Bluestone Wind Project

Case No. 16-F-0559

1001.26 Exhibit 26

Effect on Communications

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EXHIBIT 26 EFFECT ON COMMUNICATIONS

(a) Existing Broadcast Communication Sources

This Exhibit identifies existing broadcast communication sources within a two-mile radius of the Facility and the electric interconnection between the Facility and the point of interconnection, unless otherwise noted.

(1) AM Radio

Comsearch conducted a review of Federal Communications Commission (FCC) license data and compiled a list of AM radio stations within approximately 30 kilometers (18.6 miles) of the proposed Facility (see Appendix EEE).[1] Four AM stations were identified, three licensed separately for daytime and nighttime operations and one licensed for both daytime and nighttime operations: WCDO, 23.1 kilometers (14.3 miles) to the north of the Facility; WINR, 23.4 kilometers (14.5 miles) to the west; WYOS, 27.2 kilometers (16.9 miles) to the west; and WDLA, 29.8 kilometers (18.5 miles) to the east. According to Comsearch, potential interference with AM broadcast coverage could only occur if turbines were located within 3 kilometers (1.9 miles) of AM broadcast stations. All four stations are located well outside of this distance; therefore, the Facility is not anticipated to result in adverse impacts to local AM station coverage.

(2) FM Radio

Comsearch conducted a review of FCC license data and compiled a list of FM radio stations within approximately 30 kilometers (18.6 miles) of the proposed Facility (see Appendix EEE).[1] Sixteen database records were identified. These records are itemized in Table 26-1 below.

Table 26-1. FM Radio Stations within 30 Kilometers of the Facility

Call Sign	Frequency (MHz)	Distance to Nearest Turbine (kilometers)	Distance to Nearest Turbine (miles)
WIYN	94.7	4.3	2.7
WIFF	90.1	10.6	6.6
WDRE	100.5	10.6	6.6
WJOB-FM	93.3	13.1	8.1
WQFM	104.5	18.8	11.7
WCDO-FM	100.9	20.1	12.5
WKGB-FM	92.5	23.2	14.4

[1] This search radius included areas in Pennsylvania.

Call Sign	Frequency (MHz)	Distance to Nearest Turbine (kilometers)	Distance to Nearest Turbine (miles)
W292DL	106.3	23.9	14.8
WJOB-FM1	93.3	24.0	14.9
WLDM-LP	95.7	25.1	15.6
W275BC	102.9	25.7	16.0
W283AT	104.5	26.6	16.5
WBDY-LP	99.5	28.8	17.9
WDLA-FM	92.1	29.8	18.5
WSQX-FM	91.5	30.1	18.7
WCIJ	88.9	31.5	19.6

According to Comsearch, FM station coverage is generally not susceptible to interference caused by wind turbines when these turbines are sited in the *far field* region of the radiating FM antenna to avoid the risk of distorting the antenna's radiation pattern. The closest FM station to the Bluestone Wind Facility, WIYN, is more than 4.2 kilometers from the Facility. At this distance, there should be adequate separation to avoid radiation pattern distortion.

(3) Television

Off-air television stations broadcast signals from terrestrially-based facilities directly to television receivers. Television stations within 100 kilometers (62 miles) are the most likely to provide off-air coverage to the communities near the Facility. Comsearch examined the coverage of television stations and communities in the area that could potentially have degraded television reception because of Facility operation (see Appendix FFF). There are 57 television stations within 100 kilometers of the proposed Facility,[1] of which only 51 are currently licensed and operating. Thirty-three of these 51 are low-power stations or translators, which serve local audiences and have limited ranges; the remaining 18 stations are full power stations.

After the wind turbines are installed, 11 of the full-power stations (WIVT, WICZ-TV, WSKG-TV, WBNG-TV, WSWB, WQPX-TV, WNYS-TV, WOLF-TV, WNEP-TV, WBRE-TV, WYOU), may have reception disrupted in and around the Facility, primarily in locations within 10 kilometers of the Facility that have clear line-of-sight to at least one wind turbine, but not to the station antennae.

Communities and homes to the east of the Facility may have degraded reception of stations WIVT, WICZ-TV, WSKG-TV, and WBNG-TV, which are located west of the Facility. Similarly, stations WSWB, WQPX-TV, WOLF-TV, WNEP-TV, WBRE-TV, WYOU, which broadcast from southwest of the Facility, may have diminished

reception in communities directly to the north and the east of the Facility. In the case of station WNYS-TV, which broadcasts from the northwest, disruption is likely to be limited to communities south and east of the Facility.

Residents that experience degraded off-air television service after installation of the Facility can file a formal complaint with Applicant. The Applicant takes seriously any complaint that it receives from members of the public and will follow the Complaint Resolution Plan (see Appendix R) in resolving any complaints received. For off-air TV reception complaints specifically, the Applicant may offer a variety of mitigation measures (e.g., cable service or direct broadcast satellite service) to those who can show their reception has been disrupted by the Facility. Both cable service and direct broadcast satellite service will be unaffected by the presence of the Facility.

(4) Telephone

Wireless operators are granted area-wide licenses from the FCC to deploy their cellular networks, which often include handsets with Emergency 911 capabilities (i.e., phones that automatically provide the location of the phone to emergency services). As mobile phone market boundaries differ from service to service, Comsearch disaggregated the carriers' licensed areas down to the county level (see Appendix III). The type of service (e.g., cellular service at 800 MHz [CELL], advanced wireless service [AWS], personal communication service at 1.9 GHz [PCS], wireless communications service at 2.3 GHz [WCS], lower 700 MHz service [700 MHz]) for each mobile phone carrier with E911 service in Broome and Delaware counties is provided below:

- AT&T: AWS, CELL, PCS, WCS, 700 MHz
- Blue Wireless: PCS
- Delaware PCS Limited Partnership: PCS
- DISH Network: 700 MHz
- Sprint: PCS
- T-Mobile: AWS, PCS, 700 MHz
- Verizon: AWS, CELL, PCS, 700 MHz

No cellular sites are located within two miles of Facility components (Appendix III).[2] According to Comsearch, both cellular mobile phone signal propagation and commercial Emergency 911 communications are typically unaffected by the presence of wind turbines, and no significant adverse impacts to these services are anticipated because of the Facility. Wireless networks are designed with overlap between adjacent base transmitter stations. If a connection cannot be made to one base station, the signal will shift to an adjacent base station to make the

[2] Note, Appendix III identifies seven cellular sites; however, none of these sites are within two miles of Facility components. The sites were included in Appendix III to provide context and disclose the proximity of the closest cellular sites to the Facility.

connection. In addition, the beam widths of the radiated signal from the base stations and mobile units are wide and the wavelength of the signal is long enough to wrap around objects such as wind turbine towers and blades. This allows wireless networks to provide coverage even in areas that are congested with physical obstructions (e.g., downtown urban areas). As a result, little, if any, change in coverage should occur when the wind turbines are installed.

From an electromagnetic interference standpoint, the emissions from wind turbines, which are specified by the FCC, have been considered to ensure the turbines will not interfere with cellular base stations or mobile units. Comsearch's calculations indicate that the turbines are not expected to interfere with cellular signals if the cellular tower base stations are located 77.3 meters (254 feet) or more from the nearest turbine (Appendix III). Because no cellular sites are located within two miles of Facility components, no changes in coverage are anticipated when the turbines are installed.

(5) Microwave Transmission

Microwave bands that may be affected by the installation of wind turbine facilities operate over a wide frequency range (900 MHz – 23 GHz). These systems are the telecommunication backbone of the country, providing long-distance and local telephone service, backhaul for cellular and personal communication service, data interconnects for mainframe computers and the Internet, network controls for utilities and railroads, and various video services. Comsearch prepared a study evaluating the location of the Facility relative to licensed, proposed, and applied non-federal government microwave systems in the area (see Appendix HHH). The study identified one microwave path that intersects the Facility. Table 26-2 provides the call sign, band, and licensee for the path. A map showing the location of this microwave path is provided in Appendix HHH.

Table 26-2. Microwaves Paths within the Facility

Callsign 1	Callsign 2	Band	Licensee
WMM872	WQPI219	Lower 6 GHz	Binghamton MSA Limited Partnership (NY)

To assure an uninterrupted line of communication, a microwave link should be clear, not only along the axis between the center point of each microwave dish, but also within a formulaically calculated distance around the center axis of the radio beam, known as the Fresnel Zone. Comsearch calculated the Fresnel Zone for the microwave path listed above and mapped it in relation to the rotor-swept area of the final turbine layout. The analysis evaluated up to 33 proposed turbines, each with a blade diameter of 150 meters and a tower height of 130 meters. Comsearch found that none of the turbines would result in obstruction of the microwave path.

(6) Emergency Services

Comsearch assessed the emergency services communication sources near the Facility to identify potential impacts from the planned turbines (Appendix GGG). Registered frequencies for the following types of first responder entities were evaluated: police, fire, emergency medical services, emergency management, hospitals, public works, local school districts, transportation and other state, county, and municipal agencies. Land mobile and emergency services incumbent data were derived from the FCC's Universal Licensing System and the FCC's Public Safety & Homeland Security Bureau. Comsearch identified two site-based licenses and 36 regional area-wide licenses designated for public safety use. The licensee, call sign, frequency bands, antenna height, and distance to nearest turbine for the site-based licenses are provided in Table 26-3. The licensee, area of operation, and frequency band for area-wide licenses are provided in Table 26-4.

Table 26-3. Site-Based Licensed Communication Sources

Licensee	Call Sign	Frequency Bands (MHz)	Antenna Height (meters)	Distance to Center of Facility (meters)
New York State	WNVD201	150-174	4	3.9
Binghamton Volunteer Fire Co., Inc.	KEG470	25-50	21	4.6
Village of Deposit	WNZS287	150-174	18	4.81
Binghamton Psychiatric Center	WQUI560	450-470	21	6.01
Conway, Robert, J: Conway, Thomas, J	WQRY386	450-470	59.4	6.21
New York State Electric & Gas Corporation	WPIZ922	150-174	30	6.22
Broome County	KED639	150-174	31	6.22
Broome County	KKL552	450-470	3.1	6.22
Broome County	KKL552	150-174	23	6.22
Broome County	KKL552	25-50	31	6.22
New York Division of State Police	KSJ590	150-174	47	6.22
Broome County	WDT328	450-470	18	6.22
Broome County	WNAZ708	450-470	24	6.22
Windsor Central School District	WNQR312	450-470	43.3	6.22
New York State Electric & Gas Corporation	WPIW501	150-174	30	6.22
Broome County	WQXU815	150-174	54.9	6.22
New York State	WNVC996	150-174	6	6.22
Broome County	WPLY807	800/900	46	6.24
Deposit Central School District	WQDX581	450-470	33.5	6.3
New York State Electric & Gas Corporation	WQIW290	150-174	61	6.3
Broome County	WQPV652	450-470	31	6.3
Broome County	WQRN496	450-470	31	6.3
Delaware Otsego Corporation	WQXL756	150-174	12.2	6.78

Licensee	Call Sign	Frequency Bands (MHz)	Antenna Height (meters)	Distance to Center of Facility (meters)
Village of Deposit	KIR720	150-174	12	7.4
Broome County	WQXU815	150-174	12.2	7.48
Broome County	WQPV652	450-470	54.9	7.51
Broome County	WQRN496	450-470	54.9	7.51
Deposit Central School District	WQDX581	450-470	18.3	7.58
Repeater Network, LLC	WRAK568	450-470	94.5	7.62
NPCR, Inc.	WQDB435	800/900	31	7.67
Delaware County	KBL394	25-50	18	8.65

Table 26-4. Area-Wide Licensed Communication Sources

Licensee	Area of Operation	Frequency Band (MHz)
A O Fox Memorial Hospital	Countywide: Delaware	150-174
American National Red Cross	Countywide: Broome	450-470
American National Red Cross	Statewide: New York	25-50, 450-470, 800/900
Bergen Volunteer Fire Department	Statewide: New York	150-174
Broome County	Countywide: Broome	150-174, 450-470
Broome County Emergency Service	Countywide: Broome	4940-4990
Central Islip Hauppauge Volunteer Ambulance, Inc.	Statewide: New York	150-174
Delaware County	Countywide: Delaware	25-50, 150-174, 450-470, 800/900
Endwell Fire District	Countywide: Broome	25-50, 150-174
Erie County	Statewide: New York	25-50, 150-174, 421-430, 450-470
Massasauga Search and Rescue, Inc.	Statewide: New York	150-174
National Ski Patrol System, Inc.	Statewide: New York	150-174
New York City	Statewide: New York	450-470, 800/900, 4940-4990
New York City Police Department	Statewide: New York	150-174
New York State	Statewide: New York	0-10, 25-50, 150-174, 220-222, 450-470, 800/900, 4940-4990
New York State Department of Corrections and Community Supervision	Statewide: New York	150-174, 450-470, 4940-4990
New York State Department of Environmental Conservation	Statewide: New York	25-50, 150-174, 450-470
New York State Department of Health Bureau of Emergency Medical Services	Statewide: New York	25-50, 150-174, 450-470
New York State Department of Labor	Statewide: New York	150-174
New York State Department of Transportation	Statewide: New York	0-10, 4940-4990
New York State Division of State Police	Statewide: New York	25-50, 150-174, 220-222, 450-470, 800/900, 2450-2500, 4940-

Licensee	Area of Operation	Frequency Band (MHz)
		4990
New York State Emergency Management Office	Statewide: New York	25-50, 150-174
New York State Office of Parks, Recreation, and Historic Preservation	Statewide: New York	450-470
New York State OPRHP - Albany Region	Statewide: New York	150-174
New York State OPRHP - Long Island Region	Statewide: New York	150-174
New York State OPRHP - Niagara Region	Statewide: New York	150-174
Niagara Frontier Search and Rescue	Statewide: New York	150-174
Northeast Mobile Search and Rescue, Inc.	Statewide: New York	150-174
Northeastern Forest Fire Protection Compact	Statewide: New York	25-50, 150-174
Ossining Village	Statewide: New York	25-50, 450-470
Ouaquaga Fire Company, Inc.	Countywide: Broome	25-50
Triborough Bridge and Tunnel Authority	Statewide: New York	4940-4990
Vestal Volunteer Emergency Squad, Inc.	Countywide: Broome	150-174
West Endicott Hose Co., Inc.	Countywide: Broome	25-50
Western New York Search Dogs, Inc.	Statewide: New York	150-174
Windsor Village	Countywide: Broome	25-50, 150-174
Windsor-Colesville Fire District	Countywide: Broome	450-470
Town of Woodbury	Statewide: New York	4940-4990

According to Comsearch, first responder, industrial/business, area-wide public safety, and commercial E-911 communication sources are typically unaffected by the presence of wind turbines, and no significant adverse impacts to these services are anticipated because of the Facility. Although these sources operate in different frequency ranges and provide different types of service (e.g., voice, video, and/or data), the impact of wind turbines on these services is similar. Each of these communication services is designed to operate reliably in a non-line-of-sight environment. The frequencies of operation for these sources allow the signal to propagate through wind turbines and, as discussed in section (a)(4) of this Exhibit, land mobile systems are designed with overlap between base transmitter stations to maintain reception if the signal to one station is impeded.

Comsearch's calculations indicate that the turbines are not expected to interfere with cellular signals if the cellular tower base stations are located 77.3 meters (254 feet) or more from the nearest turbine. This distance is based on FCC interference emissions from electrical devices in the land mobile frequency bands. The nearest land mobile-fixed base station is approximately 440 meters (1,444 feet) from the nearest proposed turbine location. Therefore, the proposed wind turbines are all in compliance with the recommended conservative setback criteria for FCC interference emissions in the land mobile bands.

On August 24, 2018 and August 27, 2018, the Applicant sent letters to the Broome County Department of Emergency Services and the Broome County Sheriff's Office, respectively. These letters included a brief description of the Facility and a summary of the anticipated effects of the Facility on emergency service communications, as discussed in this Exhibit. These letters also requested that any information regarding the potential impact of the Facility on emergency service communications be provided to the Applicant. The Applicant will provide updated correspondence and any information provided by these entities to New York State Department of Public Service as they become available.

In the unlikely event that a public safety entity believes their coverage has been compromised by the Facility, the Applicant will work with the public safety entity to remedy any interference related to the Facility. Possible solutions include optimizing nearby base transmitters, adding a repeater site, and/or using utility towers, meteorological towers, or even the turbine towers within the Facility as base station or repeater sites.

(7) Municipal/School District Services

Municipal and school district communication sources were included in the assessment of emergency services communication sources described above in Section (a)(6) and in Appendix GGG. Two licenses are held by the Deposit Central School District. These licenses are associated with 33.5-meter (110-foot) and 18.3-meter (60-foot) antennas located southwest and southeast of the Facility, respectively. One license is held by the Windsor Central School District. This license is associated with a 43.3-meter (142-foot) antenna located southwest of the Facility. Comsearch also identified numerous communication sources licensed to municipalities, including local towns and villages. Tables 26-3 and 26-4 in Section (a)(6) above and Appendix GGG provide a full listing of site-based and area-wide communication sources in the area, identified by licensee.

For the reasons set forth in section (a)(6) above, land mobile sites and area-wide public safety communications are typically unaffected by the presence of wind turbines. As municipal and school communications sources fall under these categories, no significant adverse impacts to these services are anticipated because of the Facility.

(8) Public Utility Services

Public utility communication sources were included in the assessment of emergency services communication sources described above in Section (a)(6). Comsearch identified three site-based licenses issued to public utilities. The site-based communication sources include two 30-meter (98-foot) antennas and one 61-meter (200-foot) antenna licensed to the New York State Electric and Gas Corporation (NYSEG). Tables 26-3 and 26-4 in Section (a)(6) further describe these licenses.

For the reasons set forth in Section (a)(6) above, land mobile sites and area-wide public safety communications are typically unaffected by the presence of wind turbines. As public utility communications sources fall under these categories, no significant adverse impacts to these services are anticipated because of the Facility.

(9) Doppler/Weather Radar

NEXRAD (next-generation radar) or Doppler weather radar are operated by the National Weather Service (an agency of the National Oceanic and Atmospheric Administration [NOAA]), the Federal Aviation Administration (FAA), and the U.S. Air Force. NEXRAD detects precipitation, winds, and temperature and humidity discontinuities. From these data, computer algorithms generate a suite of meteorological and hydrological products and alerts used for determining short-term forecasts, advisories, and warnings for significant weather events such as tornadoes, large hail, wind shear, downbursts, flash floods, and other weather phenomena. The data are also used by FAA air traffic controllers for the safe and efficient operation of the National Airspace System.

Wind turbine and weather spectra can span the same Doppler frequencies and share a similar dynamic range, causing conventional radar clutter filtering algorithms, which only filter energy returned from nearly stationary objects (buildings, terrain, etc.), to fail in isolating the weather signal. When wind farms are in a NEXRAD radar beam/radar line of sight, the spinning blades can reflect unfilterable energy back to the radar system and appear as clutter in the base data. The unfiltered wind turbine clutter can adversely impact radar data quality and the performance of the radar's internal weather detection algorithms.

Turbines sited within 18 kilometers (11.2 miles) of a NEXRAD installation begin to impact multiple elevation scanning angles and create multipath scattering returns that show up as spikes of enhanced reflectivity down range of the wind farm (Vogt et al., 2011; Norin and Haase, 2012). The nearest NEXRAD Doppler facility is in Binghamton, approximately 32.2 kilometers (20 miles) from the Facility.

Comsearch analyzed the potential impacts of the proposed Facility on three types of radar systems: National Weather Service (NWS) NEXRAD WSR-88D systems, FAA long range radar systems, and Department of Defense (DoD) military systems. Comsearch used the DoD RADAR screening tool to determine whether potential coverage issues were anticipated for the above systems. The results of the screening showed that there were no potential issues with DoD military systems, FAA long range radar systems, or NWS NEXRAD WSR-88D systems. More specifically, for NEXRAD systems, the results of the screening tool showed that no

obstruction to the radar line-of-sight (LOS) was predicted. See the Government Radar Systems Analysis (Appendix KKK) for a full discussion of the impacts of the Facility on government radar systems. In addition, the federal government conducts its own assessment of the impacts of wind projects on government radar systems, including NEXRAD, as part of reviews conducted under the auspices of the National Telecommunications and Information Administration (NTIA) and FAA.

The Applicant sent an initial written notification of the proposed Facility to the NTIA on April 25, 2018. The NTIA provided plans for the proposed Facility to the federal agencies represented in the Interdepartmental Radio Advisory Committee (IRAC), which include the NOAA, FAA, and U.S. Air Force, among other agencies. The NTIA's response, dated July 12, 2018, indicates: the Facility will result in low impacts to doppler/weather radar; the lowest elevation scanning angle will likely be affected; and no further notification is required unless there are changes in the height of the proposed turbines or project area. Because the initial filing to NTIA was based on an anticipated turbine height of 410 feet and the Applicant is currently proposing a turbine height of 673 feet, an updated request was submitted to NTIA on August 30, 2018. According to Comsearch, no additional adverse effects are anticipated as a result of the turbine height increase, based on the results of the government radar systems analysis. The Applicant will provide the Siting Board with updated NTIA correspondence upon receipt. NTIA correspondence is attached as Appendix DDD.

Also, as discussed in Section (a)(10) below, the Facility must obtain a Determination of No Hazard (DNH) from the FAA because the turbines are an airspace obstruction. The review process considers the impact of the turbines on all aspects of aviation operations, including the operation of radar facilities. Issuance of the DNH confirms that the Facility will not significantly impact radar operations relative to aviation safety and military readiness.

(10) Air Traffic Control

The closest air traffic control tower is located approximately 22 miles west of the Facility at the Greater Binghamton Airport (AirNav.com, 2018). The FAA is the organization in the United States government responsible for air traffic control and for evaluating and issuing determinations on petitions for objects that penetrate the nation's airspace. Under 49 USC § 44718, any person proposing to undertake any construction that is more than 200 feet above ground level (AGL) must provide notice to the FAA. As part of the required review process, the FAA will reach out both internally and to other agencies, including the DoD Siting Clearinghouse, to determine whether the turbines will adversely affect air safety, including navigational and surveillance systems such as radar.

Any object, such as a wind turbine, that is higher than 499 feet AGL at the site of the object is automatically issued a Notice of Presumed Hazard (NPH). Issuance of an NPH triggers a requirement for the FAA to conduct an aeronautical study of the locations of each proposed turbine. The FAA can issue two types of determinations – a Hazard Determination or a DNH. The Applicant has submitted the proposed Facility layout to the FAA so that aeronautical studies of locations of each proposed turbine can be conducted under the provisions of 49 USC § 44718 and its implementing regulations at 14 CFR Part 77. The Applicant will continue to coordinate with the FAA and will provide copies of any determinations to the Siting Board upon receipt.

In addition, as discussed in Section (a)(9) above, the FAA is one of the federal agencies represented in the IRAC, which has reviewed the proposed Facility as part of the NTIA review. The response letter from NTIA is included in Appendix DDD.

(11) Armed Forces

According to the Military Installations, Ranges, and Training Areas GIS dataset maintained by the DoD, the nearest Armed Forces installation to the Facility is the Tobyhanna Army Depot, located approximately 60 miles south of the proposed Facility (data.gov, 2018). As discussed in Section (a)(9) above, the Applicant supplied written notice of the proposed Facility to the NTIA on April 25, 2018. The NTIA, in turn, distributed the information to the federal agencies represented in the IRAC, which include the Department of Homeland Security, U.S. Air Force, U.S. Army, U.S. Navy, U.S. Coast Guard, and Department of Veteran Affairs.

Also, as part of its hazard determination process, the FAA must reach out to the DoD Siting Clearinghouse, which is responsible for assessing the impact of possible airspace obstructions on military operations and readiness. The DoD Siting Clearinghouse, in turn, is required to reach out to any military organizations or facilities potentially impacted by an airspace obstruction to obtain their comments/recommendations concerning a particular project. The Siting Clearinghouse then evaluates the comments received, determines whether that project will have an adverse impact on military operations and readiness, and reports that information on to the FAA. Receipt of an FAA DNH following the DoD Siting Clearinghouse review process is evidence that the Facility will not impact military operations or readiness.

As discussed in Section (a)(10) above, the Applicant has submitted the proposed Facility layout to the FAA so that aeronautical studies of locations of each proposed turbine can be conducted under the provisions of 49 USC

§ 44718 and its implementing regulations at 14 CFR Part 77. The Applicant will continue to coordinate with the FAA.

(12) GPS

Global Positioning System (GPS) is a U.S.-owned utility that provides users with positioning, navigation, and timing services. This system consists of three segments: the space segment, the control segment, and the user segment. The U.S. Air Force develops, maintains, and operates the space and control segments. The GPS control segment consists of a global network of ground facilities that track the GPS satellites, monitor their transmissions, perform analyses, and send commands and data to the constellation. The GPS ground facility located closest to the proposed Facility is the Air Force Satellite Control Network remote tracking station located in New Hampshire. The National Executive Committee coordinates GPS-related matters across multiple federal agencies to ensure the system addresses national priorities as well as military requirements. The National Executive Committee is chaired jointly by the Deputy Secretaries of Defense and Transportation, and membership includes top leaders from the Departments of State, the Interior, Agriculture, Commerce, and Homeland Security, the Joint Chiefs of Staff, and NASA (National Coordination Office, 2018).

Each of the agencies represented in the National Executive Committee are also represented in the IRAC. See Section (a)(9) above for a discussion of the IRAC review process.

(13) LORAN

LORAN was a long-range navigation system developed during World War II that has since been deemed obsolete. Radio signals were sent through a series of towers across long distances as an aid to keep ships and aircraft on course. In accordance with the 2010 Department of Homeland Security Appropriations Act, the U.S. Coast Guard terminated the transmission of all U.S. LORAN signals in 2010. Therefore, no further discussion of LORAN is provided in this Application.

(14) Amateur Radio Licenses

Database searches of all amateur radio licenses registered to users with zip codes overlapping a two-mile radius of the Facility was conducted via the FCC License Data Search on the website of the American Radio Relay League (ARRL, 2018) and via RadioQTH's database of call signs (Lewis, 2018). Thirty-four database records were returned. Because the data are organized by zip code, some of these records may be greater than two

miles from the Facility, but within a zip code that is within two miles of the Facility. The call sign, expiration date, and operator class for each of the amateur radio licenses is provided below in Table 26-5.

Table 26-5. Amateur Radio Licenses near the Facility

Call Sign	Expiration Date	Operator Class
N2EF	5/25/2023	Amateur Extra
N2DPO	2/21/2027	Technician
WA2WVU	08/22/2026	Amateur Extra
N2WSQ	10/05/2023	Technician
N2NOL	08/09/2022	General
KB3ELG	12/09/2019	Technician
KB3FLN	09/19/2020	Technician
KC2UZA	04/09/2019	General
KC2URO	03/02/2019	Technician
KC2MLB	01/22/2024	General
KC2TEO	04/08/2028	General
WB2QEJ	12/17/2026	Technician
K2VQ	06/16/2021	Amateur Extra
WN2D	06/14/2026	Amateur Extra
K2RML	01/10/2019	Technician
KC2ZZT	04/06/2021	Technician
KC2ZNP	12/07/2020	Technician
KC2ZQW	01/24/202	Technician
N2OPR	11/20/2021	Technician
KD2IXJ	06/18/2025	Technician
WA2DJF	07/03/2017	General
N2JDG	01/03/2019	Technician
KC2EYQ	05/19/2019	Technician
WQ2L	06/04/2019	Amateur Extra
KD2GDR	04/09/2024	Technician
KD2GDQ	04/09/2024	Technician
KF2VZ	07/13/2024	Advanced
KC2UOS	02/04/2019	Technician
WA2QAK	06/14/2025	Technician
KC2CAW	06/19/2027	Technician
N3YY	05/20/2027	Amateur Extra
AB2HB	03/28/2027	Amateur Extra
KC2ZER	09/30/2020	General
N2LYT	03/24/2022	Amateur Extra

(15) New York State Mesonet System

The New York State Mesonet System is a statewide network of weather stations developed and run by the University at Albany. This system collects data on mesoscale meteorological phenomena and is used to supplement data gathered by traditional automated surface observing systems (ASOS), supporting decision-making in agriculture, emergency management, energy, ground transportation, and aviation. Based on recent consultation with Comsearch, each station in the New York State Mesonet must be located at least 300 feet from any tall obstacles, such as wind turbines to ensure the highest quality of data. The closest Mesonet station to the Facility is located east of the Village of Deposit, approximately three miles from the closest turbine and well outside the range of impact. Finally, it should be noted that the data from each station is transmitted via the Internet to a central ingest system located at the University of Albany and is therefore not subject to telecommunications interference from the proposed Facility.

(b) Existing Underground Cable and Fiberoptic Lines within Two Miles

The Applicant is not aware of any underground cable or fiber optic lines within the Facility Site. However, there are overhead telecommunications utilities within two miles of the Facility. No impacts to these resources are anticipated as Facility collection lines will be underground, and the Applicant will design the Facility to avoid interference with all existing utility systems. See Exhibit 12 for a full discussion of the measures the Applicant will take to avoid interference with existing utility systems.

(c) Anticipated Effects on Communication Systems

Section (a) above provides a description of the communication systems in and around the Facility and any expected impacts to those systems. The subsections below discuss the anticipated effects of the proposed Facility and the electric interconnection on the communication systems identified above in Sections (a) and (b).

(1) Potential Structure Interference with Broadcast Patterns

Eleven licensed full-power television stations may have their reception disrupted in and around the Facility, primarily in locations on the opposite side of the Facility relative to the station antennas (Appendix FFF). A full discussion of the identity of these stations and where reception is expected to be diminished is provided above in Section (a)(3). No other structure interference with broadcast patterns is anticipated.

(2) Potential for Structures to Block Lines-of-Sight

As noted in Section (a)(5) above, microwave telecommunication systems are wireless point-to-point links that require clear line-of-sight conditions between each microwave dish. To assure an uninterrupted line of communication, a microwave link should be clear, not only along the axis between the center point of each microwave dish, but also within a formulaically calculated distance around the center axis of the radio beam, known as the Fresnel Zone. Comsearch calculated the Fresnel Zone for the single microwave path identified near the proposed Facility (see Appendix HHH). An overlay analysis was conducted using these Fresnel Zones and the final Facility layout, assuming turbines would be built with 150-meter diameter rotors. This analysis showed that Fresnel Zones will not overlap the rotor-swept area of any of the wind turbines in the proposed Facility layout. Consequently, there will be no impact to microwave communications.

(3) Physical Disturbance by Construction Activities

Physical disturbance to communication infrastructure (e.g., towers, buried cables, etc.) during construction is not anticipated. The location of any such infrastructure adjacent to the Facility will be indicated on construction drawings and reviewed by the contractor prior to construction. The Applicant will also coordinate with Dig Safely New York prior to commencing any construction activities. All Facility construction and maintenance work that requires excavation will follow the One Call process with Dig Safely New York, Inc. This process helps prevent damage by alerting the excavator to the locations of underground utilities, including electric, gas, oil, steam, water, sewer, and communications lines. The excavator flags the area to be excavated and then provides information to Dig Safe New York about the company performing the excavation, the duration of the job, the locations of digging, the depth of the excavation, and other information. Dig Safely New York members, who are utility operators, respond to the request either by noting that the area is clear, or by providing the locations of their facilities. These facilities are then marked above ground, and either avoided or protected during the excavation. If an underground facility cannot be avoided and needs to be exposed, the excavator will provide proper support and protection so that the facility is not damaged. Upon completion of work, the excavator backfills around any exposed utilities.

(4) Adverse Impacts to Co-Located Lines due to Unintended Bonding

Considering the separation and protection measures discussed in Section (c)(3), the Applicant does not believe that there is significant potential for the proposed Facility and electrical interconnection to adversely impact co-located lines due to unintended bonding.

(5) Other Potential for Interference

As discussed in Section (a)(1) and (2) above, interference with radio broadcast coverage is not anticipated. Facility wind turbines are sited outside the three-kilometer exclusion distance recommended for AM frequencies and within the *far field* region of radiating FM antennas near the Facility (see Appendix EEE).

As discussed in Section (a)(4), and (6)-(8) above, interference with first responder services, municipal/school district services, industrial/business land mobile sites, area-wide public safety, and mobile telephone communications are not anticipated. Each of these networks is designed to operate reliably in a non-line-of-sight environment. The frequencies of operation for these communication sources allow the signal to propagate through wind turbines. Moreover, land mobile systems are designed with overlap between base transmitter stations to maintain reception if the signal to one station is impeded (see Appendix GGG). In the unlikely event that interference does occur, it can be mitigated using the methods outlined in section (a)(6).

(d) Evaluation of Design Configuration

A map illustrating Facility components and relevant communication system constraints (e.g., Fresnel zones, radio station exclusion zones, etc.) is provided in Figure 26-1. The Facility has been designed to avoid impacts to communication systems to the extent practicable. In the unlikely event that the Facility has impacts on communications systems as discussed in sections (a)(3) (television), (a)(4) (telephone), or (a)(6) (emergency services), the Applicant will take appropriate steps to review and respond to the complaint as set forth in Section (e) below.

(e) Post-construction Activities to Identify and Mitigate Adverse Effects on Communication Systems

The Applicant takes seriously any complaints that it receives from members of the public concerning the impact of the Facility. As discussed in Exhibit 12, the Applicant has developed a Complaint Resolution Plan through which residents can make a formal complaint should any issues, such as degraded television service, arise because of construction or operation of the Facility. This Plan is attached as Appendix R. Complaints may be able to be made in person at the Facility's operation and maintenance building, via phone, or in writing via email or regular mail. The Applicant will contact the individual within 48 hours of receipt of the complaint and implement a multi-step complaint response for all complaints, which includes: (1) community engagement; (2) information gathering; (3) complaint tracking; (4) complaint response; (5) follow up after the response has been issued; and (6) further action, if the

complainant believes that the issue has not been satisfactorily resolved. The Applicant will log complaints in writing and supply copies of complaint-related information periodically to the New York State Department of Public Service.

If it is determined that Facility operation has impacted existing off-air television coverage, the Applicant will address each individual problem by analyzing on a case-by-case basis to determine the extent of the impact. After this analysis, the Applicant may offer cable television hookups or direct broadcast satellite reception systems (in areas where cable service is not available/practical) or investigate methods for improving the television reception system. It is important to note that both cable service and direct broadcast satellite service will be unaffected by the presence of the Facility (see Appendix FFF).

In addition, the tower structures identified in the Communication Tower Study (Appendix JJJ) could support the communications network needs of the Facility. For example, a Supervisory Control and Data Acquisition (SCADA) system could be implemented, which would monitor and provide communications access to the Facility.

(f) Potential Interference with Radar

As described above in Section (a)(9), the NTIA has reviewed the proposed Facility layout and provided a response (see Appendix DDD).

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