STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. _____

Application of Vermont RSA Limited Partnership and Cellco	)
Partnership, each d/b/a Verizon Wireless, for a Certificate of	)
Public Good, pursuant to 30 V.S.A. § 248a, authorizing the	)
modification of an existing wireless telecommunications facility	)
located at 2382 Ridge Road in Brookfield, Vermont	)

AFFIDAVIT OF LOUIS HODGETTS, P.E.
ON BEHALF OF VERMONT RSA LIMITED PARTNERSHIP
AND CELLCO PARTNERSHIP, EACH d/b/a VERIZON WIRELESS

State of Vermont)
) ss:
County of Chittenden)

Louis Hodgetts, being duly sworn, hereby states as follows:

1. The information in my prefiled testimony and all exhibits sponsored therein is accurate to the best of my knowledge.

2. I have personal knowledge of and am able to testify as to the validity of the information contained in my prefiled testimony and all exhibits sponsored therein.

Louis Hodgetts

Sworn to before me, in the state and county stated above, this 15th day of October, 2015.

Notary Public
My Commission Expires: 2/10/19

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PREFILED DIRECT TESTIMONY OF LOUIS HODGETTS, P.E.

ON BEHALF OF VERMONT RSA LIMITED PARTNERSHIP AND CELLCO PARTNERSHIP, each d/b/a VERIZON WIRELESS

OCTOBER 2, 2015

Summary:

Mr. Hodgetts' testimony will address the design of the proposed Project as well as the Project's impact on the applicable Criteria of 10 V.S.A. § 6086(a) and 1424a(d) that have not otherwise been addressed and will demonstrate the Project's conformance with the land conservation measures in the applicable local and regional plans.

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

2 A1. My Name is Louis Hodgetts. I am a Professional Engineer and Project Manager
3 employed by DuBois & King, Inc., in South Burlington, Vermont, which has provided
4 engineering and consulting services to Verizon Wireless and its predecessors over an
5 approximate 24-year period.

6 **Q2. Please state briefly your professional background.**

7 A2. I graduated from University of Vermont, College of Engineering with a Bachelor's
8 Degree in Civil Engineering. I have worked at Dubois & King, Inc. since May 2005. I
9 obtained my Professional Engineering License in June, 2009. I have worked in the area
10 of design and permitting of wireless telecommunications facilities for approximately six
11 years. During that time, I have provided expert testimony and reports before numerous
12 bodies administering local zoning bylaws and Act 250 regarding tower siting and site
13 design. I have experience in many facets of permitting and design of wireless
14 telecommunications facilities, including evaluation of aesthetic and land use impacts.

15 **Q3. Have you ever testified before the Public Service Board?**

16 A3. Yes. I participated in the design of and/or provided prefiled testimony in Docket No.
17 8103 (Town of Norwich), Docket No. 8221 (Berlin North), Docket No. 8169 (Duxbury),
18 Docket No. 8219 (West Rutland), Docket No. 8220 (Bradford), among others, all
19 involving the issuance of a CPG authorizing the installation or upgrade of a
20 telecommunications facility.

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

22 A4. The Project consists of adding 10' to an existing communications tower ("Monopole"),
23 along with antennas centered at the new top height of the Monopole and the expansion of

the existing fenced compound ("Compound") located on approximately 71 acres of property owned by Douglas and Diane Haggett in Brookfield, Vermont. American Tower Corp. ("ATC") owns the Monopole which currently has twelve (12) AT&T panel antennas mounted at 81' above ground level ("AGL") and twelve (12) T-Mobile panel antennas mounted at 72' AGL. The site is accessed from the eastern side of Ridge Road and follows an approximately 1,000' gravel driveway. The coordinates of the Compound are latitude 44°-00'-38.69" North and longitude 72°-36'-58.37" West.

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

A5. In addition to extending the existing tower by 10', Verizon Wireless proposes to expand the existing Compound by approximately 1,000 square feet, from the existing 28' x 50' to 50' x 50', in order to accommodate its 12'x30' two-room equipment shelter within the Compound.

Co-axial and fiber optic cables from the mounted antennas will descend inside the hollow Monopole. The cables will exit near the base of the Monopole and will connect with the Shelter via a cable bridge.

There will be no changes to the existing access drive or the overhead utilities. Clearing is limited to a few trees on the west side of the existing fenced enclosure for the compound expansion. Access to the site will continue to be restricted through the use of a locked gate.

Verizon proposes to mount twelve (12) panel antennas and six (6) Remote Radio Heads ("RRH"), on three T-arm mounting frames, spaced at 90 degree intervals from one another, with four (4) antennas and two (2) RRH per side or "sector", centered at a height of approximately 95' on the Monopole. Each sector will consist of two (2) 1900-2100

MHz AWS/PCS antennas measuring approximately 54.7" long by 12.7" wide, two (2) 700-850 MHz XLTE antennas measuring approximately 76.1" long by 11.9" wide.[1] Each sector will have two (2) RRH measuring approximately 24.4" long and 10.63" wide installed directly behind the antennas. The topmost point of the tallest antenna will extend approximately 36" above the top of the Monopole to approximately 98' AGL. *See* proposed Project Drawings, Exhibit LH-1.

A structural analysis completed by ATC on June 3, 2015, confirmed that the tower meets the requirements of the Vermont State Building Code and TIA-222 with the proposed extension and addition of antennas and equipment. *See* Exhibit LH-2.

The 12' by 30' shelter, with two separate rooms, will be constructed in the area of the expanded Compound. *See* Equipment Shelter Specifications, Exhibit LH-3. One room will contain electronic equipment and the other room will house a diesel-fueled emergency generator to provide back-up power if needed. *See* Exhibit LH-4.

The equipment shelter will have an earth-tone finish on the exterior. There are two (2) insulated steel doors and no windows. Two (2) wall-mounted air conditioners (Exhibit LH-5) will help to maintain the proper temperature within the room containing the transmitting and receiving equipment. The two air conditioning units alternate on a lead lag setting and, under normal circumstances, will be well within commonly-accepted noise standards.

The shelter will feature a single, down-shielded, 75W light at the entrance door *See* Exhibit LH-6. The light will be equipped with a motion detector and will provide light to technicians when ambient light is insufficient.

[1] Occasionally, equipment manufacturers may slightly alter their products or Verizon may purchase from different suppliers. The actual antennas or equipment may differ slightly from what is described in this document.

The proposed new impervious area resulting from the expansion of the Compound will be approximately 891 square feet.

The Project will comply with the requirements of the Low Risk Site Handbook for Erosion Prevention and Sediment Control. Within the proposed Compound extension, a gravel surface with a gentle slope will be provided to capture rainfall and enhance infiltration. Silt fence will be installed parallel to grade and down gradient from construction to prevent eroded sediment from leaving the site. Temporary and permanent stabilization methods, including seeding, mulching or installation of impervious surfaces, will be put in place as soon as feasible. At the completion of construction, disturbed areas will be seeded and mulched and allowed to return to a vegetated state.

Environmental and Related Criteria

Q6. Based on your evaluation, and in response to the requirements of 10 V.S.A. § 6086(a)(1)(D)(floodways) and (a)(8)(historic sites, rare and irreplaceable natural areas, endangered species, necessary wildlife habitat), will the proposed Project impact floodways, result in an adverse effect on 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 any of the applicable criteria under 10 V.S.A. § 6086(a) and 10 V.S.A. § 1424a (d) and will conform to the land conservation measures in the applicable local and regional plans. Below are my detailed responses.

Criterion 1(D) – Floodways: There are no floodways near the Project site as indicated on

the ANR Natural Resources Atlas ("NRA"). *See* Exhibit LH-7, ANR Natural Resources Atlas Map showing Floodways/Flood Prone Areas.

Criterion 8 – Scenic Beauty, Historic Sites and Natural Areas: As stated above, the proposed Project consists of increasing the height of an existing Monopole by ten (10) feet, the minimum height increase required to allow co-location on the Monopole. The existing compound will be expanded as described above and twelve (12) panel antennas and six (6) RRHs will be mounted on three t-arms centered at a height of approximately 95' on the Monopole, with four (4) antennas and two (2) RRHs per side or "sector". The RRHs will be installed directly behind the antennas. The topmost point of the tallest antenna will extend approximately 36" (3') above the top of the extended Monopole.

As described above, a 12' by 30' Shelter, with two separate rooms, will be constructed in the area of the expanded Compound. The proposed new impervious area resulting from the expansion of the Compound will be approximately 891 square feet.

A review of historical resources conducted by Britta Fenniman Tonn, Senior Architectural Historian, determined that there will be no effect on any historic resources. (Exhibit LH-8, Historic Resources Review)

I oversaw the preparation of the photosimulations for the Project (Exhibit LH-9). With a balloon tethered to the ground and floating at the proposed tower elevation, I traveled public roads in the vicinity of the Project to gauge where the proposed extension and antennas might be visible. I did not have authorization to enter private property. There were very few viewpoints from which I could see the balloon. I chose four representative location and took photographs of the Monopole from each one. Under my direction, the balloon was removed and a digital model of the proposed extension,

mounting hardware and antennas was superimposed onto those photographs to create the simulations.

The simulations reveal there are only limited views of the extended Monopole, mounting hardware and antennas from a limited number of locations. Neither the expanded Compound nor the shelter will be visible from offsite. Because there is a tower there now, which is visible from the same locations, the proposed Project fits its surroundings. Therefore, it will not have an adverse effect on the scenic or natural beauty of the area.

Should others contend that this effect is adverse, it will not be unduly adverse using the *Quechee Lakes* test. Other than the parts of the Town Plan that are the subject of the accompanying Memorandum of Law in this case -- which shows why they are not enforceable in this proceeding -- there is no clearly written community aesthetic standard that the Project would violate. The minor changes to an existing telecommunications facility, as proposed in the accompanying Application, would not be shocking or offensive to the average viewer.

Verizon Wireless has taken reasonably available mitigation measures, including:

- Using an existing tower as the support structure for this facility rather than building a new tower Limiting the height of the proposed extension to the minimum necessary;
- Choosing the color for the extension, antennas and mounting hardware to blend in with the existing tower, antennas and mounting hardware;
- Using existing vegetative screening to shield the lower portions of the Monopole and ground facilities from view;

- Using an earth-tone finish on the shelter to blend the Project's ground facilities with each other and with the surrounding environment;
- Using the existing infrastructure, including access and utilities, to support the Project; and
- Expanding the Compound by the minimum amount necessary to accommodate Verizon Wireless' Shelter.

Criterion 8(A) - Wildlife and Endangered Species: As the ANR Natural Resources Atlas (Exhibit LH-10) demonstrates, there are no rare or irreplaceable natural areas, wildlife or endangered species that would be impacted by this proposed Project.

In her report dated September 1, 2015 (Exhibit LH-11), Field naturalist and wetlands specialist Charlotte Brodie stated that she conducted a site visit on August 25, 2015 and found no wetlands in the vicinity of the Project. She observed no rare, threatened, or endangered species or other elements of concern.

The US Fish and Wildlife Service ("USFWS") has recently designated the Northern Long-eared Bat as a threatened species and has classified the entire State of Vermont as potential habitat for the species. The USFWS is in the process of crafting procedures designed to protect the bat's habitat through the imposition of tree cutting restrictions. Any and all clearing will conform to USFWS recommendations to limit potential impact on the Northern Long-eared Bat.

Conformance With Local And Regional Plans - According to 30 V.S.A. § 248a(c)(2), during the Board's review, "substantial deference [will be] given to the land conservation measures" in the local and regional plans of the "affected municipality". I will address the relevant provisions of the 2011 Town of Brookfield Master Plan ("Town Plan") and

1 the 2012 Two Rivers-Ottauquechee Regional Plan ("Regional Plan") to illustrate that the
2 proposed Project will comply.

3 Brookfield Plan: The Town Plan encourages appropriate siting of towers in
4 relation to their context and advocates for co-location wherever feasible to help preserve
5 the aesthetics and scenic beauty of the Town, especially the ridgelines. The Town Plan
6 also encourages development in a manner that minimizes, the natural resource impact of
7 the facility (*See* Exhibit LH-12, Town Plan).

8 The Project complies with the land use conservation measures of the Town Plan
9 because it is a co-location on an existing tower. Verizon Wireless has proposed two
10 different solutions to address the area's wireless service needs – construction of a new
11 tower on West Road or co-location on this existing tower.[2] From an engineer's
12 perspective, the two solutions offer different advantages and disadvantages. In
13 consideration of the land conservation measures in the Town Plan, Verizon Wireless is
14 pursuing the co-location. The surroundings of the Monopole are largely wooded, limiting
15 its visibility and helping to preserve the aesthetic and scenic beauty of the Town. This
16 modification minimizes any impact on natural resources which is also consistent with the
17 Town Plan. See the Prefiled Testimony of AJ Lanpher for specific information regarding
18 the current and future wireless service demands in the area and the role of this Project in
19 the existing Verizon Wireless network.

20 The Town recognized the benefits of co-location in its comments to the Public
21 Service Board on AT&T's application for a 10' extension to the Monopole:

22 [I]n deciding whether to approve the proposed changes under 30 V.S.A. §

[2] Verizon Wireless prefers to construct the proposed Project rather than the new tower that is the subject of the 45-day Notice submitted on April 2, 2015. However, Verizon Wireless is not withdrawing that Notice and is not waiving its right to pursue that project.

248a, the PSB will consider the general good of the state, balancing the impacts and costs of the changes with their benefits, including whether the changes support universal availability of infrastructure for transmitting voice and high-speed data, availability of wireless telecommunications services along the state's travel corridors and in its communities, and competitive choice for consumers among telecommunications providers. 30 V.S.A. §§ 202c(b), 248a(a).

Exhibit LH-13, Memorandum of Brookfield Planning Commission at 2.

The Memorandum concluded that the general good of the AT&T proposal outweighed the Town's assertions of non-compliance with the Town Plan and the Board agreed. (Exhibit LH-14 Docket # 8126 Final Order at 5-6).[3]

Regional Plan: The Regional Plan (Exhibit LH-15, excerpts of Regional Plan) specifically addresses wireless telecommunications facilities through the following goals:

- to enable new economic opportunities through the use of wireless telecommunications technology;
- to support the enhancement of the wireless telecommunications network when such facilities do not have significant adverse environmental, health, or aesthetic impacts;
- to make high-speed internet access available to all areas in the region;
- to support the enhancement of the broadband internet network when such facilities do not have significant adverse environmental, health, or aesthetic impacts;
- to actively support public and private initiatives to expand or improve high-speed internet access throughout the region including the Vermont Public Service Board's requiring deployment from private telecom firm; and
- to provide an exceptional telecommunications system that supports the interests of both current and future businesses and residents.

[3] Please see Verizon Wireless' Memorandum of Law Regarding Town Plan which provides legal argument to further support these conclusions.

This Project fulfills the goals of the Regional Plan by improving the existing wireless service in areas underserved by the telecommunications facility as it now exists, thus enhancing the infrastructure necessary for businesses and home offices to succeed in the global economy. The Project will provide for improved communications for industry, residents, travelers, educational institutions and emergency responders and for greater competitive choices for consumers of wireless services.

Q7. Please identify any existing permits that relate to the facility and conditions that could impact the proposed improvements.

A7. The construction of the original Monopole and related improvements were authorized by the Town of Brookfield Planning Commission through a letter dated October 23, 2009 and recorded in Permit Book 3 at Page 395 of the Brookfield Land Records enclosing the minutes of the Planning Commission's meetings dated August 26, 2009 and September 15, 2009. (Exhibit LH-16) and by Vermont Land Use Permit No. 3R102, issued by the District 3 Environmental Commission on December 1, 2009. *See* Exhibit LH-17. The existing extension and placement of AT&T's antennas and other improvements was authorized by this Board's Order in Docket 8126 (Exhibit LH-14).

Q8. Can you certify that Verizon Wireless has not obtained or been denied a permit or permit amendment for the improvements covered by the current application or substantially similar improvements, under applicable provisions of Title 24 or chapter 151 of Title 10?

A8. Yes, I can certify that Verizon Wireless has neither applied for, obtained, nor been denied a permit or permit amendments under applicable provisions of Title 24 or chapter 151 of Title 10 for the improvements covered by the current application or substantially similar

1 improvements.

2 **Q9. Does this conclude your Prefiled Direct Testimony?**

3 A9. Yes.

Exhibits to Prefiled Testimony of Louis Hodgetts

Exhibit LH-1	Permit Drawings
Exhibit LH-2	Structural Analysis Report, dated June 3, 2015
Exhibit LH-3	Typical Equipment Shelter Specification
Exhibit LH-4	Emergency Generator Specification
Exhibit LH-5	Air Conditioner Specification
Exhibit LH-6	Exterior Light Specification
Exhibit LH-7	ANR Natural Resources Atlas, Flood Hazard Areas
Exhibit LH-8	Historic Resources Review completed by Britta Tonn, dated October 1, 2015
Exhibit LH-9	Photosims
Exhibit LH-10	ANR Natural Resources Atlas, Fish and Wildlife Inventory
Exhibit LH-11	Wetlands Report completed by Charlotte Brodie, dated September 1, 2015
Exhibit LH-12	Portions of Town of Brookfield Town Plan
Exhibit LH-13	Memorandum of Brookfield Planning Commission dated July 12, 2013
Exhibit LH-14	PSB Docket No. 8126, Final Order, issued on October 18, 2013
Exhibit LH-15	Portions of 2012 Two Rivers-Ottauquechee Regional Plan
Exhibit LH-16	Town of Brookfield Permit for original T-Mobile Monopole through a letter dated October 23, 2009
Exhibit LH-17	Act 250, LUP# 3R102, issued by the District 3 Environmental Commission on December 1, 2009