

**STATE OF VERMONT
PUBLIC UTILITY COMMISSION**

Case No. 24- ____-PET

Limited Size and Scope Application)
of Vertex Towers, LLC and Bell Atlantic Mobile)
Systems, LLC d/b/a Verizon Wireless, 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 MARTIN J. LAVIN

**ON BEHALF OF VERTEX TOWERS, LLC AND BELL ATLANTIC MOBILE
SYSTEMS, LLC, D/B/A VERIZON WIRELESS**

October 30, 2024

Summary:

Mr. Lavin's testimony will address the proposed installation and how the Project will promote the general good of the State of Vermont.

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

2 A1. My name is Martin J. Lavin, and I am a Senior Radio Frequency ("RF") Engineer currently
3 working for C Squared Systems, LLC.

4 **Q2. Please state briefly your educational and professional background.**

5 A2. I have worked as an RF engineer for C Squared Systems, LLC since June of 2008. I have worked as
6 an RF Engineer since November of 1987. My responsibilities as an RF engineer at C Squared
7 Systems include the following:

- 8 • Zoning Hearing Expert Testimony
- 9 • Advanced Wireless Services RF System Design
- 10 • Wireless Broadband Access Systems Engineering
- 11 • RF Drive Test Services
- 12 • Intermodulation Studies
- 13 • RF Exposure and FCC Compliance Studies

14 I have a Bachelor of Science Degree from Rensselaer Polytechnic Institute and a Master of Business
15 Administration Degree from University of New Hampshire.

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

17 A3. Yes. Yes. I have submitted prefiled testimony and given oral testimony in Case No. 23- 4087-PET
18 (Granville).

19 I have testified before Planning and Zoning Boards in Maine, New Hampshire, Rhode Island,
20 Massachusetts, New York and New Jersey. I have also testified on more than 20 occasions before
21 the Connecticut Siting Council, which has jurisdiction over telecommunications facilities.

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

23 A4. Vertex Towers, LLC ("Vertex") intends to construct a telecommunications facility on a

1 (“Parcel”) located at 410 Hunter Park Road in Manchester, Vermont for the initial use of Bell
2 Atlantic Mobile Systems, LLC d/b/a Verizon Wireless (“Verizon”) and subsequent use by other
3 communications providers. Verizon refers to the project as "Manchester 2." The property owner
4 has given Verizon and Vertex permission to proceed with this Application. The coordinates for the
5 Project are latitude 43°11'25.80" North and longitude 73°02'57.37" West. *See* Permit Plans
6 (Exhibit DH-1) for a visual depiction of the Project’s Location.

7 **Q5. From a Radio Frequency Engineer's perspective, please describe what site improvements will**
8 **be necessary for the proposed Project.**

9 A5. Vertex will create a 50' x 50' compound (“Compound”) enclosed by an 8' high chain link fence,
10 with a locked gate, and topped with barbed wire. A 130’ above ground level (“AGL”) telecommunication
11 tower designed to resemble a tree ("Monopine") will be constructed within the
12 Compound.

13 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
14 on the Monopine on a triangular mounting bracket with two (2) Antennas, two (2) RRHs, and one
15 (1) MMU per side or “sector”. Each Antenna will measure approximately 72” long and 11.9” wide.
16 The topmost point of the antennas will extend to a height of 130’ AGL. Each of the RRHs,
17 measuring approximately 15.9” long and 15.5” wide, will be mounted directly behind each of the
18 Antennas. The MMU, measuring approximately 35” long and 16” wide and will also be mounted
19 with a centerline elevation of 125’ AGL. One (1) OVP distribution box (“OVP”), measuring
20 approximately 25.8” long by 15.9” wide will be mounted on the Monopine at the same centerline
21 as the Antennas and the RRHs.¹ The trunk of the Monopine will be painted brown or Corten steel
22

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.

1 will be used, and the OVP and Antennas will be painted brown or shrouded with brown “socks.”
2 Full and accurate specifications of the proposed Antennas, RRHs and Distribution Box are detailed
3 in Exhibit ML-1. The Prefiled Testimony of Daniel Hamm, P.E. discusses the location of the other
4 equipment at the Site.

5 **Q6. Describe Verizon’s efforts to collocate the Project on an existing telecommunications facility.**

6 **A6.** As part of our analysis of this Project, we searched publicly available databases (see Exhibit ML-3)
7 for existing telecommunications facilities and existing structures for possible collocation
8 opportunities. No such facilities or structures that would allow Verizon to meet its coverage and
9 capacity needs for the Manchester 2 search ring were identified.

10 The propagation plots that I have created for this site illustrate these difficulties. See Exhibit ML-2.

11 In particular, intervening terrain causes a sharp drop off in coverage as illustrated in those plots.

12 The existing facilities both within the Town of Manchester and within a radius of ten (10) miles
13 from the proposed site cannot provide adequate coverage to the area being served by this project.

14 They are much too far away to provide coverage to the identified gap. The closest existing facility
15 suitable for a wireless installation (#3 in Exhibit ML-3) is approximately 1.3 miles from the
16 Proposed Facility and Verizon is already installed on that tower. See Existing Tower Analysis
17 (Exhibit ML-3).

18 **Q7. Please address the level of radiation associated with the proposed equipment.**

19 **A7.** Under federal law, Verizon is required to comply with the radiofrequency (“RF”) emission levels
20 established by the Federal Communications Commission (“FCC”). Calculations using the most
21 extreme assumptions, which could not possibly be duplicated at the site, demonstrate that RF
22 emission levels for this site will still be well below the Maximum Permissible Exposure limits
23 established by the FCC.

24 **Q8. Does this conclude your Prefiled Direct Testimony?**

1 A8. Yes.

Exhibits to Prefiled Testimony of Martin J. Levin

Exhibit ML-1	Antenna, Remote Radio Head and OVP Specifications
Exhibit ML-2	Propagation Plots
Exhibit ML-3	Existing Tower Analysis