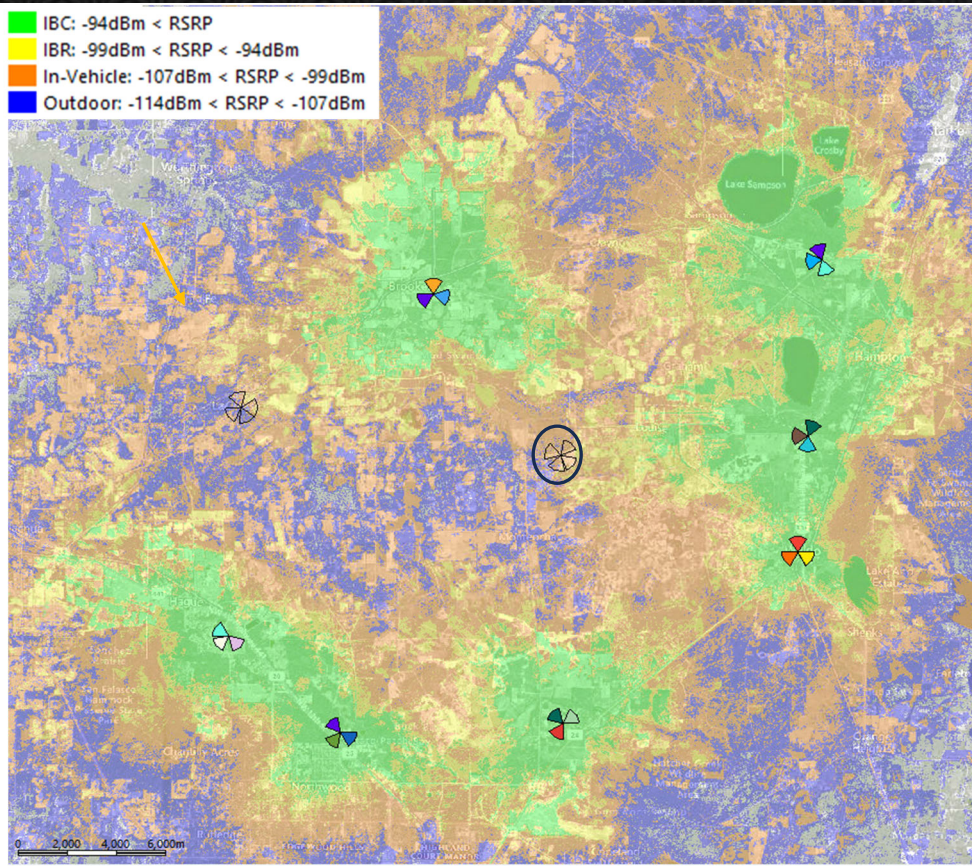
- Existing Mid-Band Coverage.



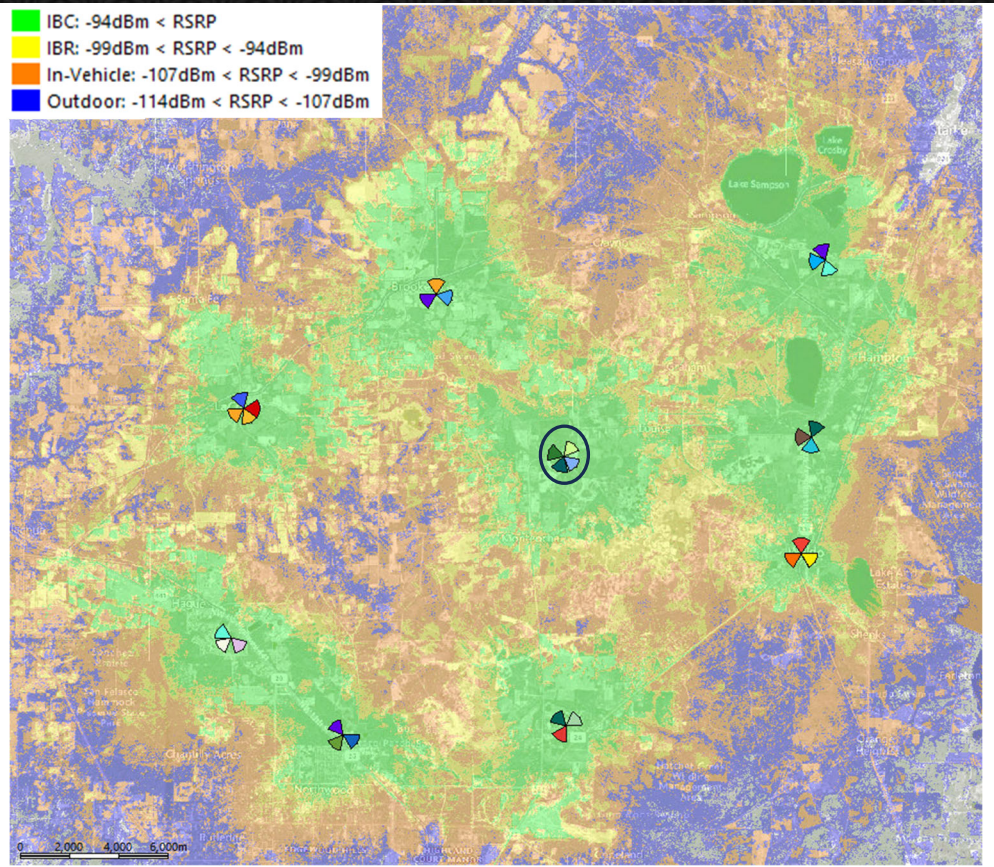
- Existing and planned Mid-Band Coverage with proposed site.



# LTE Low-Band Coverage Analysis - Band 71\_E-UTRA band 71



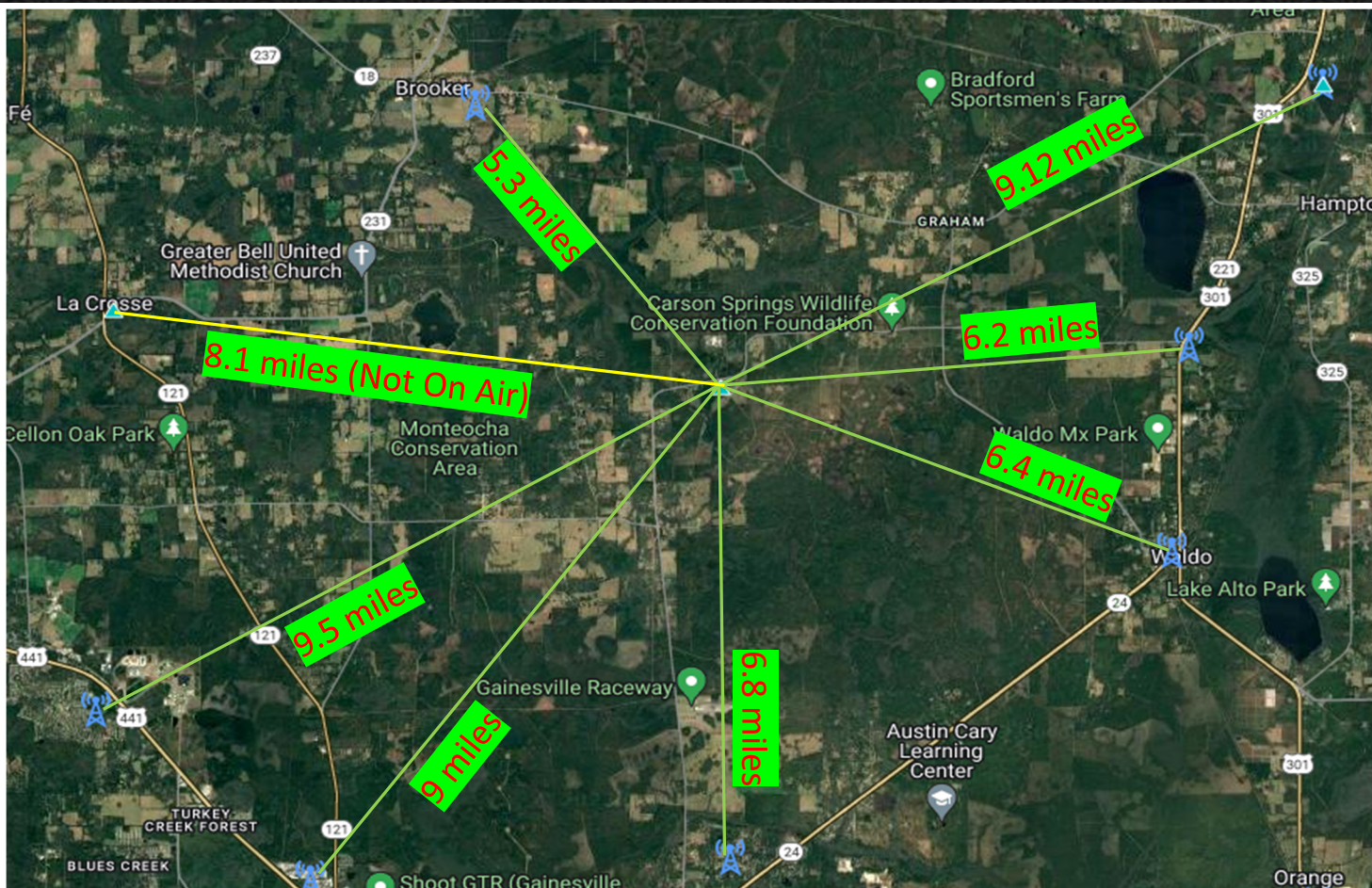
- Existing Low-Band Coverage.



- Existing and planned Low-Band Coverage with proposed site.



# First Tier Handoff Sites





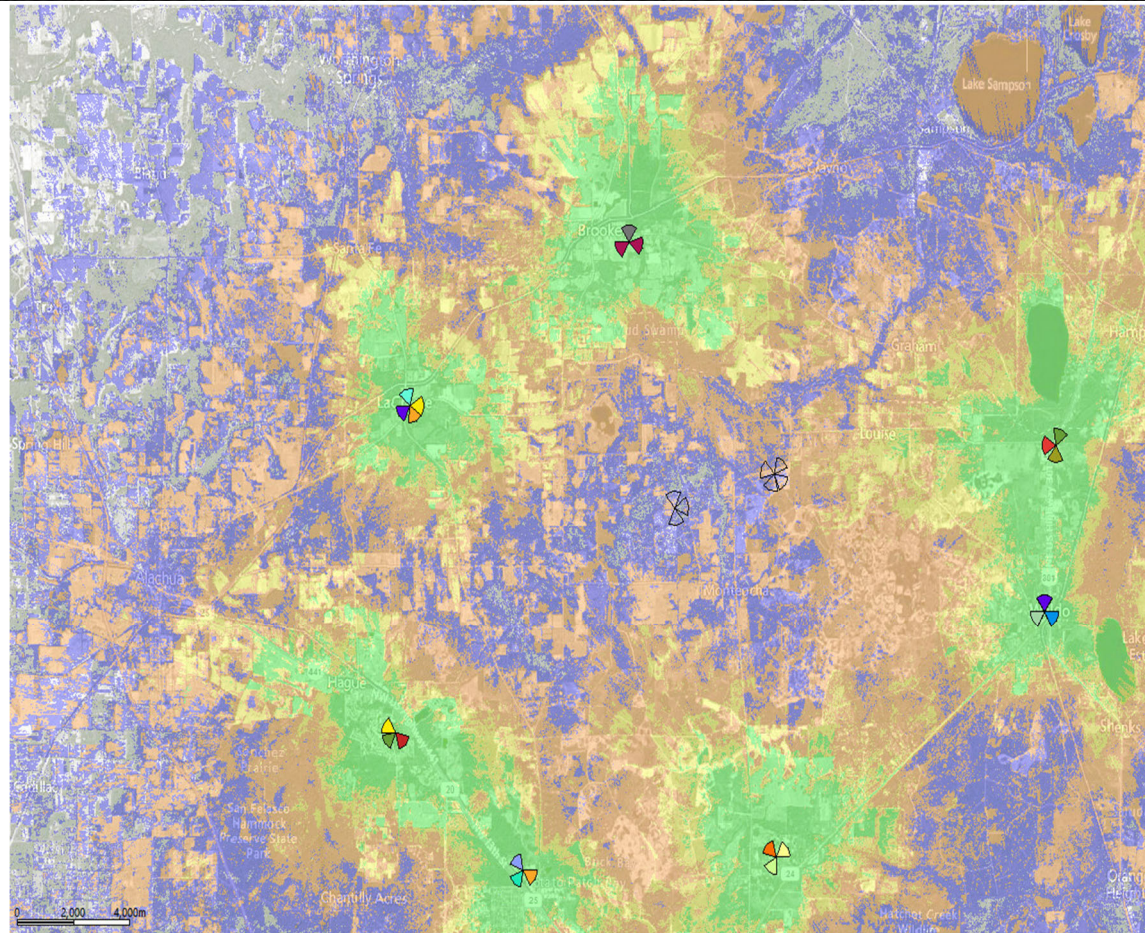
# Antenna Data of Existing and Proposed site

Site	Transmitter	Latitude	Longitude	Antenna	Height (m)	Azimuth (°)	Mechanical Downtilt (°)
9JK0103A	9JK0103A_11	29.757095	-82.406885	FFVV-65C-R3-V1	76.2	135	0
9JK0103A	9JK0103A_21	29.757095	-82.406885	FFVV-65C-R3-V1	76.2	230	0
9JK0103A	9JK0103A_31	29.757095	-82.406885	FFVV-65C-R3-V1	76.2	300	0
9JK0105A	9JK0105A_11	29.72586663	-82.2668328	FFVV-65C-R3-V1	57.3	55	0
9JK0105A	9JK0105A_21	29.72586663	-82.2668328	FFVV-65C-R3-V1	57.3	210	0
9JK0105A	9JK0105A_31	29.72586663	-82.2668328	FFVV-65C-R3-V1	57.3	315	0
9JK0188D	9JK0188D_11	29.834333	-82.1656937	FFVV-65C-R3-V1	76.2	22	0
9JK0188D	9JK0188D_21	29.834333	-82.1656937	FFVV-65C-R3-V1	76.2	185	0
9JK0188D	9JK0188D_31	29.834333	-82.1656937	FFVV-65C-R3-V1	76.2	270	0
9JK1268A	9JK1268A_11	29.721592	-82.35962	FFVV-65C-R3-V1	51.82	120	0
9JK1268A	9JK1268A_21	29.721592	-82.35962	FFVV-65C-R3-V1	51.82	220	0
9JK1268A	9JK1268A_31	29.721592	-82.35962	FFVV-65C-R3-V1	51.82	320	0
9JK1816A	9JK1816A_11	29.8424	-82.403	FFVV-65C-R3-V1	45.72	340	0
9JK1816A	9JK1816A_21	29.8424	-82.403	FFVV-65C-R3-V1	45.72	93	0
9JK1816A	9JK1816A_31	29.8424	-82.403	FFVV-65C-R3-V1	45.72	155	0
9JK1816A	9JK1816A_41	29.8424	-82.403	FFVV-65C-R3-V1	45.72	235	0
9JK1899A	9JK1899A_11	29.89999	-82.1607	FFVV-65C-R3-V1	76	340	0
9JK1899A	9JK1899A_21	29.89999	-82.1607	FFVV-65C-R3-V1	76	160	0
9JK1899A	9JK1899A_31	29.89999	-82.1607	FFVV-65C-R3-V1	76	260	0
9JK1975A	9JK1975A_11	29.885693	-82.323133	FFVV-65C-R3-V1	73	0	0
9JK1975A	9JK1975A_21	29.885693	-82.323133	FFVV-65C-R3-V1	73	105	0
9JK1975A	9JK1975A_31	29.885693	-82.323133	FFVV-65C-R3-V1	73	240	0
9JK2038S	9JK2038S_11	29.79094	-82.16928	FFVV-65C-R3-V1	36.59	0	0
9JK2038S	9JK2038S_21	29.79094	-82.16928	FFVV-65C-R3-V1	36.59	120	0
9JK2038S	9JK2038S_31	29.79094	-82.16928	FFVV-65C-R3-V1	36.59	240	0
9JK2816B	9JK2816B_11	29.826031	-82.268892	FFVV-65C-R3-V1	76.2	40	0
9JK2816B	9JK2816B_21	29.826031	-82.268892	FFVV-65C-R3-V1	76.2	130	0
9JK2816B	9JK2816B_31	29.826031	-82.268892	FFVV-65C-R3-V1	76.2	200	0
9JK2816B	9JK2816B_41	29.826031	-82.268892	FFVV-65C-R3-V1	76.2	290	0



Technology Layer	Tx composite pwr (dBm)	minus system loss (dBm)	plus antenna gain (dBi)	Total EiRP (dBm)	Total EiRP (W)
L2100	52.04119983	0.5	18.5	70.04119983	10095.31751
L1900	52.04119983	0.5	18.6	70.14119983	10330.46766
L600	50.79181246	0.5	16	66.29181246	4257.760671
L700	52.04119983	0.5	16.3	67.84119983	6083.030341
N600	50.79181246	0.5	16	66.29181246	4257.760671
N2500	55.05149978	0.5	18.5	73.05149978	20190.63502
N1900	49.03089987	0.5	18.6	67.13089987	5165.233832

# N600 – Current Coverage

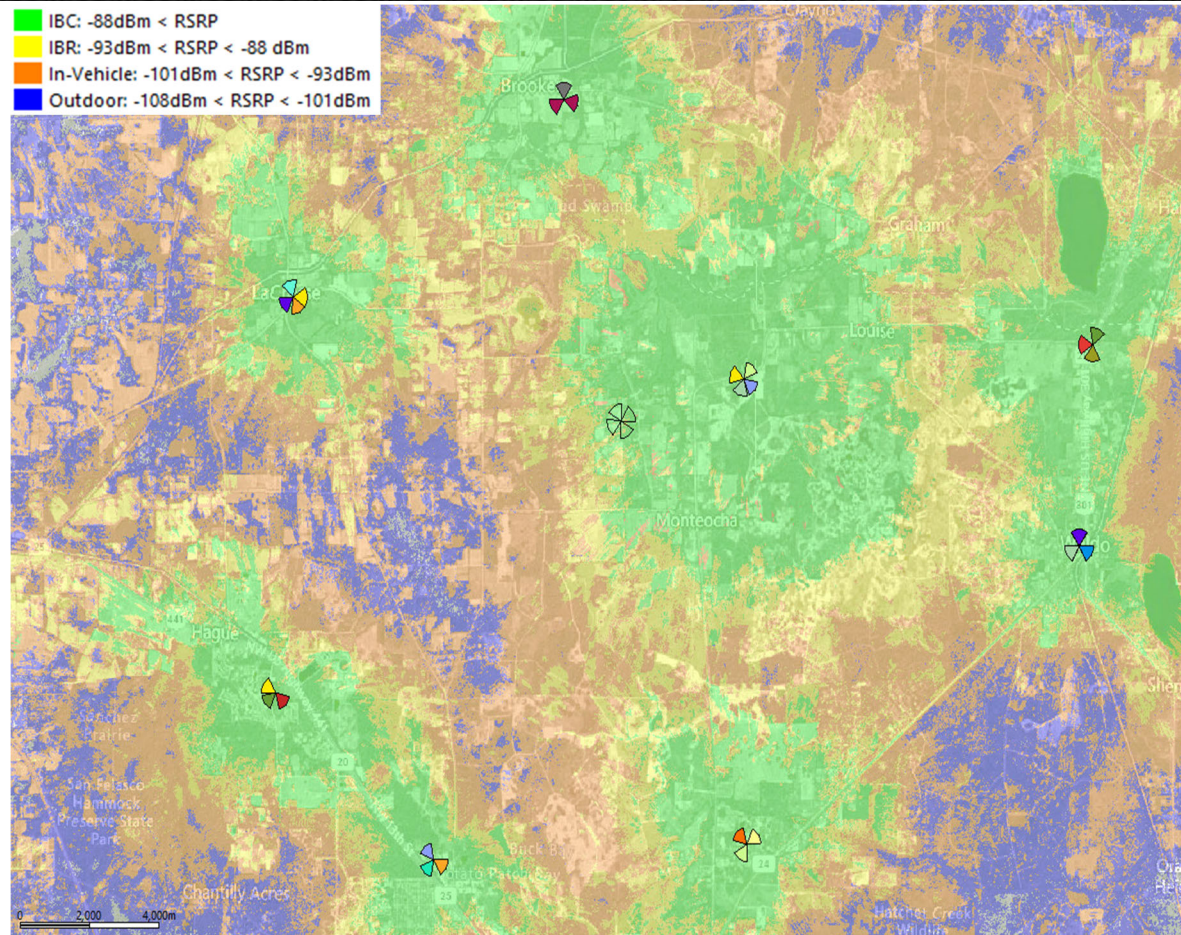




# N600 – NexTower @ 250' Coverage Area

Prediction	Legend	Zone Surface (km <sup>2</sup> )	Surface (km <sup>2</sup> )	% of Covered Area
NexTower	IBC: -88dBm < RSRP	262,432.406	2,157.4424	100
	IBR: -93dBm < RSRP < -88 dBm		210.7644	9.8
	In-Vehicle: -101dBm < RSRP < -93dBm		191.7096	8.9
	Outdoor: -108dBm < RSRP < -101dBm		528.2868	24.5
			1,226.6815	56.9

- IBC: -88dBm < RSRP
- IBR: -93dBm < RSRP < -88 dBm
- In-Vehicle: -101dBm < RSRP < -93dBm
- Outdoor: -108dBm < RSRP < -101dBm

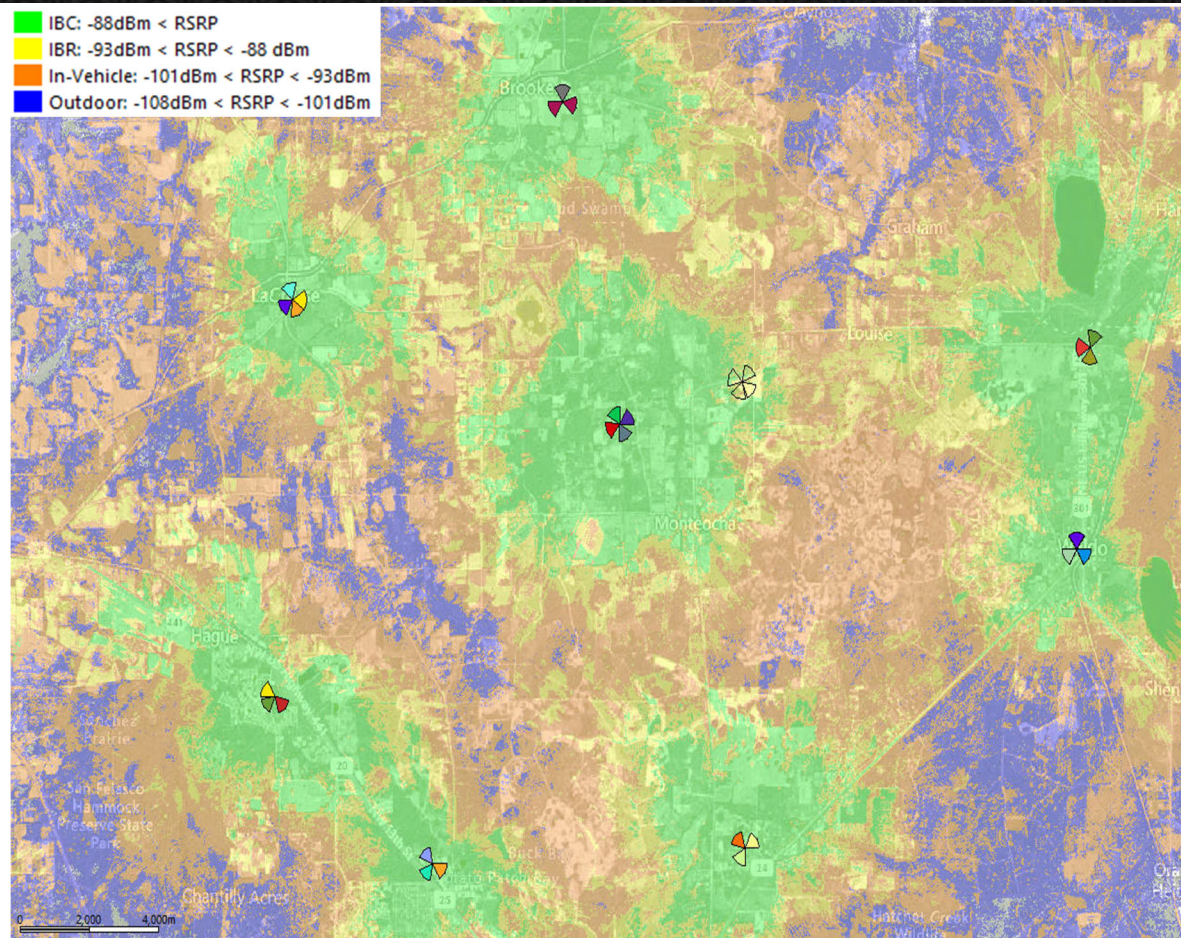




# N600 – CCI Tower @ 150' Coverage Area

Prediction	Legend	Zone Surface (km <sup>2</sup> )	Surface (km <sup>2</sup> )	% of Covered Area
CCI	IBC: -88dBm < RSRP	262,432.406	2,144.2539	100
	IBR: -93dBm < RSRP < -88 dBm		178.526	8.3
	In-Vehicle: -101dBm < RSRP < -93dBm		180.1472	8.4
	Outdoor: -108dBm < RSRP < -101dBm		554.338	25.9
	Outdoor: -108dBm < RSRP < -101dBm		1,231.2427	57.4

- IBC: -88dBm < RSRP
- IBR: -93dBm < RSRP < -88 dBm
- In-Vehicle: -101dBm < RSRP < -93dBm
- Outdoor: -108dBm < RSRP < -101dBm





# N600 – CCI Tower @ 150' POP Analysis

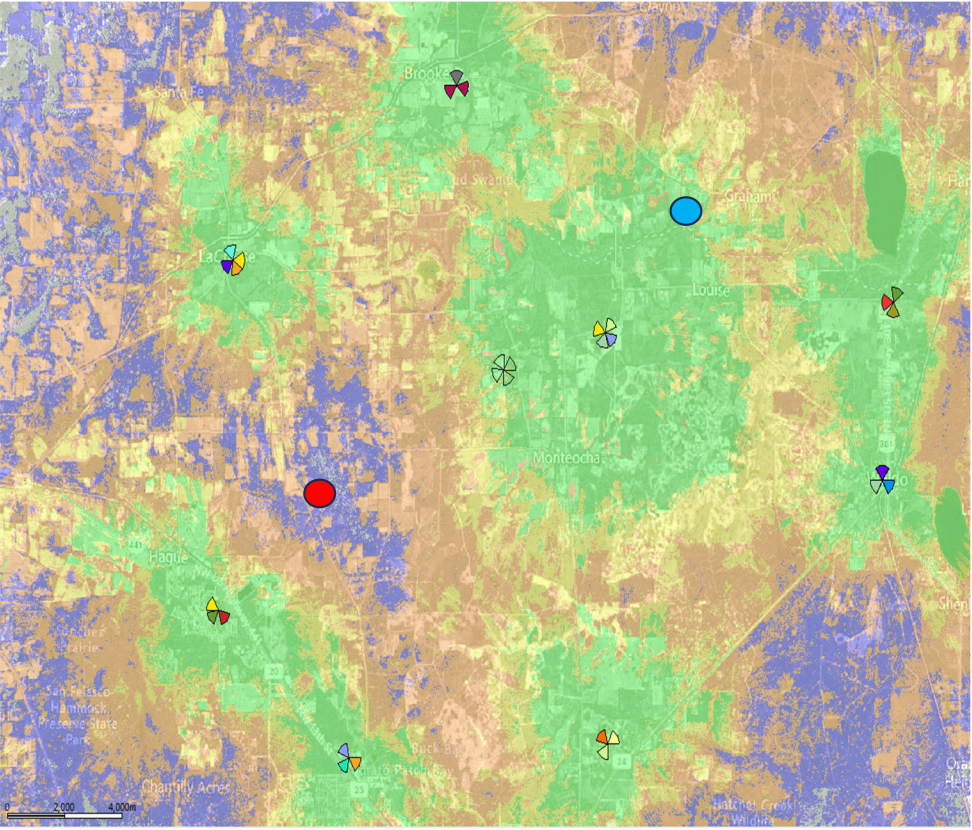
Row Labels	Sum of POPs	Row Labels	Sum of POPs
IBC: -88dBm < RSRP	12265	IBC: -88dBm < RSRP	12072
IBR: -93dBm < RSRP < -88 dBm	10952	IBR: -93dBm < RSRP < -88 dBm	11360
In-Vehicle: -101dBm < RSRP < -93dBm	31843	In-Vehicle: -101dBm < RSRP < -93dBm	31624
Outdoor: -108dBm < RSRP < -101dBm	76825	Outdoor: -108dBm < RSRP < -101dBm	77086
<b>Grand Total</b>	<b>131885</b>	<b>Grand Total</b>	<b>132142</b>

NexTower site would provide coverage to an additional 257 POPs over the CCI site.

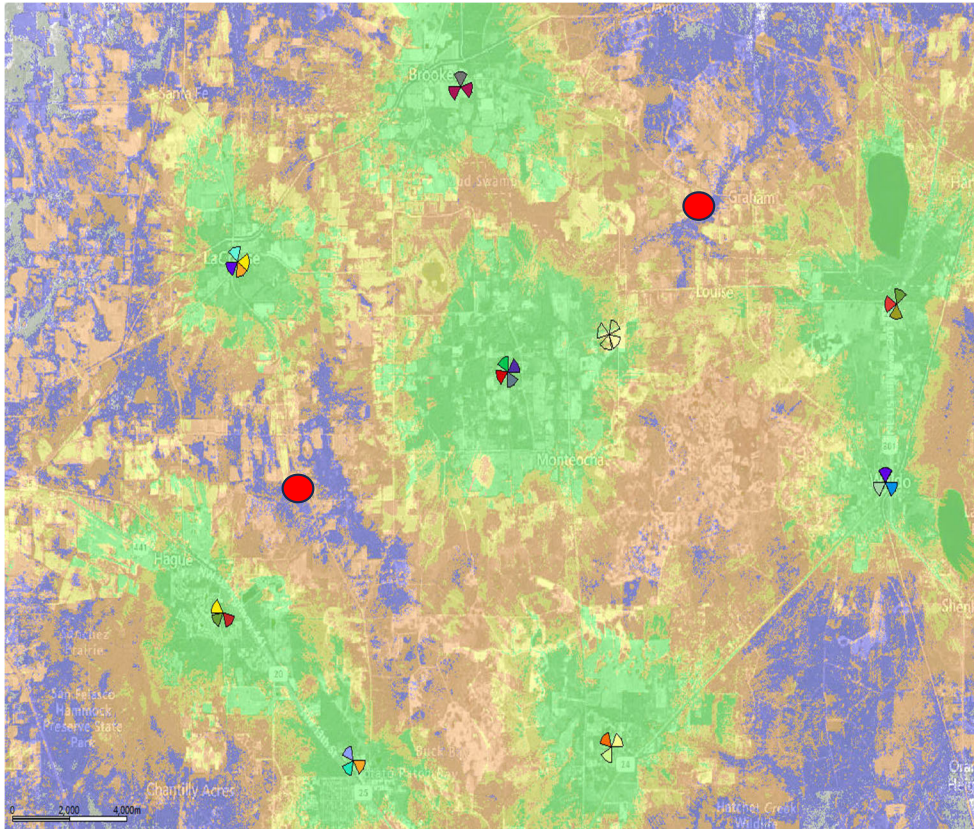
- Additional 215 POPs would achieve IBR coverage.



# N600 - Design Review



NexTower



CCI

Utilizing the NexTower site would eliminate the need for 1 additional site in the area.



## Conclusion

Utilizing the NexTower site would eliminate the need for 1 additional site in the area.

In-Vehicle handovers would be achieved to the northeast.

Coverage needs remain in the southwest.

NexTower site would provide coverage to an additional 257 POPs over the CCI site.

- Additional 215 POPs would achieve IBR coverage.

NexTower site would provide coverage to an additional 13.2 km<sup>2</sup>.

- Additional 43.8 km<sup>2</sup> would achieve IBR coverage.