STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 24-____-PET

Limited Size and Scope Application	)
of Bell Atlantic Mobile Systems, LLC	)
d/b/a Verizon Wireless and Vertex Towers, LLC,	)
for a Certificate of Public Good,	)
pursuant to 30 V.S.A. § 248a, authorizing the construction	)
of a telecommunications facility in Manchester, Vermont	)

PREFILED DIRECT TESTIMONY OF DANIEL HAMM, P.E. ON BEHALF OF BELL ATLANTIC MOBILE SYSTEMS, LLC d/b/a VERIZON WIRELESS and VERTEX TOWERS, LLC

October 18, 2024

Summary:

Mr. Hamm's testimony will describe the Project and address the Project's conformance with limited size and scope requirements.

Q1. Please state your name, employer and current position.

A1. My Name is Daniel P. Hamm. I am a Professional Engineer and Vice President for TEP, OPCO, LLC in North Andover, Massachusetts, which has provided engineering and consulting services to Verizon Wireless since the year 2002.

Q2. Please briefly state your professional background.

A2. I am a licensed professional engineer in the State of Vermont with registration number 8395. I hold a Bachelor of Science degree in Civil Engineering and have over 26 years of experience as a design professional and construction engineer.

I have been involved with design, permitting, inspection and construction of over 10,000 wireless communications facilities and upgrades located throughout New England. I have supervised and directed the structural design, re-analysis and reinforcement of an estimated 2,500 antenna support structures.

Q3. Have you ever testified before the Public Service Board or Public Utility Commission?

A3. No. I have not testified before the Public Service Board or Public Utility Commission.

Q4. Please identify the location of the Project that is the subject to this § 248a filing.

A4. Vertex Towers, LLC ("Vertex") intends to construct a telecommunications facility on a ("Parcel") located at 410 Hunter Park Road in Manchester, Vermont for the initial use of Verizon and subsequent use by other communications providers. Verizon refers to the project as "Manchester 2." The property owner has given Verizon and Vertex permission to proceed with this Application. The coordinates for the Project are latitude 43°11'25.80" North and longitude 73°02'57.37" West. *See* Permit Plans (Exhibit DH-1) for a visual depiction of the Project's location.

Q5. Please describe, in detail, the design of the proposed Project.

A5. Vertex will create a 50' x 50' "Compound" enclosed by an 8' high chain link fence, with a locked gate, and topped with barbed wire. A 130' above ground level ("AGL") telecommunications tower disguised as an artificial pine tree ("Monopine") will be constructed within the Compound.

Verizon will center six (6) panel antennas ("Antennas"), six (6) Remote Radio Heads ("RRHs") and three (3) "clip-on" combined Antennas and RRHs known as "MMUs" at the 125' AGL level on the Monopine on a triangular mounting bracket with two (2) Antennas, two (2) RRHs, and one (1) MMU per side or "sector". Each Antenna will measure approximately 72" long and 11.9" wide. The topmost point of the antennas will extend to a height of 130' AGL. Each of the RRHs, measuring approximately 15.9" long and 15.5" wide, will be mounted directly behind each of the Antennas. The MMU, measuring approximately 35" long and 16" wide and will also be mounted with a centerline elevation of 125' AGL. One (1) OVP distribution box ("OVP"), measuring approximately 25.8" long by 15.9" wide will be mounted on the Monopine at the same centerline as the Antennas and the RRHs.[1] The trunk of the Monopine will be painted brown or Corten steel will be used, and the OVP and Antennas will be painted brown or shrouded with brown "socks." Full and accurate specifications of the proposed Antennas, RRHs and Distribution Box are detailed in Exhibit ML-1. The Tower has been designed to support the proposed equipment. Verizon will install a 12' by 20' equipment steel platform with ice canopy ("Platform") within the Compound, located to the northwest of the Monopine.

[1] From time to time, equipment manufacturers may alter their products or Verizon Wireless may purchase from different suppliers. Therefore, there is a possibility that the actual antennas, remote radio heads and/or distribution boxes may be slightly different from but of similar dimensions as those described in this notice.

The Platform will contain the electronics equipment necessary for the operation of the Project. Verizon will also place an emergency generator ("Generator") on the Platform. The Generator will function if there is a power outage. Verizon will remotely test the Generator once a week at a time to be determined. If diesel is used to power the Generator, its tank will be placed underneath the Generator. If propane is used to power the Generator, Verizon will install a 500-gallon propane tank on an 11' by 4' concrete pad in the Compound.

Co-axial and fiber optic cables from the Antennas will descend inside the hollow Monopine. The cables will exit near the base of the Monopine and will connect with the Platform via conduits. Electric and telephone services will be brought to the Platform from an equipment backboard adjacent the Monopine.

To provide access to the Compound, Verizon proposes to follow an existing paved drive connecting to Hunter Park Road and construct a new 12' wide gravel access drive ("Access") to reach the Compound. Approximate clearing limits are shown on Sheet C-4 of Exhibit DH-1.[2] The contractor will limit clearing to the minimum required to construct the Access and Compound, which is estimated to be approximately 4,984 square feet. At the close of construction, Verizon will reseed and mulch all disturbed areas along the Access and around the Compound. An erosion control blanket and silt sock will be placed along the Access and at the Compound as indicated on the enclosed plans to control erosion both during and after construction. Underground utilities will follow the Access from the closest existing utility pole to the Compound, using a 20' wide easement.

Proposed new permanent impervious surface will total approximately 4,691 square feet.

[2] Clearing limits may need to be adjusted based on conditions encountered during construction.

Construction shall meet the requirements of the State of Vermont Low Risk Site Handbook for Erosion Prevention and Sediment Control.

Q6. Based on your evaluation, and in response to the requirements of 10 V.S.A. § 6086(a)(1)(D)(floodways) and (a)(8)(aesthetics, scenic beauty, historic sites, rare and irreplaceable natural areas, endangered species, necessary wildlife habitat), will the proposed Project impact floodways, result in an adverse effect on scenic or natural beauty, aesthetics or historic sites, necessary wildlife habitat or endangered species; and will it be in conformance with local and regional plans?

A6. The proposed Project will not have an adverse impact affecting the applicable criteria under 10 V.S.A. § 6086(a) and will conform to the land conservation measures in the applicable local and regional plans. Below are my detailed responses.

Criterion 1(B) – Waste Disposal – To fuel the Generator, Verizon will install either a 100-gallon diesel fuel tank or a 500-gallon propane tank within the Compound. The proposed Generator and proposed diesel or propane tank are designed with secondary containment and engine systems/fueling containment, including a double wall outdoor rated fuel tank with a rupture basin alarm and overflow basins to collect any spills. See Exhibit DH-2 for containment specifications for the proposed Generator. Verizon has standard operating procedures and a site-specific refueling plan to limit any potential spill during refueling operations.

Criterion 1(D) – Floodways – The Project is not located within a floodway or mapped flood plain, see attached FEMA "Firmette" (Exhibit DH-3). Therefore, the Project will not have an undue adverse impact under this Criterion.

Criterion 8 – Scenic Beauty, Historic Sites and Natural Areas – The Projects impacts on

Scenic Beauty, Historic Sites and Natural Areas is discussed in the pre-filed testimony of Jeff Parsons, David Archambault, and Britta Tonn.

Conformance with Local and Regional Plans - According to 30 V.S.A. § 248a(c)(2), during the Commission's review, "substantial deference [will be] given to the land conservation measures" in the local and regional plans of the "affected municipality." We are, therefore, addressing the relevant provisions of the Manchester Town Plan (adopted on May 9, 2017) ("Town Plan"; excerpts attached as Exhibit DH-4) and the Bennington County Regional Plan amended as of March 23, 2017 (the "Regional Plan"; excerpts attached as Exhibit DH-5) to illustrate that the proposed Project will comply.

The Town Plan contains a Policy section devoted to "infrastructure," which states in pertinent part:

> Appropriate infrastructure must be in place to serve the needs of the community and employers. More than just water, sewer, and power, this includes fiber optics, access to high-speed, wide-bandwidth telecommunications facilities, and other types of technological capacity. Broadband access throughout Manchester is as essential as electricity in allowing citizens, employers, and home businesses to thrive and participate in community and commerce.
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> Id. at 4.

The Town Plan also contains a section entitled, "Power and Telecommunications Facilities." Id. at 37. That section states, in pertinent part:

> with regard to wireless telecommunications facilities, the Manchester Land Use & Development Ordinance requires conditional use review of all proposed development and siting of towers and related infrastructure. Visual impacts,

lighting, noise generation, natural resource impacts, and site screening are all required to be carefully considered by the Development Review Board prior to approval of any new facilities.

Id. at 38.

The Regional Plan contains the following general observation:

> Vermont has invested and worked aggressively to bring broadband services to all parts of the state. High speed telecommunications currently is available throughout most of the region, with complete coverage still being pursued in some rural areas. **Improvements in wireless/cell service for all carriers are still needed and all of the major providers currently are working to expand coverage.**

Id. at 55 (emphasis added).

The Regional Plan contains a more specific discussion in its section entitled, "Information and Telecommunications Services":

> Cellular telephone service providers have been steadily expanding their coverage area within the region with the installation of new towers and antennas at strategic locations. The widespread availability and use of tablet computers and handheld wireless phones, including "smart phones," that offer portable access to the internet has led to an even greater demand for these wireless facilities.
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> The infrastructure required for wireless communication services include towers, antennas, equipment buildings, access roads, and electrical service. Bennington County is a challenging area for the development of wireless communication infrastructure. The narrowness of the inhabited valleys and highly visible slopes

and ridges of the surrounding mountains require careful siting to ensure that adequate coverage is efficiently provided while not having undue adverse impacts on natural or scenic resources. Those concerns can be minimized by careful planning that includes siting antennas on existing buildings or structures, co-location of antennas on towers to limit the number of towers, and careful site design to avoid sensitive areas and avoid disruption of viewsheds identified as particularly important to local communities.

The Vermont Public Service Board has regulatory jurisdiction over the siting of telecommunication facilities, weighing the public good of a proposal together with its environmental and social impacts. Municipal and regional plans are given consideration by the Public Service Board, so it is important that those plans include clear policy guidelines regarding sensitive areas, tower height, co-location requirements, and other factors. In some cases it may be preferable to develop one tall (140 feet or more) tower that provides coverage over a relatively wide area in a location where identified local and regional impacts can be avoided. In other cases, two or more smaller and lower towers (90 feet in height and possibly using a "monopole" design) might be needed to provide the same coverage while avoiding impacts to natural and scenic resources or residential neighborhoods.

Id. at 165-66.

The Project will enhance the quality of the Verizon's infrastructure serving Manchester in a manner that will maintain and improve the reliability of the Verizon network and Internet connectivity and speed on that network. Verizon shares the goals of the Town Regional

Plans of using existing infrastructure rather than building new towers where feasible. However, in this case, there is no existing infrastructure that will allow Verizon to accomplish its objectives of enhancing coverage and capacity in this area. The location that Verizon has chosen is well developed and is not in an ecologically sensitive area. There will be little disruption of viewsheds.

Q8. Please identify all existing permits relating to the facility and any conditions contained in those permits that could impact the proposed improvements.

A8. I am not aware of any such permits.

Q9. Does this conclude your Prefiled Direct Testimony?

A9. Yes.

Exhibits to Prefilled Testimony of Daniel P. Hamm, P.E.

Exhibit DH-1	Manchester 2 Permit Drawings
Exhibit DH-2	Generator Specifications
Exhibit DH-3	FEMA Firmette
Exhibit DH-4	Town Plan Excerpts
Exhibit DH-5	Regional Plan Excerpts