



March 30, 2020

Chairperson Bruce Flower
And Members of the Town of Wappinger Planning Board
20 Middlebush Road
Wappingers Falls, NY 12590

RE: Orange County-Poughkeepsie Limited Partnership d/b/a Verizon Wireless “Castle Point Application”

Dear Chairman Flower:

This Verizon RF response letter is provided to address any outstanding RF-related topics from the Douglas Fishman, RF Consultant letter dated March 6, 2020.

Section B requests more detailed specifics regarding calculations made by Site Safe (Verizon 3rd party) which certified the MPE (Maximum Permissible Exposure) levels at the proposed site will be below 1% utilizing calculations instructed by the FCC in OET Bulletin 65(b). On new towers where only one carrier is present the letter provided is typically acceptable as the FCC requirement states if the proposed installation contributes less than 5% MPE then that application is categorically excluded from further review. This rule is intended to prevent zoning delays as well as increased costs associated with detailed RF EME (Electro Magnetic Energy) reviews on sites that are (clearly) not an RF EME concern. Verizon will provide a more detailed report however in no way should this cause a delay for this application. Additional reports typically take a few weeks to acquire and we expect to have them by the end of April, 2020.

Section C (capacity) shows general agreement with the Verizon RFJ dated Sept. 17, 2019 however there appears some doubt regarding one of the four sites (Mt. Beacon) that is used in this justification. While the capacity charts clearly show all four sites requiring capacity relief the hesitation regarding the impact to Mt. Beacon stems from limited signal dominance throughout the “offload” area. The 700MHz coverage maps provided in the RFJ (p17, 18) do show notable overlap (offloading) of the proposed site (at 146’ ACL) with the existing coverage of Mt. Beacon. Please keep in mind these maps are generated by a prediction tool and interpreted by experienced engineers familiar with this area to make the determinations throughout the RFJ. I can attest the actual impact to Mt. Beacon will be significant and the proposed site along with the other three (sectors) mentioned in the RFJ will experience the intended offload. It should be noted that Mt. Beacon is planned to be decommissioned as it causes interference throughout this area including but not limited to Beacon, Newburgh, Fishkill and Wappinger. Mt. Beacon made for a good CDMA (2G/3G) and Analog (1G) Cellular site but is not a good LTE (4G) site due to the excessive elevation of the antennas resulting with limited capability to properly contain the site. Even with many years of containment efforts to minimize this damage to the area network the Mt. Beacon site remains overloaded and continues to overshoot its objective area. It is simply too tall of a site (~1,500’ above the coverage area) to remain on air with such high density areas and high network utilization throughout the proposed Castle Point project area and surrounding areas. Removing this site from the network will help improve RF conditions (reduce SNR) and allow the network to perform at optimal performance and capacity. The Castle Point site is a critical solution along with others that will allow for the future decommissioning of Mt. Beacon. Mt. Beacon additionally serves many small gaps throughout the proposed coverage area that are not observed in the RFJ maps as this is not captured in the propagation tool but is known to Verizon RF. The Mt. Beacon component as related to Castle Point is significant and we are confident that all four sectors mentioned in the RFJ will benefit from the proposed site at 146’.

The below chart shows a terrain cross section starting on the left from the Mt. Beacon site and travels a distance of 3-4 miles into the center of the Castle Point project area. This chart helps reveal the extreme elevation of Mt. Beacon relative to the Castle Point project area. Verizon’s goal is network densification in the areas where the traffic is generated from while mitigating the need for the Mt. Beacon site. Castle Point as designed is critical to this effort.



Section C (coverage) again shows general agreement with Verizon’s stated needs and proposed solution however some confusion appears due to a Verizon typo on slide 22 of the RFJ incorrectly stating 116’ vs actual 146’ ACL (Antenna Center Line). All propagations provided in this RFJ displayed the proposed solution at 146’. Unfortunately the typo on slide 22 slipped through our reviews however it was just a typo and the actual coverage generated on slide 22 was in fact at 146’ ACL. Slide 24 which displays the same coverage in a different format correctly details the proposed coverage at 146’ ACL.

A question related to the ACL topic is what is the minimum height Verizon requires to remedy the existing and substantial gaps in coverage and capacity? Verizon has carefully evaluated the ACL required for this site and maintains with confidence that 146’ is the minimum ACL necessary to resolve the gaps in coverage and capacity as detailed throughout the RFJ. In order to resolve the area problems it is critical to have 2100/1900MHz (AWS/PCS) coverage. These frequency bands are the higher capacity but due to higher frequency, more coverage challenged layers necessary for this site. Because of these limitations, the height justification is tied specifically to the coverage and performance of the representative 2100MHz (AWS) layer. To explain this further we will visually examine some existing signal propagation challenges inherent to this area as well as how a lowered ACL would impact predicted coverage throughout the project area.

Please review the following supplemental images and consider a critical lesson from our current COVID-19 situation is that providing adequate and reliable coverage and capacity to residential areas is more important than ever before. Area neighborhood roads as well as Rt. 9D remain critically important objectives however our current health crisis has drawn elevated needs and attention to residential areas. The areas in question and detailed in the following slides suffer significantly from lowered ACL and therefore 146’ ACL is the minimum height required for the proposed Castle Point project.

Very truly yours,

Michael R. Crosby

Michael R. Crosby
Engineer IV – RF Design
Verizon Wireless





