T-Mobile Northeast LLC, a subsidiary of T-Mobile USA, Inc.

12050 Baltimore Ave.
Beltsville, MD 20705

December 4, 2017

Chairman Peter J. Murphy
Fairfax County Planning Commission
12000 Government Center Parkway, Suite 330
Fairfax, VA 22035

Re: Requests for Zoning Text Amendments

Chairman Murphy:

Consistent with its commitment to continuously improve the quality of service experienced by its customers in Fairfax County and throughout the Washington, D.C. area, T-Mobile is pursuing several strategies to increase network capacity and availability. In general, current network deployments projects are focused on maximizing existing and adding new network capacity to meet the exponentially increasing growth in data consumption associated with customer demand for video and multimedia services, while continuing to add coverage in areas where needed.

T-Mobile is adding network capacity and incremental network coverage via a range of initiatives, including the upcoming deployment of its recently acquired 600 MHz spectrum. T-Mobile is also deploying upgraded antennas and ancillary equipment that provide more robust network capacity in dense urban residential and commercial areas where demand for increased data consumption is typically the highest. Antennas designed for this type of deployment are different in both size and functionality from those that were historically deployed for coverage purposes. These deployments are instead intended to provide higher data throughput in smaller more densely populated and higher traffic areas. Consequently, individual cell coverage areas are and will continue to decrease in size.

These smaller, more local cell footprints, will allow T-Mobile to more efficiently reuse its spectrum in what has become a highly congested radio-frequency environment. These smaller cells propagate capacity over shorter distance than traditional cell sites. As a result, associated antennas and associated network equipment need to be deployed more densely throughout local communities. This dictates that T-Mobile pursue co-location opportunities on existing buildings and structures even more vigorously than it currently does. A challenge exists, however, because, in many cases, the existing non-residential structures do not reach 35 feet in height. In addition, these lower non-residential structures may not have sufficient structural capacity to support a 360-degree stealth enclosure. Furthermore, the associated equipment, while under 70 cubic feet, extends just over 5 feet in height. Because of this, T-Mobile makes the following requests.

Request 1 – Reduce minimum building height in §2-514.1.A(1,5) for antenna collocation on multiple family dwellings and nonresidential buildings and structures, which are Group3 or 4 special permit use or Category 1,2,3, or 4 special exception use, from 35 feet to 25 feet.

Request 2 – Modify screening requirement of §2-514-1.A(6) from total enclosure to screening from all viewsheds.

Request 3 – Adjust the equipment height limit for those buildings referenced in §2-514.1.I from 4 feet to 6 feet.

In order to provide 360-degree coverage at these more local sites, T-Mobile plans (where RF feasible) to house multiple antenna sectors in one cylindrical canister— resulting in a less impactful local site antenna design. These canisters are typically 2 feet in diameter. Therefore, T-Mobile makes the following request.

Request 4 – Increase cylinder antenna diameter limit in §2-514-1.F and §2-514-2.B(3) from 12 inches to 2 feet and add cylinder antenna to permitted antenna types in §2-514-2.A at a height limit of 6 feet and diameter limit of 2 feet.

A second method of capacity augmentation involves using a multibeam antenna to add capacity within the same physical footprint of a given antennas coverage. Multibeam antennas take the same 120-degree arc of coverage around a site and split it from 1 logical sector into 2 or more logical sectors hence increasing the number of users in the same geographical area that can use the physical sector at the same time – without the RF interference or aesthetic impact that would result from installing additional antenna sectors.

In order to make use of this multibeam technology, T-Mobile will need to install slightly wider antennas than currently permitted by the County. Thus, T-Mobile hereby makes the following request.

Request 5 – Increase panel antenna width limit in §2-514-1.D, §2-514-2.A, and §2-514-2.B(2) from 2.0 feet to 2.5 feet, and add a depth limit of 1.0 feet to each citation.

Please note that a panel antenna depth limit of 1.0 feet is included in request 5. The recently adopted Amendment No. 2013 P-09 to the County's 2013 Comprehensive Plan references a new antenna depth limit of 6 inches. T-Mobile currently has **no** antennas that meet this size limit and believe the 1.0 feet limit to be more reasonable as it is in line with existing antenna models deployed by wireless carriers. In order to more effectively control frequency propagation, internal components of specific antennas are designed focus the antenna beam. In other words, antenna dimensions are driven by the physics of the specific frequencies in use.

Thank you for your consideration of these matters and we look forward to participating in the Commissions upcoming work sessions. If you need any additional information pertaining to these requests, please feel free to contact me at William.OBrien@T-Mobile.com or thru our Counsel, Frank Stearns.

Best Regards,

William O'Brien

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