

May 14, 2018

Town of Chester
Dept: Planning Board
1786 Kings Highway
Chester, NY 10918

Attn: Don Serotta -- Chairman

I reviewed the material provided regarding the proposed wireless site by Verizon Wireless for the Silvertail search ring.

The following topics were the focus of my review.

- FCC License
- FAA glide slope analysis
- EMG
- Non-Interference
- Needs Analysis
- Site Design

I have also not communicated with Verizon or any of the authors of the documents regarding this sites application.

FCC License:

The applicant provided the current license bands it can operate wireless service in Orange County NY. The FCC licenses provided for the cellular, PCS, AWS and upper 700 bands Verizon utilizes. The FCC licenses are current and correct.

FAA:

There was no reference to an FAA glide slope study done for the site. The proximity of the airport to the site would seem to warrant this simple report. I would recommend asking for the FAA glide slope analysis from Verizon.

EMF:

I reviewed EMF compliance report that was provided in tab 7. The method and calculation made by Millennium Engineering on behalf of Verizon is accurate. The Verizon site as designed will be in compliance of FCC EMF emissions.

Non-Interference

I reviewed the report provided by Millennium engineering on behalf of Verizon regarding potential interference to other services. As the report indicated the radio equipment that Verizon will utilize is well designed and should not cause any interference with other radio services in other frequency bands.

Needs Analysis:

The Needs Analysis for the site was provided in the Power Point presentation given on

From the Power Point slides

- The Project is a necessary and critical upgrade of the Verizon Wireless communications network in the Town of Chester. Upon completion, new, advanced emergency and non-emergency 4G Verizon Wireless communication services will be provided to the Town of Chester in a manner consistent with all applicable technological and land use requirements.
- Specifically, the project will offer significant improvements in both capacity and in-building coverage to the residential area south of the water tank, traffic along Kings Highway north and south, as well as portions of the residential Sugarloaf area.
- Facility Satisfies Coverage Objectives - The Applicant has provided expert proof, in the form of a report and propagation studies prepared by its Radio Frequency (RF) Design Engineer, depicting the service that will be provided to the Town of Chester. This information clearly demonstrates that the location of this communications facility on the existing water tank of Kings Highway will provide advanced emergency and non-emergency 4G communications coverage to this area.

A propagation plot was also provided indicating the Verizon wireless coverage in the 700MHz band with the inclusion of the new site.

In the lease exhibit Verizon stated that it did not have adequate and reliable wireless telecommunication service coverage for the search ring and this was used to support Rosenberg

I then went to the two Site Selection reports dated **November 9, 2017 and December 8, 2017.**

In the November 9, 2017 Site Selection report described how a search ring is defined based on engineering needs that is identified by the Verizon Wireless Radio Frequency Engineer. The search ring justification and criteria are meant to either solve a coverage problem or solve a capacity problem within the search ring. Potential sites outside of the search ring area were described as for the most part will fail to provide adequate service for what is desired. The description went on to say that due to technical constraints there is a limited flexibility as to where a new facility can be located and still function properly.

The proposed sites purpose was claimed that it would solve Verizon's capacity relief objective as well as new or improved coverage throughout the Chester area.

In attachment 1 and 4 the search ring, Silvertail, was provided and the proposed water tank is not within the search ring defined.

Two propagation plots were provided. Attachment 2 is described as depicting the existing 700Mhz coverage for Verizon and Attachment 3 showed the coverage improvement with the proposed site. However, when comparing the coverage plots of both Attachment 2 and Attachment 3 there was no change in the served area with the new site and appear to be the same.

The search ring and propagation plots were different scales making a comparison between the search ring and the coverage plots not possible.

Attachment 5 was a circle that indicated the area where parcels were identified and investigated. However, there was no additional information that indicated which locations were investigated and the

disposition of the investigations. Additionally, Attachment 5s area is different than the search ring in Attachment 1 and 4.

There was a second Search Ring Justification report dated December 8, 2017. The second report was very different in content than that of the November 9, 2017 report. The report went on to describe at a high level the design process and performance for Verizon wireless sites.

The primary reason for the sites need in this report is capacity relief. The other reason is for improved in-building coverage.

The new site is meant to provide capacity relieve for the Bellvale site located in Warwick.

Attachment 1 shows the location of the existing Verizon wireless sites along with the proposed site.

Attachment 2 is a traffic pattern plot for the Bellvale site. However, it is unclear what the reference is for the data depicted, i.e. what is the Y scale. Additionally, I could not determine if this is busy hour, bouncing busy hour, daily peak data, weekly peaks. Also, the smoothing line depicted in yellow appears to have a different slope than that of the trend line shown which indicates capacity exhaustion. I am also unclear if the FDV is for a carrier or composite view of all the carriers at the Bellvale Gamm sector or if they are using their entire spectrum inventory.

Attachment 3 is the search ring and it looks to be the same as shown in the other justification report except the proposed site is not identified.

I then reviewed with Silvertail Reponse to Comments with exhibits document. In that document the alternatives considered were identified. The two alternative sites identified were the Creamery Pond Rd site and Warwick Prison, both were deemed inadequate for Verizon's needs and both were further south and well outside of the search ring.

The rejection of those two proposed sites based purely on the search ring requirements is valid. However, In the discussion for rejection Verizon said that placing a site too close to another would cause harmful interference. Verizon is currently deploying small cells which are placed close to each other using the same wireless technology and this is contradictory. Additionally, the need for line of site while ideal however wireless mobile communications relies on multipath.

Site Design

I was asked to look at the site design for the water tank. The drawings provided match the height discussed in previous reports provided. The antenna array is a three-sector configuration located on top of the water tank.

After reading through the public comments consideration should made to possibly placing a shroud around the top of the water tank that is RF transparent so that it could hide the antennas from being seen.

Document List:

The following were the documents I reviewed in the crafting of this report.

- VERIZON STATEMENT OF INTENT
- Verizon Lease Agreement
- Verizon Search Ring Justification Report 12-8-17
- Silvertail_ResponseToPHCommentsWithExhibits_20180504
- Town of Chester power point for Verizon
- Verizon Public Hearing Transcript 4-4-18
- Verizon Site Plan 3-20-18
- VERIZON PICS (visual impact)
- VERIZON APPLICATION
- VERIZON 239 RESPONSE
- VERIZON FUSCO LETTER 3-8-18
- VERIZON FUSCO REVIEW LETTER 1-12-18
- VERIZON OLSON LETTER 2-23-18

From the above my recommendation is that Verizon:

- 1) Provide clarification that Attachment 2 and 3 from the November 9, 2017 report are not the same propagation plots.
- 2) Provide the existing sites surrounding the search ring propagation plot with the search ring included
- 3) Provide the existing and proposed site Propagation Plots with Search Ring included
- 4) Provide a FAA report for glide slope
- 5) Provide a propagation plot showing existing in-building coverage problems with the search ring included.
- 6) Provide a propagation plot showing with the proposed site in-building coverage improvements with the search ring included.
- 7) Provide clarification on the FDV plot in Attachment 2 from the December 8, 2017 report.
- 8) Provide a list and brief technical justification for the rejection of all the sites identified and investigated that are in the search ring.
- 9) Provide a brief description of what capacity relief alternatives were considered or done for the Bellvale site
- 10) Provide clarification as to whether all the Verizon radio spectrum available in your licenses is operating in the gamma sector for Bellvale.
- 11) Provide clarification as to what advanced emergency services will be provided because of this proposed site.
- 12) Provide clarification as to the use of 5G for the proposed site and surrounding sites. Specifically, will this require any changes to the proposed site.
- 13) Consider placing a shroud around the antenna array.

Regards,

Clint Smith P.E.