

IDK Communications

Memorandum

To: Bow Planning Board

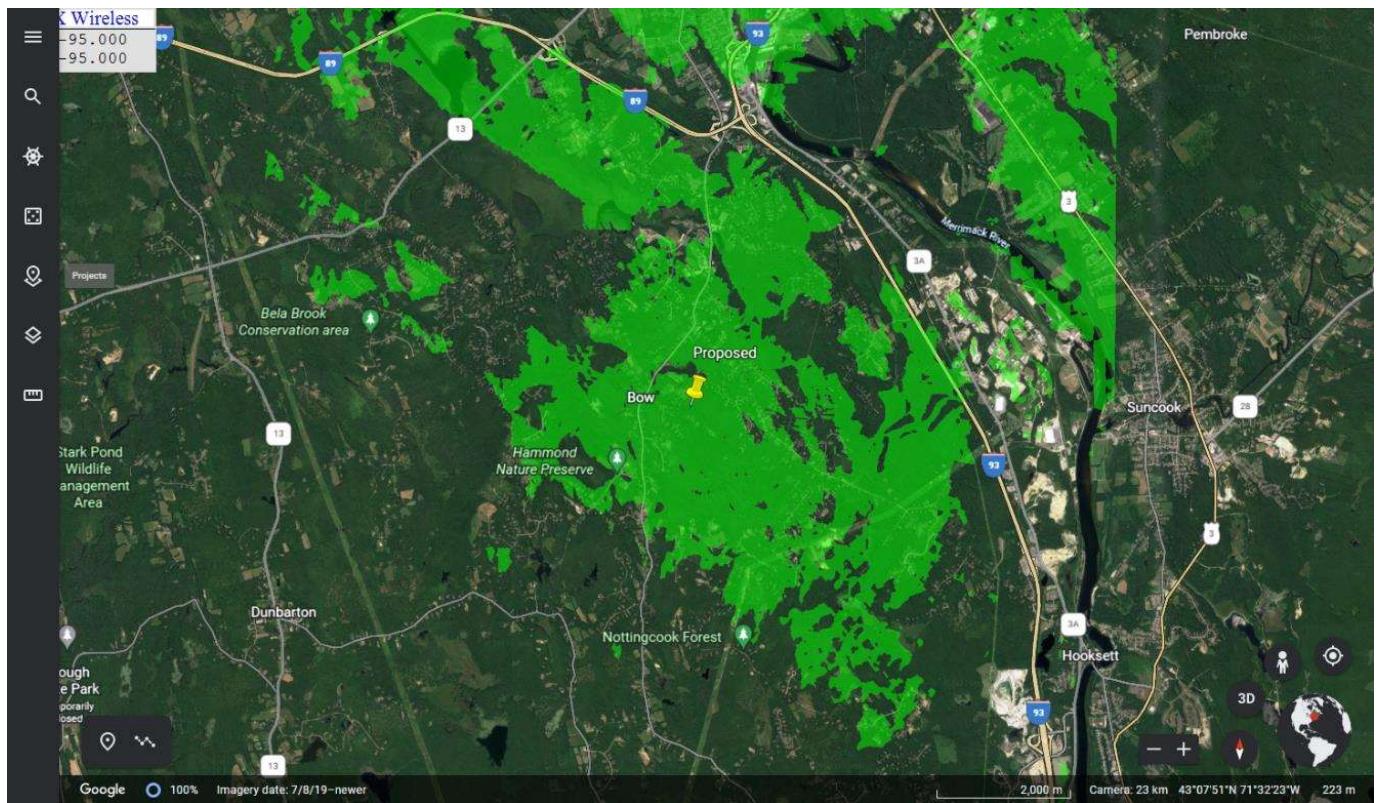
From: Ivan Pagacik

IDK has been tasked with a review of the cellular coverage afforded by the proposed tower at Branch Londonderry Turnpike East by Rising Tide Towers, LLC. The analysis of coverage was performed at several heights to ascertain the differences between the heights.

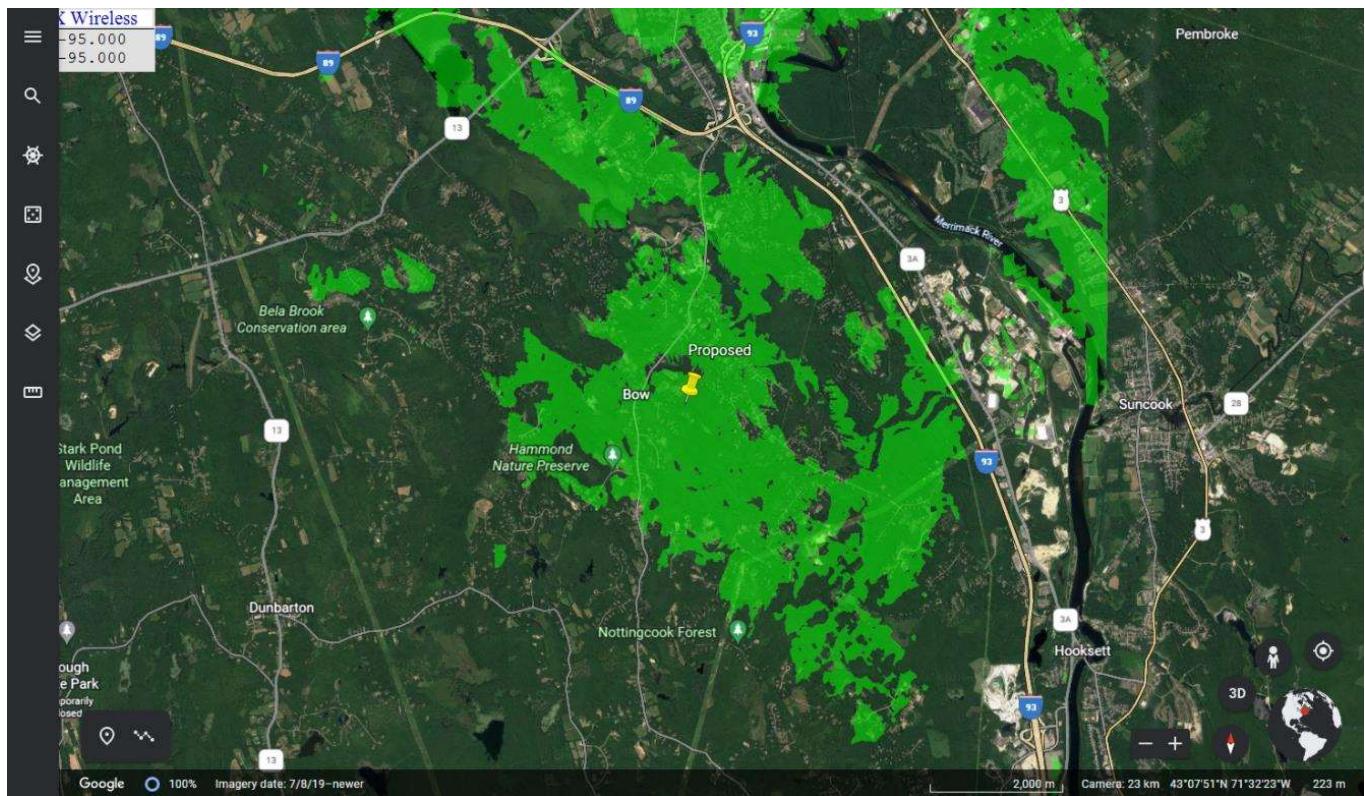
The proposed structure is for a 190-foot tower. While we can model coverage for a carrier to be installed at the top of the tower it is important to realize that there are multiple carriers in the NH market and thus one must look at a worst case scenario where multiple carriers are all installed on the structure. IDK planned its analysis with a hypothetical four carriers being installed on the tower, with the fourth carrier having the top of its antennas at the 160-foot level, carriers needing ten foot of antenna separation on a tower. From there we analyzed tower heights of 150 and 120 feet. Both the lower cellular band (700/800 MHz) and the higher PCS band (1900/2100 MHz) were used in the analysis since carriers utilize both these bands when building out networks. The higher PCS band will not offer as much coverage as the lower band due to more loss of the signal as it travels from an antenna. IDK used typical parameters in its analysis since specific carrier information proposed for the site is not available at this time.

The maps on the following pages show the various coverage scenarios with the reliable coverage depicted in green.

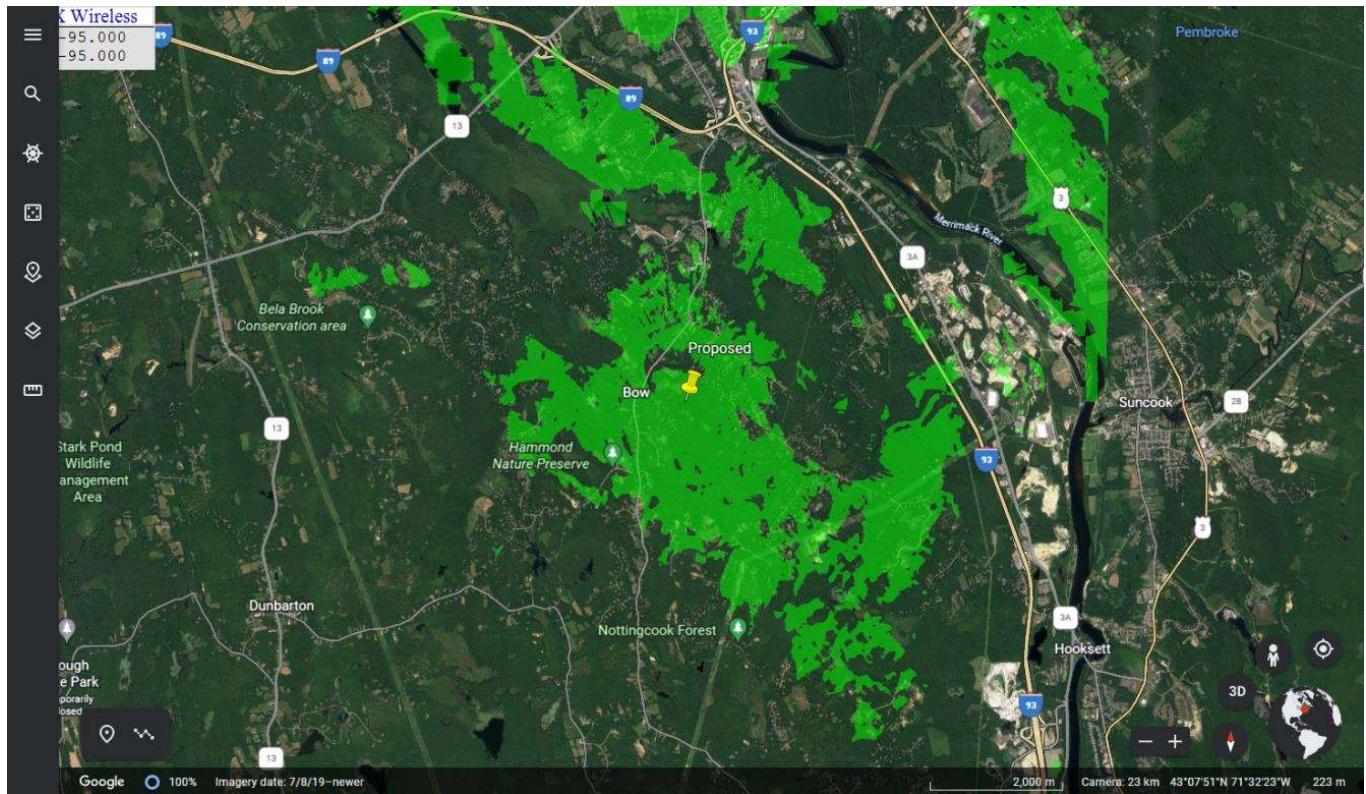
Coverage @ 700/800 MHz with top of antennas at 160 feet (190 foot tower w/
4 carriers)



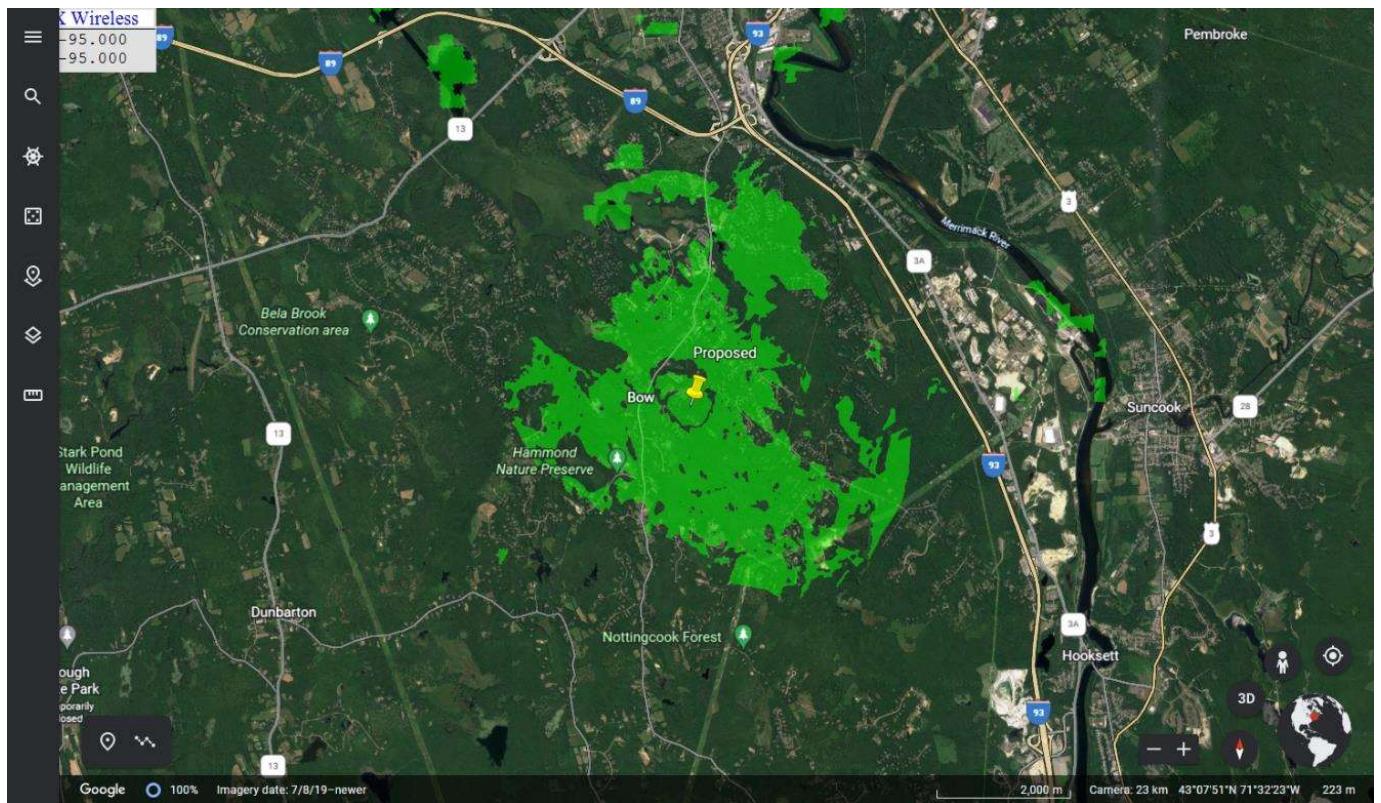
Coverage @ 700/800 MHz with top of antennas at 120 feet (150 foot tower w/ 4 carriers)



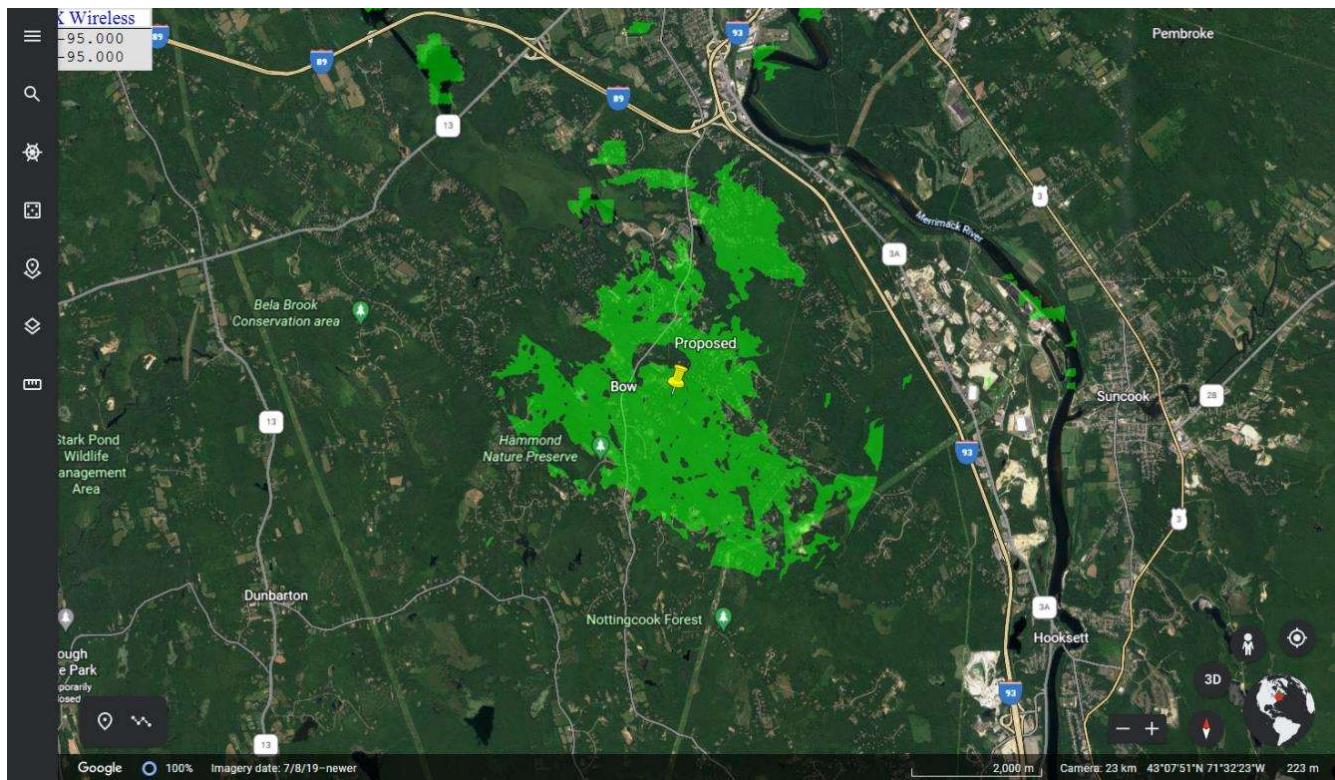
Coverage @ 700/800 MHz with top of antennas at 90 feet (120 foot tower w/ 4 carriers)



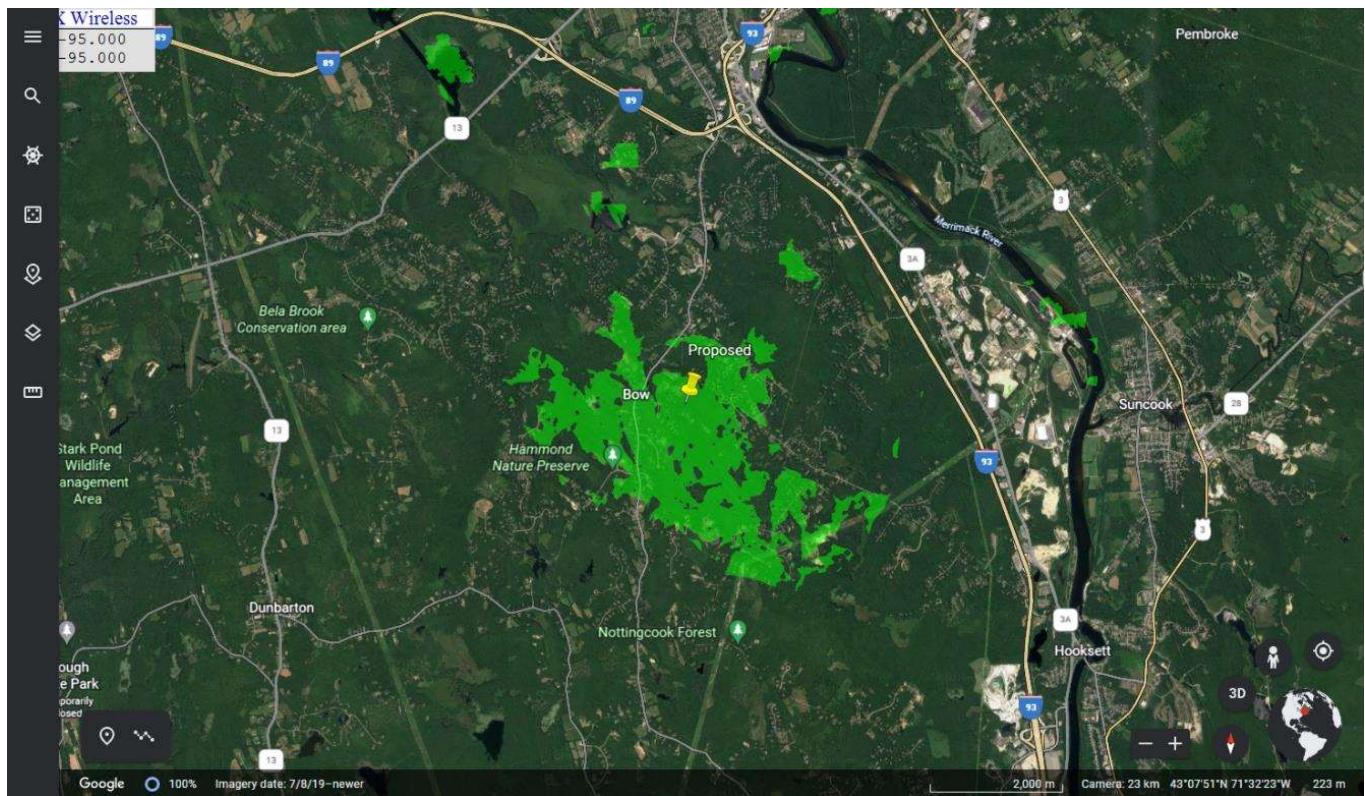
Coverage @ 1900/2100 MHz with top of antennas at 160 feet (190 foot tower w/ 4 carriers)



Coverage @ 1900/2100 MHz with top of antennas at 120 feet (150 foot tower w/ 4 carriers)



Coverage @ 1900/2100 MHz with top of antennas at 90 feet (120 foot tower w/ 4 carriers)



Summary

What we see from the analysis is that when the tower is reduced to 150 feet degradation starts to appear to the north around White Rock Hill Road, Turee Pond Road and Timmins Road as well as to the east at and near the Robinson Road area. Reducing the tower further to 120 feet shows even more degradation in those areas with additional streets being affected. This holds true for both the cellular and PCS bands.