

Introduction

- John Keating, P.E
 - Author of the 2014 report: “Wireless Market Study for the Town of New Canaan, CT” published by Centerline Solutions, LLC.
 - B.S.E.E., University of Colorado
 - Licensed Professional Engineer (P.E.) in 7 states (CA, CO, ID, NE, SD, UT, WY)
 - Co-owner of TeleMtn Engineering LLC, and owner of Plane-Wave Communications LLC
 - Over 28 years of experience in the wireless industry with specific expertise in:
 - Wireless site design (Architecture and Engineering)
 - Radio Frequency (RF) Engineering and wireless propagation analysis
 - Evaluating compliance with FCC mandated RF safety guidelines
 - Recently contacted by Mr. Moynihan to review the need for a tower proposed to be built by Homeland Tower, and their initial tenant, Verizon Wireless.

Relevancy of 2014 report

- Purpose of 2014 report.
 - Assess the wireless coverage in New Canaan and based on the result, make recommendations of site locations that would address significant gaps in coverage.
- What has changed in the past 14 years?
 - CDMA, EDGE, EVDO and UMTS (2G/3G technologies) are now largely obsolete.
 - T-Mobile and Sprint are now one company and Dish is an emerging wireless player.
 - Demand for highspeed data
 - The iPhone was released in 2007.
 - The evolution of smartphones has precipitated the need for higher data speeds as the standard for wireless coverage has changed from being voice centric, to data centric.
 - The smartphone has become an indispensable tool for the overwhelming majority of the public and data rates that were reasonable in 2014 are now insufficient. (1Mbps vs 10's of Mbps)
 - Households are more reliant on wireless coverage than ever before.
 - In 2014 the % of households that were “wireless only” was ~45%, in 2021 the numbers are 69% (all households) and 79% (households with children). NHIS reports from 2014 and 2021

Relevancy of 2014 report

- What hasn't changed in the past 8 years?
 - The physical characteristics of the area and the physics of radio propagation
 - Impediments to wireless coverage are mostly physical: terrain variation, trees, buildings, etc.
 - New Canaan remains a very challenging physical environment for wireless coverage.
 - Though the technologies are largely different, the frequency bands in use 2014, are still in use today.
 - The propagation characteristics for a given frequency band would remain relatively unchanged
 - The wireless infrastructure in New Canaan.
 - As a result of the findings in the 2014 report, The Town of New Canaan solicited RFP's for improving wireless coverage in the Town.
 - The coverage maps provided by Verizon are remarkably similar to those found in the 2014 report. This is especially true when one considers the difference in the level of service depicted, with 2021 data speeds requiring a more robust wireless network. The 2014 report analyzed coverage with data speeds up to 1Mbps
 - Homeland Towers proposed 5 tower sites to fill significant gaps in wireless coverage that were identified in the report. To date, one has been built (NE) and one is pending (NW). While both do/will improve wireless coverage in their respective areas, I would not expect either to reduce the need for the proposed tower.
 - The role wireless technologies play in the public safety arena.
 - The majority of E-911 calls made in 2014 were from wireless devices, and that remains true today, with an estimated 80% of call originating from wireless devices.

Summary

- Many aspects of the 2014 report continue to provide a solid basis for wireless assessments made today.
- Wireless technologies have changed since 2008, and so has the standard for what constitutes acceptable coverage/service.
 - High speed data and the applications that rely on it, requires a more robust wireless network than was anticipated in 2014.
- Household reliance on wireless as the primary means of communication.
 - The adoption of wireless as the sole means of communications continues to grow, and now stands at 69% of all US households and 79% for households with children.
 - According to reports from the CDC's, National Health Interview Survey results, from 2014 to 2021 the wireless only adoption rate for the over 65 demographic outpaced the others by growing from 17%(2014) to 43%(2021).

Summary

- E-911 calls remain one of the most important uses of a wireless device. Reliable wireless coverage is crucial in locating the calling device.
- Given the greater demands placed on wireless networks, and the public's reliance on them, the need for a wireless facility in or around the proposed site is at least as great today as it was in 2014.

