Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-881-OE
Prior Study No.
2021-WTE-4901-OE

Issued Date: 02/12/2025

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** MARKING & LIGHTING RECOMMENDATION ****

The Federal Aviation Administration has completed an evaluation of your request concerning:

Structure:	Wind Turbine T-68B
Location:	Wishek, ND
Latitude:	46-15-03.68N NAD 83
Longitude:	99-36-00.33W
Heights:	2108 feet site elevation (SE)
	599 feet above ground level (AGL)
	2707 feet above mean sea level (AMSL)

Based on this evaluation, we are unable to accommodate your request.

The structure should continue to be marked/lighted utilizing White Paint/Synchronized Red Lights.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

Your request for consideration to utilize an Aircraft Detection Lighting System to operate the recommended lighting is not approved. See attached for additional condition(s) or information.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed

and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This evaluation concerns the effect of the marking/lighting changes on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6051, or Christopher.evans@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-881-OE.

Signature Control No: 611179939-647316378 (MAL -WT)
Christopher Evans
Specialist

Attachment(s)
Additional Information
Map(s)

Due to the proximity of the structure to the Wishek Municipal Airport (6L5), the lights for this turbine must not be controlled by the ADLS system. To ensure the safety of aircraft engaged in low-level, agricultural and/or helicopter operations, the structure must remain marked and lighted in accordance with the original determination for this structure.

Sectional Map for ASN 2024-WTE-881-OE

Mail Processing Center
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Southwest Regional Office
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10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-881-OE
Prior Study No.
2021-WTE-4901-OE

Issued Date: 06/27/2024

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine T-68B
Location:	Wishek, ND
Latitude:	46-15-03.68N NAD 83
Longitude:	99-36-00.33W
Heights:	2108 feet site elevation (SE)
	599 feet above ground level (AGL)
	2707 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 12/27/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before July 27, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on August 06, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should

be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Buck Reynolds, at (847) 294-7576, or Wayne.Reynolds@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-881-OE.

Signature Control No: 611179939-625761120 (DNH -WT)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Map(s)

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

A list of commonly used acronyms and abbreviations is available at the end of this document. A full list is available at the FAA's public website at https://oeaaa.faa.gov/oeaaa/downloads/external/content/FAA_Acronyms.pdf .

1. PROPOSAL DESCRIPTION

Proposed are 103 wind turbines for a project that lies approximately 1.97 NM to 3.95 NM west southwest of the airport reference point (ARP) of the Wishek Municipal Airport (6L5), Wishek, ND., extending clockwise to 2.64 NM to 7.13NM west of the 65L ARP, extending further clockwise to 3.06 NM to 3.88 NM north northeast of the 6L5 ARP.

For the sake of efficiency, all of the wind turbines in this project that have similar impacts are included in this narrative. All 103 wind turbines have been identified as having aeronautical effects which are outlined in the summary below.

The proposed wind turbines' described heights and locations are expressed in Above Ground Level (AGL) height, Above Mean Sea Level (AMSL) height and latitude (LAT)/longitude (LONG).

ASN	AGL	AMSL	LAT	LONG
2024-WTE-822-OE	599	2646	46-22-20.66N	99-39-36.26W
2024-WTE-823-OE	599	2640	46-22-26.42N	99-39-13.76W
2024-WTE-824-OE	599	2632	46-22-36.21N	99-38-57.17W
2024-WTE-825-OE	599	2740	46-19-21.83N	99-39-32.80W
2024-WTE-826-OE	599	2747	46-19-23.07N	99-39-09.52W
2024-WTE-827-OE	599	2706	46-17-10.19N	99-40-51.13W
2024-WTE-828-OE	599	2697	46-17-10.68N	99-40-28.47W
2024-WTE-829-OE	599	2685	46-17-11.39N	99-40-06.89W
2024-WTE-830-OE	599	2678	46-17-11.11N	99-39-36.18W
2024-WTE-831-OE	599	2693	46-17-22.64N	99-39-25.48W
2024-WTE-832-OE	599	2690	46-17-29.68N	99-39-07.10W
2024-WTE-833-OE	599	2700	46-17-58.60N	99-38-23.17W
2024-WTE-834-OE	599	2686	46-18-08.88N	99-38-17.12W
2024-WTE-835-OE	599	2686	46-18-24.47N	99-38-08.84W
2024-WTE-836-OE	599	2723	46-18-33.83N	99-37-58.90W
2024-WTE-837-OE	599	2711	46-18-51.34N	99-37-56.34W
2024-WTE-838-OE	599	2680	46-19-03.07N	99-37-49.70W
2024-WTE-839-OE	599	2646	46-18-55.13N	99-37-14.54W

2024-WTE-840-OE / 599 / 2670 / 46-19-21.11N / 99-36-33.26W
2024-WTE-841-OE / 599 / 2683 / 46-16-41.24N / 99-39-25.45W

2024-WTE-842-OE / 599 / 2681 / 46-16-47.67N / 99-39-10.43W
2024-WTE-843-OE / 599 / 2660 / 46-16-42.79N / 99-38-39.53W
2024-WTE-844-OE / 599 / 2651 / 46-16-51.88N / 99-38-26.23W
2024-WTE-845-OE / 599 / 2651 / 46-17-04.98N / 99-38-05.59W
2024-WTE-846-OE / 599 / 2674 / 46-17-20.72N / 99-37-56.23W
2024-WTE-847-OE / 599 / 2680 / 46-17-30.61N / 99-37-43.17W
2024-WTE-848-OE / 599 / 2668 / 46-17-59.09N / 99-37-19.19W
2024-WTE-849-OE / 599 / 2640 / 46-18-26.22N / 99-37-04.35W
2024-WTE-850-OE / 599 / 2633 / 46-16-52.86N / 99-37-07.88W
2024-WTE-851-OE / 599 / 2657 / 46-17-09.39N / 99-37-00.77W

2024-WTE-852-OE / 599 / 2670 / 46-17-21.00N / 99-36-52.26W
2024-WTE-853-OE / 599 / 2646 / 46-17-31.39N / 99-36-41.62W
2024-WTE-854-OE / 599 / 2633 / 46-17-41.37N / 99-36-36.64W
2024-WTE-855-OE / 599 / 2628 / 46-17-58.38N / 99-36-24.07W
2024-WTE-856-OE / 599 / 2594 / 46-18-36.13N / 99-35-14.91W
2024-WTE-857-OE / 599 / 2604 / 46-18-50.64N / 99-35-16.10W
2024-WTE-858-OE / 599 / 2600 / 46-19-05.37N / 99-35-11.90W
2024-WTE-859-OE / 599 / 2763 / 46-14-48.82N / 99-38-37.69W
2024-WTE-860-OE / 599 / 2729 / 46-14-53.46N / 99-38-19.53W
2024-WTE-861-OE / 599 / 2714 / 46-15-13.35N / 99-38-09.39W

2024-WTE-862-OE / 599 / 2714 / 46-15-21.25N / 99-37-57.66W
2024-WTE-863-OE / 599 / 2668 / 46-16-05.27N / 99-37-12.34W
2024-WTE-864-OE / 599 / 2631 / 46-16-14.38N / 99-37-00.06W
2024-WTE-865-OE / 599 / 2665 / 46-16-06.44N / 99-36-17.92W
2024-WTE-866-OE / 599 / 2623 / 46-16-17.58N / 99-35-59.50W
2024-WTE-867-OE / 599 / 2697 / 46-18-03.60N / 99-32-51.05W
2024-WTE-868-OE / 599 / 2743 / 46-18-10.09N / 99-32-28.16W
2024-WTE-869-OE / 599 / 2776 / 46-18-21.17N / 99-32-15.37W
2024-WTE-870-OE / 599 / 2767 / 46-18-32.54N / 99-32-07.81W
2024-WTE-871-OE / 599 / 2768 / 46-18-40.20N / 99-31-52.51W

2024-WTE-872-OE / 599 / 2797 / 46-19-21.37N / 99-31-26.62W
2024-WTE-873-OE / 599 / 2737 / 46-19-43.23N / 99-30-46.28W
2024-WTE-874-OE / 599 / 2695 / 46-19-52.97N / 99-30-33.28W
2024-WTE-875-OE / 599 / 2707 / 46-20-07.36N / 99-30-54.18W
2024-WTE-876-OE / 599 / 2719 / 46-20-15.34N / 99-31-35.65W
2024-WTE-877-OE / 599 / 2667 / 46-20-40.93N / 99-30-23.57W
2024-WTE-878-OE / 599 / 2716 / 46-14-48.22N / 99-36-54.75W
2024-WTE-879-OE / 599 / 2710 / 46-14-54.01N / 99-36-38.28W
2024-WTE-880-OE / 599 / 2692 / 46-14-56.63N / 99-36-14.82W
2024-WTE-881-OE / 599 / 2707 / 46-15-03.68N / 99-36-00.33W

2024-WTE-882-OE / 599 / 2722 / 46-17-13.91N / 99-32-13.87W
2024-WTE-883-OE / 599 / 2702 / 46-17-22.64N / 99-32-04.75W

2024-WTE-884-OE / 599 / 2758 / 46-18-11.56N / 99-31-24.04W
2024-WTE-885-OE / 599 / 2700 / 46-17-57.69N / 99-30-26.08W
2024-WTE-886-OE / 599 / 2705 / 46-17-49.06N / 99-30-15.49W
2024-WTE-887-OE / 599 / 2730 / 46-18-34.37N / 99-30-18.50W
2024-WTE-888-OE / 599 / 2727 / 46-18-05.96N / 99-29-03.65W
2024-WTE-889-OE / 599 / 2813 / 46-13-27.26N / 99-36-54.27W
2024-WTE-890-OE / 599 / 2762 / 46-14-00.18N / 99-36-53.19W
2024-WTE-891-OE / 599 / 2755 / 46-14-12.01N / 99-36-39.97W

2024-WTE-892-OE / 599 / 2707 / 46-14-08.35N / 99-35-19.52W
2024-WTE-893-OE / 599 / 2679 / 46-14-08.50N / 99-34-57.21W
2024-WTE-894-OE / 599 / 2665 / 46-13-30.79N / 99-34-24.50W
2024-WTE-895-OE / 599 / 2718 / 46-16-17.48N / 99-29-27.65W
2024-WTE-896-OE / 599 / 2757 / 46-16-43.28N / 99-29-31.15W
2024-WTE-897-OE / 599 / 2750 / 46-17-06.97N / 99-29-29.96W
2024-WTE-898-OE / 599 / 2765 / 46-19-24.06N / 99-40-23.61W
2024-WTE-899-OE / 599 / 2773 / 46-19-27.25N / 99-40-05.97W
2024-WTE-900-OE / 599 / 2763 / 46-19-42.87N / 99-39-03.07W
2024-WTE-901-OE / 599 / 2715 / 46-17-33.19N / 99-40-19.03W

2024-WTE-902-OE / 599 / 2725 / 46-17-43.65N / 99-40-08.96W
2024-WTE-903-OE / 599 / 2715 / 46-18-00.37N / 99-40-08.19W
2024-WTE-904-OE / 599 / 2787 / 46-15-46.97N / 99-42-35.58W
2024-WTE-905-OE / 599 / 2790 / 46-15-49.35N / 99-42-16.32W
2024-WTE-906-OE / 599 / 2785 / 46-15-52.71N / 99-41-56.74W
2024-WTE-907-OE / 599 / 2781 / 46-15-48.50N / 99-40-57.22W
2024-WTE-908-OE / 599 / 2784 / 46-15-58.17N / 99-40-43.79W
2024-WTE-909-OE / 599 / 2784 / 46-16-03.44N / 99-40-24.98W
2024-WTE-910-OE / 599 / 2723 / 46-16-14.21N / 99-40-05.49W
2024-WTE-911-OE / 599 / 2712 / 46-16-14.70N / 99-39-43.12W

2024-WTE-912-OE / 599 / 2629 / 46-16-20.97N / 99-35-37.39W
2024-WTE-913-OE / 599 / 2827 / 46-13-09.40N / 99-37-26.04W
2024-WTE-914-OE / 599 / 2804 / 46-12-39.11N / 99-36-54.20W
2024-WTE-915-OE / 599 / 2809 / 46-12-50.95N / 99-36-45.69W
2024-WTE-916-OE / 599 / 2864 / 46-12-50.65N / 99-35-57.99W
2024-WTE-917-OE / 599 / 2823 / 46-12-11.58N / 99-35-33.44W
2024-WTE-918-OE / 599 / 2791 / 46-12-19.36N / 99-35-20.55W
2024-WTE-919-OE / 599 / 2749 / 46-12-20.98N / 99-35-00.78W
2024-WTE-920-OE / 599 / 2749 / 46-12-24.53N / 99-34-38.61W
2024-WTE-921-OE / 599 / 2751 / 46-12-48.50N / 99-34-25.28W

2024-WTE-922-OE / 599 / 2680 / 46-16-16.57N / 99-39-22.49W
2024-WTE-923-OE / 599 / 2827 / 46-13-15.45N / 99-37-02.58W
2024-WTE-924-OE / 599 / 2821 / 46-12-43.36N / 99-36-16.39W

2. TITLE 14 CFR PART 77 - OBSTRUCTION STANDARDS EXCEEDED

a. Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. The proposals would all exceed this standard by 100 feet.

b. Section 77.17(a)(2): A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 NM miles of the established reference point of 6L5, and that height increases in the proportion of 100 feet for each additional NM from the airport up to a maximum of 499 feet. The following would exceed by:

2024-WTE-829-OE	119 feet
2024-WTE-830-OE	152 feet
2024-WTE-831-OE	155 feet
2024-WTE-832-OE	169 feet
2024-WTE-833-OE	186 feet
2024-WTE-834-OE	181 feet
2024-WTE-835-OE	172 feet
2024-WTE-836-OE	171 feet
2024-WTE-837-OE	153 feet
2024-WTE-838-OE	144 feet
2024-WTE-839-OE	181 feet
2024-WTE-840-OE	175 feet
2024-WTE-841-OE	182 feet
2024-WTE-842-OE	194 feet
2024-WTE-843-OE	231 feet
2024-WTE-844-OE	239 feet
2024-WTE-845-OE	251 feet
2024-WTE-846-OE	247 feet
2024-WTE-847-OE	251 feet
2024-WTE-848-OE	244 feet
2024-WTE-849-OE	223 feet
2024-WTE-850-OE	310 feet
2024-WTE-851-OE	311 feet
2024-WTE-852-OE	308 feet
2024-WTE-853-OE	307 feet
2024-WTE-854-OE	291 feet
2024-WTE-855-OE	276 feet
2024-WTE-856-OE	238 feet
2024-WTE-857-OE	226 feet
2024-WTE-858-OE	202 feet
2024-WTE-859-OE	266 feet
2024-WTE-860-OE	287 feet
2024-WTE-861-OE	298 feet
2024-WTE-862-OE	310 feet
2024-WTE-863-OE	347 feet
2024-WTE-864-OE	344 feet
2024-WTE-865-OE	399 feet
2024-WTE-866-OE	380 feet

2024-WTE-867-OE	392 feet
2024-WTE-868-OE	383 feet
2024-WTE-869-OE	365 feet
2024-WTE-870-OE	346 feet
2024-WTE-871-OE	333 feet
2024-WTE-872-OE	261 feet
2024-WTE-873-OE	217 feet
2024-WTE-874-OE	198 feet
2024-WTE-875-OE	180 feet
2024-WTE-876-OE	173 feet
2024-WTE-877-OE	118 feet
2024-WTE-878-OE	384 feet
2024-WTE-879-OE	399 feet
2024-WTE-880-OE	399 feet
2024-WTE-881-OE	399 feet
2024-WTE-882-OE	399 feet
2024-WTE-883-OE	399 feet
2024-WTE-884-OE	376 feet
2024-WTE-885-OE	378 feet
2024-WTE-886-OE	386 feet
2024-WTE-887-OE	318 feet
2024-WTE-888-OE	319 feet
2024-WTE-889-OE	350 feet
2024-WTE-890-OE	372 feet
2024-WTE-891-OE	392 feet
2024-WTE-892-OE	399 feet
2024-WTE-893-OE	399 feet
2024-WTE-894-OE	399 feet
2024-WTE-895-OE	399 feet
2024-WTE-896-OE	399 feet
2024-WTE-897-OE	399 feet
2024-WTE-908-OE	112 feet
2024-WTE-909-OE	131 feet
2024-WTE-910-OE	150 feet
2024-WTE-911-OE	175 feet
2024-WTE-912-OE	387 feet
2024-WTE-913-OE	304 feet
2024-WTE-914-OE	309 feet
2024-WTE-915-OE	328 feet
2024-WTE-916-OE	372 feet
2024-WTE-917-OE	344 feet
2024-WTE-918-OE	364 feet
2024-WTE-919-OE	379 feet
2024-WTE-920-OE	398 feet

2024-WTE-921-OE 399 feet
2024-WTE-922-OE 197 feet
2024-WTE-923-OE 333 feet
2024-WTE-924-OE 347 feet
2024-WTE-926-OE 134 feet
2024-WTE-927-OE 144 feet
2024-WTE-928-OE 150 feet
2024-WTE-929-OE 150 feet

c. Section 77.17 (a)(3): A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

The following proposed turbines increase the Linton Municipal (7L2) Linton, ND. RNAV (GPS) RWY 27 ORIG-C, Minimum Safe Altitude (MSA) from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-898-OE
2024-WTE-899-OE
2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE

2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE

2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines increase the Linton Municipal (7L2) Linton ND. RNAV (GPS) RWY 9 ORIG-C, MSA from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE

2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines penetrate the Wishek Municipal (6L5) Wishek, ND., RWY 32 (PLAN on FILE) 40:1 departure surface by _____ feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES RWY 32, STD with a minimum climb gradient increase from an anticipated 200 to _____ feet per NM to _____ feet AMSL.

ASN	penetration in feet	feet per/NM	to feet AMSL
2024-WTE-847-OE	7	204	2900
2024-WTE-850-OE	56	222	2900
2024-WTE-851-OE	58	233	2900
2024-WTE-852-OE	89	232	2900
2024-WTE-853-OE	65	223	2900
2024-WTE-854-OE	31	222	2900
2024-WTE-862-OE	4	201	3000
2024-WTE-863-OE	76	234	2900
2024-WTE-864-OE	65	231	2900
2024-WTE-865-OE	13	295	2900
2024-WTE-866-OE	162	294	2900
2024-WTE-867-OE	211	306	3000
2024-WTE-868-OE	223	309	3000
2024-WTE-869-OE	220	303	3100
2024-WTE-870-OE	180	278	3000
2024-WTE-871-OE	150	262	3100
2024-WTE-872-OE	67	226	3100
2024-WTE-878-OE	40	224	3000
2024-WTE-879-OE	64	244	3000
2024-WTE-880-OE	85	264	2900
2024-WTE-881-OE	136	320	2900
2024-WTE-882-OE	234	418	2900
2024-WTE-883-OE	215	377	3000
2024-WTE-884-OE	157	298	3000
2024-WTE-885-OE	20	212	3000
2024-WTE-886-OE	14	208	3000
2024-WTE-887-OE	12	209	3000
2024-WTE-891-OE	24	214	3000
2024-WTE-892-OE	56	237	3000
2024-WTE-893-OE	61	245	2900
2024-WTE-896-OE	31	224	3000

2024-WTE-897-OE	17	211	3000
2024-WTE-912-OE	214	331	2900

The following proposed turbines would increase the Wishek Municipal Airport (6L5) Wishek, ND. minimum altitudes for the RNAV (GPS) RWY 14 (PROPOSED), LNAV MDA from an anticipated 2560 feet AMSL to as much as 2920 feet AMSL and the CAT A/B circling MDA from an anticipated 2560/2600 feet AMSL to as much as 2920 feet AMSL.

2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE

The following proposed turbines would increase the Minimum Vectoring Altitude (MVA) for Bismarck TRACON (BIS) Bismarck, ND., BIS_MVA_FUS3_2023 and BIS_MVA_FUS5_2023, Sector E from 3700 feet AMSL to 3800 feet AMSL.

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

d. Section 77.17(a)(4): A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.

The following proposed turbines would Increase the Minimum Obstruction Clearance Altitude (MOCA) along V15 from BISMARK (BIS) VORTAC, 117 degree radial to ABERDEEN (ABR) VORTAC from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-890-OE
2024-WTE-891-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

3. TITLE 14 CFR PART 77 - EFFECT ON AERONAUTICAL OPERATIONS

a. Section 77.29 (a)(1): impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At a height greater than 499 feet AGL, the proposed wind farm would extend into airspace normally used for VFR en route flight and may be located within 2 statute miles (SM) of potential VFR Routes as defined by FAA Order 7400.2, Section 6-3-8. The turbines within 2 SM of a VFR Route would have an adverse effect upon VFR air navigation. Further study was required to determine whether the proposed structures would have a substantial adverse effect on VFR operations.

4. TITLE 14 CFR PART 77 - FURTHER STUDY AND PUBLIC COMMENTS

In order to facilitate the public comment process, all 103 studies were circularized under ASN 2024-WTE-853-OE on 04/09/2024, to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. There was one comment received as a result of the circularization concluding on 05/16/2024. The comment(s) is summarized as follows:

Comments: We had Badger Wind, LLC remove 5 wind turbines from their plans in 2021 because they would interfere with our plans to add instrument approach to our airport in the future. I would like them to remove this wind turbine T-32 from their plans. It is to close to our airport. They have the whole country side to develop wind turbines, I do not understand why they want to place wind turbines this close to town and this close to an airport. Please do not allow them to place a tower this close to our airport.

FAA Response: The FAA study indicates that this turbine does not impact future airport plans other than the PLAN on FILE: Obstacle penetrates RWY 32 40:1 departure surface by 65 feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES, RWY 32, STD with a minimum climb gradient increase from anticipated 200 to 223 feet per NM to 2900 feet AMSL. The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. Additionally, the total IFR traffic counts for the 6L5 airport for the period of 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity.. Therefore, the proposed wind farm would not have a substantial adverse effect on IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Divion responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is a proposed TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) ruway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt ruway that would be an A(NP) runway, which is a utility ruway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.

5. BASIS FOR DETERMINATION

a. IFR EFFECTS

The aeronautical study identified an IFR effect(s) for 7L2, 6L5, BIS and V15. MSAs are the minimum obstacle clearance altitudes within a specified distance from the navigation facilities upon which procedures are predicated. MSA altitudes are designed for emergency use only and are not routinely used by pilots or by air traffic control. Consequently, MSAs are not circulated for public comment as they are not considered a factor in determining the extent of adverse effect.

MVAs are solely used by ATC, not published for public use and therefore are not circulated for public comment. A review by the controlling facility determined that increasing the altitude in the sector would ensure the required obstacle clearance is maintained and therefore would not have a substantial adverse effect on air traffic operations.

MOCAs assure obstacle clearance over the entire route segment to which they apply and assure navigational signal coverage within 22 NM of the associated VOR navigational facility. For that portion of the route

segment beyond 22 NM from the VOR, where the MOCA is lower than the MEA and there are no plans to lower the MEA to the MOCA, a structure that affects only the MOCA would not be considered to have substantial adverse effect. Other situations require study as ATC may assign altitudes down to the MOCA under certain conditions. Further study revealed that only the MOCA is effected in this area and that the MOCA is not routinely assigned by ATC.

The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. The total IFR traffic counts for 6L5 f from 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity. Therefore, the proposed wind farm would not have a substantial adverse effect on any IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Division responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is proposed as a TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) runway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt runway that would be an A(NP) runway, which is a utility runway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.
The proposed structures would have no effect on any other existing or proposed arrival, departure, or en route IFR operations or procedures.

b. VFR EFFECTS
The aeronautical study identified no effect on any existing or proposed VFR arrival or departure operations. The proposals would be located beyond the normal traffic pattern airspace for 6L5 and any other public use or military airport. At 599 feet AGL, the structures would be located within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm.

In accordance with FAA Order 7400.2, the proposed wind farm would not affect a significant volume of aircraft and therefore, it is determined they will not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

c. RADAR EFFECTS
The aeronautical study identified no effect on ATC radar, direction finders, ATC tower line-of-sight visibility, air navigation, communication facilities, and other surveillance systems for any known public-use or military airports.

d. CUMULATIVE EFFECT
The cumulative impact of the proposed structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any substantial adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposals affect the capacity of any known existing or planned public-use or military airport.

6. DETERMINATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation providing the conditions set forth in this determination are met.

7. CONDITIONS

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, sixty (60) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, ten (10) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE

2024-WTE-837-OE
2024-WTE-838-OE
2024-WTE-839-OE
2024-WTE-840-OE
2024-WTE-847-OE
2024-WTE-849-OE
2024-WTE-850-OE
2024-WTE-851-OE
2024-WTE-852-OE
2024-WTE-853-OE
2024-WTE-854-OE
2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-863-OE
2024-WTE-864-OE
2024-WTE-865-OE
2024-WTE-866-OE
2024-WTE-867-OE
2024-WTE-868-OE
2024-WTE-878-OE
2024-WTE-879-OE
2024-WTE-880-OE
2024-WTE-881-OE
2024-WTE-882-OE
2024-WTE-883-OE
2024-WTE-884-OE
2024-WTE-885-OE
2024-WTE-886-OE
2024-WTE-887-OE
2024-WTE-892-OE
2024-WTE-893-OE
2024-WTE-896-OE
2024-WTE-897-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-919-OE
2024-WTE-920-OE

Additionally, within five days after each project structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (https://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

****

ACRONYMS & ABBREVIATIONS
AGL, Above Ground Level
AMSL, Above Mean Sea Level
ARP, Airport Reference Point
ARSR, Air Route Surveillance Radar
ARTCC, Air Route Traffic Control Center
ASN, Aeronautical Study Number
ASR, Airport Surveillance Radar
ATC, Air Traffic Control
ATCT, Air Traffic Control Tower
CARSR, Common Air Route Surveillance Radar
CAT, Category
CFR, Code of Federal Regulations
CG, Climb Gradient
DA, Decision Altitude
DME, Distance Measuring Equipment
FAA, Federal Aviation Administration
FUS, Fusion
GPS, Global Positioning System
IAF, Initial Approach Fix
IAP, Instrument Approach Procedure
ICA, Initial Climb Area
IFR, Instrument Flight Rules
INT, Intersection
LAT, Latitude
LNAV, Lateral Navigation
LOC, Localizer
LONG, Longitude
LP, Localizer Performance
LPV, Localizer Performance with Vertical Guidance
MDA, Minimum Descent Altitude
MEA, Minimum En route Altitude
MET, Meteorological Evaluation Tower
MIA, Minimum IFR Altitude
Min, Minimum
MOCA, Minimum Obstruction Clearance Altitude
MSA, Minimum Safe Altitude
MSL, Mean Sea Level
MVA, Minimum Vectoring Altitude
NA, Not Authorized
NAS, National Airspace System

NAVAID, Navigational Aid
NDB, Non-Directional Radio Beacon
NEH, No Effect Height
NM, Nautical Mile
NOTAM, Notice to Airmen
NPF, Notice of Preliminary Findings
OCS, Obstacle Clearance Surface
OE, Obstruction Evaluation
OEG, Obstruction Evaluation Group
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace.
P-NOTAM, Permanent Notice to Airmen
RLOS, Radar Line of Sight
RNAV, Area Navigation
RNP, Required Navigation Performance
RWY, Runway
S-, Straight-in
SE, Site Elevation
S-LOC, Straight-in Localizer
SM, Statute Miles
Std., Standard
TAA, Terminal Arrival Area
TACAN, Tactical Air Navigation System
TERPS, Terminal Instrument Procedures
TPA, Traffic Pattern Airspace
TRACON, Terminal Radar Approach Control
V, Victor Airway
VFR, Visual Flight Rules
VHF, Very High Frequency
VOR, VHF Omnidirectional Radio Range System
VORTAC, VOR/TACAN System
WTE, Wind Turbine East
WTW, Wind Turbine West


2392
(270)
433
(300)
2265
Wishek
junkyard
28
2283
(256)
WISHEK MUNI (6L5)
2043 *L-34
122.9

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-882-OE
Prior Study No.
2022-WTE-1651-OE

Issued Date: 02/12/2025

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** MARKING & LIGHTING RECOMMENDATION ****

The Federal Aviation Administration has completed an evaluation of your request concerning:

Structure:	Wind Turbine T-70-A
Location:	Wishek, ND
Latitude:	46-17-13.91N NAD 83
Longitude:	99-32-13.87W
Heights:	2123 feet site elevation (SE)
	599 feet above ground level (AGL)
	2722 feet above mean sea level (AMSL)

Based on this evaluation, we are unable to accommodate your request.

The structure should continue to be marked/lighted utilizing White Paint/Synchronized Red Lights.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

Your request for consideration to utilize an Aircraft Detection Lighting System to operate the recommended lighting is not approved. See attached for additional condition(s) or information.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed

and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This evaluation concerns the effect of the marking/lighting changes on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6051, or Christopher.evans@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-882-OE.

Signature Control No: 611179940-647316364 (MAL -WT)
Christopher Evans
Specialist

Attachment(s)
Additional Information
Map(s)

Due to the proximity of the structure to the Wishek Municipal Airport (6L5), the lights for this turbine must not be controlled by the ADLS system. To ensure the safety of aircraft engaged in low-level, agricultural and/or helicopter operations, the structure must remain marked and lighted in accordance with the original determination for this structure.


2665
(422)
2392
(270)
2293
(254)
Lehr
Wishek
junkyard
2283
(256)
WISHEK MUNI (6L5)
2043 *L-34
122.9

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-882-OE
Prior Study No.
2022-WTE-1651-OE

Issued Date: 06/27/2024

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine T-70-A
Location:	Wishek, ND
Latitude:	46-17-13.91N NAD 83
Longitude:	99-32-13.87W
Heights:	2123 feet site elevation (SE)
	599 feet above ground level (AGL)
	2722 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 12/27/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before July 27, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on August 06, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should

be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Buck Reynolds, at (847) 294-7576, or Wayne.Reynolds@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-882-OE.

Signature Control No: 611179940-625761125 (DNH -WT)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Map(s)

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

A list of commonly used acronyms and abbreviations is available at the end of this document. A full list is available at the FAA's public website at https://oeaaa.faa.gov/oeaaa/downloads/external/content/FAA_Acronyms.pdf .

1. PROPOSAL DESCRIPTION

Proposed are 103 wind turbines for a project that lies approximately 1.97 NM to 3.95 NM west southwest of the airport reference point (ARP) of the Wishek Municipal Airport (6L5), Wishek, ND., extending clockwise to 2.64 NM to 7.13NM west of the 65L ARP, extending further clockwise to 3.06 NM to 3.88 NM north northeast of the 6L5 ARP.

For the sake of efficiency, all of the wind turbines in this project that have similar impacts are included in this narrative. All 103 wind turbines have been identified as having aeronautical effects which are outlined in the summary below.

The proposed wind turbines' described heights and locations are expressed in Above Ground Level (AGL) height, Above Mean Sea Level (AMSL) height and latitude (LAT)/longitude (LONG).

ASN	AGL	AMSL	LAT	LONG
2024-WTE-822-OE	599	2646	46-22-20.66N	99-39-36.26W
2024-WTE-823-OE	599	2640	46-22-26.42N	99-39-13.76W
2024-WTE-824-OE	599	2632	46-22-36.21N	99-38-57.17W
2024-WTE-825-OE	599	2740	46-19-21.83N	99-39-32.80W
2024-WTE-826-OE	599	2747	46-19-23.07N	99-39-09.52W
2024-WTE-827-OE	599	2706	46-17-10.19N	99-40-51.13W
2024-WTE-828-OE	599	2697	46-17-10.68N	99-40-28.47W
2024-WTE-829-OE	599	2685	46-17-11.39N	99-40-06.89W
2024-WTE-830-OE	599	2678	46-17-11.11N	99-39-36.18W
2024-WTE-831-OE	599	2693	46-17-22.64N	99-39-25.48W
2024-WTE-832-OE	599	2690	46-17-29.68N	99-39-07.10W
2024-WTE-833-OE	599	2700	46-17-58.60N	99-38-23.17W
2024-WTE-834-OE	599	2686	46-18-08.88N	99-38-17.12W
2024-WTE-835-OE	599	2686	46-18-24.47N	99-38-08.84W
2024-WTE-836-OE	599	2723	46-18-33.83N	99-37-58.90W
2024-WTE-837-OE	599	2711	46-18-51.34N	99-37-56.34W
2024-WTE-838-OE	599	2680	46-19-03.07N	99-37-49.70W
2024-WTE-839-OE	599	2646	46-18-55.13N	99-37-14.54W

2024-WTE-840-OE / 599 / 2670 / 46-19-21.11N / 99-36-33.26W
2024-WTE-841-OE / 599 / 2683 / 46-16-41.24N / 99-39-25.45W

2024-WTE-842-OE / 599 / 2681 / 46-16-47.67N / 99-39-10.43W
2024-WTE-843-OE / 599 / 2660 / 46-16-42.79N / 99-38-39.53W
2024-WTE-844-OE / 599 / 2651 / 46-16-51.88N / 99-38-26.23W
2024-WTE-845-OE / 599 / 2651 / 46-17-04.98N / 99-38-05.59W
2024-WTE-846-OE / 599 / 2674 / 46-17-20.72N / 99-37-56.23W
2024-WTE-847-OE / 599 / 2680 / 46-17-30.61N / 99-37-43.17W
2024-WTE-848-OE / 599 / 2668 / 46-17-59.09N / 99-37-19.19W
2024-WTE-849-OE / 599 / 2640 / 46-18-26.22N / 99-37-04.35W
2024-WTE-850-OE / 599 / 2633 / 46-16-52.86N / 99-37-07.88W
2024-WTE-851-OE / 599 / 2657 / 46-17-09.39N / 99-37-00.77W

2024-WTE-852-OE / 599 / 2670 / 46-17-21.00N / 99-36-52.26W
2024-WTE-853-OE / 599 / 2646 / 46-17-31.39N / 99-36-41.62W
2024-WTE-854-OE / 599 / 2633 / 46-17-41.37N / 99-36-36.64W
2024-WTE-855-OE / 599 / 2628 / 46-17-58.38N / 99-36-24.07W
2024-WTE-856-OE / 599 / 2594 / 46-18-36.13N / 99-35-14.91W
2024-WTE-857-OE / 599 / 2604 / 46-18-50.64N / 99-35-16.10W
2024-WTE-858-OE / 599 / 2600 / 46-19-05.37N / 99-35-11.90W
2024-WTE-859-OE / 599 / 2763 / 46-14-48.82N / 99-38-37.69W
2024-WTE-860-OE / 599 / 2729 / 46-14-53.46N / 99-38-19.53W
2024-WTE-861-OE / 599 / 2714 / 46-15-13.35N / 99-38-09.39W

2024-WTE-862-OE / 599 / 2714 / 46-15-21.25N / 99-37-57.66W
2024-WTE-863-OE / 599 / 2668 / 46-16-05.27N / 99-37-12.34W
2024-WTE-864-OE / 599 / 2631 / 46-16-14.38N / 99-37-00.06W
2024-WTE-865-OE / 599 / 2665 / 46-16-06.44N / 99-36-17.92W
2024-WTE-866-OE / 599 / 2623 / 46-16-17.58N / 99-35-59.50W
2024-WTE-867-OE / 599 / 2697 / 46-18-03.60N / 99-32-51.05W
2024-WTE-868-OE / 599 / 2743 / 46-18-10.09N / 99-32-28.16W
2024-WTE-869-OE / 599 / 2776 / 46-18-21.17N / 99-32-15.37W
2024-WTE-870-OE / 599 / 2767 / 46-18-32.54N / 99-32-07.81W
2024-WTE-871-OE / 599 / 2768 / 46-18-40.20N / 99-31-52.51W

2024-WTE-872-OE / 599 / 2797 / 46-19-21.37N / 99-31-26.62W
2024-WTE-873-OE / 599 / 2737 / 46-19-43.23N / 99-30-46.28W
2024-WTE-874-OE / 599 / 2695 / 46-19-52.97N / 99-30-33.28W
2024-WTE-875-OE / 599 / 2707 / 46-20-07.36N / 99-30-54.18W
2024-WTE-876-OE / 599 / 2719 / 46-20-15.34N / 99-31-35.65W
2024-WTE-877-OE / 599 / 2667 / 46-20-40.93N / 99-30-23.57W
2024-WTE-878-OE / 599 / 2716 / 46-14-48.22N / 99-36-54.75W
2024-WTE-879-OE / 599 / 2710 / 46-14-54.01N / 99-36-38.28W
2024-WTE-880-OE / 599 / 2692 / 46-14-56.63N / 99-36-14.82W
2024-WTE-881-OE / 599 / 2707 / 46-15-03.68N / 99-36-00.33W

2024-WTE-882-OE / 599 / 2722 / 46-17-13.91N / 99-32-13.87W
2024-WTE-883-OE / 599 / 2702 / 46-17-22.64N / 99-32-04.75W

2024-WTE-884-OE / 599 / 2758 / 46-18-11.56N / 99-31-24.04W
2024-WTE-885-OE / 599 / 2700 / 46-17-57.69N / 99-30-26.08W
2024-WTE-886-OE / 599 / 2705 / 46-17-49.06N / 99-30-15.49W
2024-WTE-887-OE / 599 / 2730 / 46-18-34.37N / 99-30-18.50W
2024-WTE-888-OE / 599 / 2727 / 46-18-05.96N / 99-29-03.65W
2024-WTE-889-OE / 599 / 2813 / 46-13-27.26N / 99-36-54.27W
2024-WTE-890-OE / 599 / 2762 / 46-14-00.18N / 99-36-53.19W
2024-WTE-891-OE / 599 / 2755 / 46-14-12.01N / 99-36-39.97W

2024-WTE-892-OE / 599 / 2707 / 46-14-08.35N / 99-35-19.52W
2024-WTE-893-OE / 599 / 2679 / 46-14-08.50N / 99-34-57.21W
2024-WTE-894-OE / 599 / 2665 / 46-13-30.79N / 99-34-24.50W
2024-WTE-895-OE / 599 / 2718 / 46-16-17.48N / 99-29-27.65W
2024-WTE-896-OE / 599 / 2757 / 46-16-43.28N / 99-29-31.15W
2024-WTE-897-OE / 599 / 2750 / 46-17-06.97N / 99-29-29.96W
2024-WTE-898-OE / 599 / 2765 / 46-19-24.06N / 99-40-23.61W
2024-WTE-899-OE / 599 / 2773 / 46-19-27.25N / 99-40-05.97W
2024-WTE-900-OE / 599 / 2763 / 46-19-42.87N / 99-39-03.07W
2024-WTE-901-OE / 599 / 2715 / 46-17-33.19N / 99-40-19.03W

2024-WTE-902-OE / 599 / 2725 / 46-17-43.65N / 99-40-08.96W
2024-WTE-903-OE / 599 / 2715 / 46-18-00.37N / 99-40-08.19W
2024-WTE-904-OE / 599 / 2787 / 46-15-46.97N / 99-42-35.58W
2024-WTE-905-OE / 599 / 2790 / 46-15-49.35N / 99-42-16.32W
2024-WTE-906-OE / 599 / 2785 / 46-15-52.71N / 99-41-56.74W
2024-WTE-907-OE / 599 / 2781 / 46-15-48.50N / 99-40-57.22W
2024-WTE-908-OE / 599 / 2784 / 46-15-58.17N / 99-40-43.79W
2024-WTE-909-OE / 599 / 2784 / 46-16-03.44N / 99-40-24.98W
2024-WTE-910-OE / 599 / 2723 / 46-16-14.21N / 99-40-05.49W
2024-WTE-911-OE / 599 / 2712 / 46-16-14.70N / 99-39-43.12W

2024-WTE-912-OE / 599 / 2629 / 46-16-20.97N / 99-35-37.39W
2024-WTE-913-OE / 599 / 2827 / 46-13-09.40N / 99-37-26.04W
2024-WTE-914-OE / 599 / 2804 / 46-12-39.11N / 99-36-54.20W
2024-WTE-915-OE / 599 / 2809 / 46-12-50.95N / 99-36-45.69W
2024-WTE-916-OE / 599 / 2864 / 46-12-50.65N / 99-35-57.99W
2024-WTE-917-OE / 599 / 2823 / 46-12-11.58N / 99-35-33.44W
2024-WTE-918-OE / 599 / 2791 / 46-12-19.36N / 99-35-20.55W
2024-WTE-919-OE / 599 / 2749 / 46-12-20.98N / 99-35-00.78W
2024-WTE-920-OE / 599 / 2749 / 46-12-24.53N / 99-34-38.61W
2024-WTE-921-OE / 599 / 2751 / 46-12-48.50N / 99-34-25.28W

2024-WTE-922-OE / 599 / 2680 / 46-16-16.57N / 99-39-22.49W
2024-WTE-923-OE / 599 / 2827 / 46-13-15.45N / 99-37-02.58W
2024-WTE-924-OE / 599 / 2821 / 46-12-43.36N / 99-36-16.39W

2. TITLE 14 CFR PART 77 - OBSTRUCTION STANDARDS EXCEEDED

a. Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. The proposals would all exceed this standard by 100 feet.

b. Section 77.17(a)(2): A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 NM miles of the established reference point of 6L5, and that height increases in the proportion of 100 feet for each additional NM from the airport up to a maximum of 499 feet. The following would exceed by:

2024-WTE-829-OE	119 feet
2024-WTE-830-OE	152 feet
2024-WTE-831-OE	155 feet
2024-WTE-832-OE	169 feet
2024-WTE-833-OE	186 feet
2024-WTE-834-OE	181 feet
2024-WTE-835-OE	172 feet
2024-WTE-836-OE	171 feet
2024-WTE-837-OE	153 feet
2024-WTE-838-OE	144 feet
2024-WTE-839-OE	181 feet
2024-WTE-840-OE	175 feet
2024-WTE-841-OE	182 feet
2024-WTE-842-OE	194 feet
2024-WTE-843-OE	231 feet
2024-WTE-844-OE	239 feet
2024-WTE-845-OE	251 feet
2024-WTE-846-OE	247 feet
2024-WTE-847-OE	251 feet
2024-WTE-848-OE	244 feet
2024-WTE-849-OE	223 feet
2024-WTE-850-OE	310 feet
2024-WTE-851-OE	311 feet
2024-WTE-852-OE	308 feet
2024-WTE-853-OE	307 feet
2024-WTE-854-OE	291 feet
2024-WTE-855-OE	276 feet
2024-WTE-856-OE	238 feet
2024-WTE-857-OE	226 feet
2024-WTE-858-OE	202 feet
2024-WTE-859-OE	266 feet
2024-WTE-860-OE	287 feet
2024-WTE-861-OE	298 feet
2024-WTE-862-OE	310 feet
2024-WTE-863-OE	347 feet
2024-WTE-864-OE	344 feet
2024-WTE-865-OE	399 feet
2024-WTE-866-OE	380 feet

2024-WTE-867-OE	392 feet
2024-WTE-868-OE	383 feet
2024-WTE-869-OE	365 feet
2024-WTE-870-OE	346 feet
2024-WTE-871-OE	333 feet
2024-WTE-872-OE	261 feet
2024-WTE-873-OE	217 feet
2024-WTE-874-OE	198 feet
2024-WTE-875-OE	180 feet
2024-WTE-876-OE	173 feet
2024-WTE-877-OE	118 feet
2024-WTE-878-OE	384 feet
2024-WTE-879-OE	399 feet
2024-WTE-880-OE	399 feet
2024-WTE-881-OE	399 feet
2024-WTE-882-OE	399 feet
2024-WTE-883-OE	399 feet
2024-WTE-884-OE	376 feet
2024-WTE-885-OE	378 feet
2024-WTE-886-OE	386 feet
2024-WTE-887-OE	318 feet
2024-WTE-888-OE	319 feet
2024-WTE-889-OE	350 feet
2024-WTE-890-OE	372 feet
2024-WTE-891-OE	392 feet
2024-WTE-892-OE	399 feet
2024-WTE-893-OE	399 feet
2024-WTE-894-OE	399 feet
2024-WTE-895-OE	399 feet
2024-WTE-896-OE	399 feet
2024-WTE-897-OE	399 feet
2024-WTE-908-OE	112 feet
2024-WTE-909-OE	131 feet
2024-WTE-910-OE	150 feet
2024-WTE-911-OE	175 feet
2024-WTE-912-OE	387 feet
2024-WTE-913-OE	304 feet
2024-WTE-914-OE	309 feet
2024-WTE-915-OE	328 feet
2024-WTE-916-OE	372 feet
2024-WTE-917-OE	344 feet
2024-WTE-918-OE	364 feet
2024-WTE-919-OE	379 feet
2024-WTE-920-OE	398 feet

2024-WTE-921-OE 399 feet
2024-WTE-922-OE 197 feet
2024-WTE-923-OE 333 feet
2024-WTE-924-OE 347 feet
2024-WTE-926-OE 134 feet
2024-WTE-927-OE 144 feet
2024-WTE-928-OE 150 feet
2024-WTE-929-OE 150 feet

c. Section 77.17 (a)(3): A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

The following proposed turbines increase the Linton Municipal (7L2) Linton, ND. RNAV (GPS) RWY 27 ORIG-C, Minimum Safe Altitude (MSA) from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-898-OE
2024-WTE-899-OE
2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE

2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE

2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines increase the Linton Municipal (7L2) Linton ND. RNAV (GPS) RWY 9 ORIG-C, MSA from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE

2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines penetrate the Wishek Municipal (6L5) Wishek, ND., RWY 32 (PLAN on FILE) 40:1 departure surface by _____ feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES RWY 32, STD with a minimum climb gradient increase from an anticipated 200 to _____ feet per NM to _____ feet AMSL.

ASN	penetration in feet	feet per/NM	to feet AMSL
2024-WTE-847-OE	7	204	2900
2024-WTE-850-OE	56	222	2900
2024-WTE-851-OE	58	233	2900
2024-WTE-852-OE	89	232	2900
2024-WTE-853-OE	65	223	2900
2024-WTE-854-OE	31	222	2900
2024-WTE-862-OE	4	201	3000
2024-WTE-863-OE	76	234	2900
2024-WTE-864-OE	65	231	2900
2024-WTE-865-OE	13	295	2900
2024-WTE-866-OE	162	294	2900
2024-WTE-867-OE	211	306	3000
2024-WTE-868-OE	223	309	3000
2024-WTE-869-OE	220	303	3100
2024-WTE-870-OE	180	278	3000
2024-WTE-871-OE	150	262	3100
2024-WTE-872-OE	67	226	3100
2024-WTE-878-OE	40	224	3000
2024-WTE-879-OE	64	244	3000
2024-WTE-880-OE	85	264	2900
2024-WTE-881-OE	136	320	2900
2024-WTE-882-OE	234	418	2900
2024-WTE-883-OE	215	377	3000
2024-WTE-884-OE	157	298	3000
2024-WTE-885-OE	20	212	3000
2024-WTE-886-OE	14	208	3000
2024-WTE-887-OE	12	209	3000
2024-WTE-891-OE	24	214	3000
2024-WTE-892-OE	56	237	3000
2024-WTE-893-OE	61	245	2900
2024-WTE-896-OE	31	224	3000

2024-WTE-897-OE	17	211	3000
2024-WTE-912-OE	214	331	2900

The following proposed turbines would increase the Wishek Municipal Airport (6L5) Wishek, ND. minimum altitudes for the RNAV (GPS) RWY 14 (PROPOSED), LNAV MDA from an anticipated 2560 feet AMSL to as much as 2920 feet AMSL and the CAT A/B circling MDA from an anticipated 2560/2600 feet AMSL to as much as 2920 feet AMSL.

2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE

The following proposed turbines would increase the Minimum Vectoring Altitude (MVA) for Bismarck TRACON (BIS) Bismarck, ND., BIS_MVA_FUS3_2023 and BIS_MVA_FUS5_2023, Sector E from 3700 feet AMSL to 3800 feet AMSL.

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

d. Section 77.17(a)(4): A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.

The following proposed turbines would Increase the Minimum Obstruction Clearance Altitude (MOCA) along V15 from BISMARK (BIS) VORTAC, 117 degree radial to ABERDEEN (ABR) VORTAC from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-890-OE
2024-WTE-891-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

3. TITLE 14 CFR PART 77 - EFFECT ON AERONAUTICAL OPERATIONS

a. Section 77.29 (a)(1): impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At a height greater than 499 feet AGL, the proposed wind farm would extend into airspace normally used for VFR en route flight and may be located within 2 statute miles (SM) of potential VFR Routes as defined by FAA Order 7400.2, Section 6-3-8. The turbines within 2 SM of a VFR Route would have an adverse effect upon VFR air navigation. Further study was required to determine whether the proposed structures would have a substantial adverse effect on VFR operations.

4. TITLE 14 CFR PART 77 - FURTHER STUDY AND PUBLIC COMMENTS

In order to facilitate the public comment process, all 103 studies were circularized under ASN 2024-WTE-853-OE on 04/09/2024, to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. There was one comment received as a result of the circularization concluding on 05/16/2024. The comment(s) is summarized as follows:

Comments: We had Badger Wind, LLC remove 5 wind turbines from their plans in 2021 because they would interfere with our plans to add instrument approach to our airport in the future. I would like them to remove this wind turbine T-32 from their plans. It is to close to our airport. They have the whole country side to develop wind turbines, I do not understand why they want to place wind turbines this close to town and this close to an airport. Please do not allow them to place a tower this close to our airport.

FAA Response: The FAA study indicates that this turbine does not impact future airport plans other than the PLAN on FILE: Obstacle penetrates RWY 32 40:1 departure surface by 65 feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES, RWY 32, STD with a minimum climb gradient increase from anticipated 200 to 223 feet per NM to 2900 feet AMSL. The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. Additionally, the total IFR traffic counts for the 6L5 airport for the period of 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity.. Therefore, the proposed wind farm would not have a substantial adverse effect on IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Divion responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is a proposed TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) ruway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt ruway that would be an A(NP) runway, which is a utility ruway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.

5. BASIS FOR DETERMINATION

a. IFR EFFECTS

The aeronautical study identified an IFR effect(s) for 7L2, 6L5, BIS and V15. MSAs are the minimum obstacle clearance altitudes within a specified distance from the navigation facilities upon which procedures are predicated. MSA altitudes are designed for emergency use only and are not routinely used by pilots or by air traffic control. Consequently, MSAs are not circulated for public comment as they are not considered a factor in determining the extent of adverse effect.

MVAs are solely used by ATC, not published for public use and therefore are not circulated for public comment. A review by the controlling facility determined that increasing the altitude in the sector would ensure the required obstacle clearance is maintained and therefore would not have a substantial adverse effect on air traffic operations.

MOCAs assure obstacle clearance over the entire route segment to which they apply and assure navigational signal coverage within 22 NM of the associated VOR navigational facility. For that portion of the route

segment beyond 22 NM from the VOR, where the MOCA is lower than the MEA and there are no plans to lower the MEA to the MOCA, a structure that affects only the MOCA would not be considered to have substantial adverse effect. Other situations require study as ATC may assign altitudes down to the MOCA under certain conditions. Further study revealed that only the MOCA is effected in this area and that the MOCA is not routinely assigned by ATC.

The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. The total IFR traffic counts for 6L5 f from 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity. Therefore, the proposed wind farm would not have a substantial adverse effect on any IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Division responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is proposed as a TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) runway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt runway that would be an A(NP) runway, which is a utility runway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.
The proposed structures would have no effect on any other existing or proposed arrival, departure, or en route IFR operations or procedures.

b. VFR EFFECTS
The aeronautical study identified no effect on any existing or proposed VFR arrival or departure operations. The proposals would be located beyond the normal traffic pattern airspace for 6L5 and any other public use or military airport. At 599 feet AGL, the structures would be located within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm.

In accordance with FAA Order 7400.2, the proposed wind farm would not affect a significant volume of aircraft and therefore, it is determined they will not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

c. RADAR EFFECTS
The aeronautical study identified no effect on ATC radar, direction finders, ATC tower line-of-sight visibility, air navigation, communication facilities, and other surveillance systems for any known public-use or military airports.

d. CUMULATIVE EFFECT
The cumulative impact of the proposed structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any substantial adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposals affect the capacity of any known existing or planned public-use or military airport.

6. DETERMINATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation providing the conditions set forth in this determination are met.

7. CONDITIONS

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, sixty (60) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, ten (10) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE

2024-WTE-837-OE
2024-WTE-838-OE
2024-WTE-839-OE
2024-WTE-840-OE
2024-WTE-847-OE
2024-WTE-849-OE
2024-WTE-850-OE
2024-WTE-851-OE
2024-WTE-852-OE
2024-WTE-853-OE
2024-WTE-854-OE
2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-863-OE
2024-WTE-864-OE
2024-WTE-865-OE
2024-WTE-866-OE
2024-WTE-867-OE
2024-WTE-868-OE
2024-WTE-878-OE
2024-WTE-879-OE
2024-WTE-880-OE
2024-WTE-881-OE
2024-WTE-882-OE
2024-WTE-883-OE
2024-WTE-884-OE
2024-WTE-885-OE
2024-WTE-886-OE
2024-WTE-887-OE
2024-WTE-892-OE
2024-WTE-893-OE
2024-WTE-896-OE
2024-WTE-897-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-919-OE
2024-WTE-920-OE

Additionally, within five days after each project structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (https://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

****

ACRONYMS & ABBREVIATIONS
AGL, Above Ground Level
AMSL, Above Mean Sea Level
ARP, Airport Reference Point
ARSR, Air Route Surveillance Radar
ARTCC, Air Route Traffic Control Center
ASN, Aeronautical Study Number
ASR, Airport Surveillance Radar
ATC, Air Traffic Control
ATCT, Air Traffic Control Tower
CARSR, Common Air Route Surveillance Radar
CAT, Category
CFR, Code of Federal Regulations
CG, Climb Gradient
DA, Decision Altitude
DME, Distance Measuring Equipment
FAA, Federal Aviation Administration
FUS, Fusion
GPS, Global Positioning System
IAF, Initial Approach Fix
IAP, Instrument Approach Procedure
ICA, Initial Climb Area
IFR, Instrument Flight Rules
INT, Intersection
LAT, Latitude
LNAV, Lateral Navigation
LOC, Localizer
LONG, Longitude
LP, Localizer Performance
LPV, Localizer Performance with Vertical Guidance
MDA, Minimum Descent Altitude
MEA, Minimum En route Altitude
MET, Meteorological Evaluation Tower
MIA, Minimum IFR Altitude
Min, Minimum
MOCA, Minimum Obstruction Clearance Altitude
MSA, Minimum Safe Altitude
MSL, Mean Sea Level
MVA, Minimum Vectoring Altitude
NA, Not Authorized
NAS, National Airspace System

NAVAID, Navigational Aid
NDB, Non-Directional Radio Beacon
NEH, No Effect Height
NM, Nautical Mile
NOTAM, Notice to Airmen
NPF, Notice of Preliminary Findings
OCS, Obstacle Clearance Surface
OE, Obstruction Evaluation
OEG, Obstruction Evaluation Group
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace.
P-NOTAM, Permanent Notice to Airmen
RLOS, Radar Line of Sight
RNAV, Area Navigation
RNP, Required Navigation Performance
RWY, Runway
S-, Straight-in
SE, Site Elevation
S-LOC, Straight-in Localizer
SM, Statute Miles
Std., Standard
TAA, Terminal Arrival Area
TACAN, Tactical Air Navigation System
TERPS, Terminal Instrument Procedures
TPA, Traffic Pattern Airspace
TRACON, Terminal Radar Approach Control
V, Victor Airway
VFR, Visual Flight Rules
VHF, Very High Frequency
VOR, VHF Omnidirectional Radio Range System
VORTAC, VOR/TACAN System
WTE, Wind Turbine East
WTW, Wind Turbine West


2665
(422)
2392
(270)
2293
(254)
Lehr
Wishek
junkyard
2283
(256)
WISHEK MUNI (6L5)
2043 *L-34
122.9

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-893-OE
Prior Study No.
2021-WTE-4936-OE

Issued Date: 02/12/2025

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** MARKING & LIGHTING RECOMMENDATION ****

The Federal Aviation Administration has completed an evaluation of your request concerning:

Structure:	Wind Turbine T-80
Location:	Wishek, ND
Latitude:	46-14-08.50N NAD 83
Longitude:	99-34-57.21W
Heights:	2080 feet site elevation (SE)
	599 feet above ground level (AGL)
	2679 feet above mean sea level (AMSL)

Based on this evaluation, we are unable to accommodate your request.

The structure should continue to be marked/lighted utilizing White Paint/Synchronized Red Lights.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

Your request for consideration to utilize an Aircraft Detection Lighting System to operate the recommended lighting is not approved. See attached for additional condition(s) or information.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed

and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This evaluation concerns the effect of the marking/lighting changes on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6051, or Christopher.evans@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-893-OE.

Signature Control No: 611179955-647316376 (MAL -WT)
Christopher Evans
Specialist

Attachment(s)
Additional Information
Map(s)

Due to the proximity of the structure to the Wishek Municipal Airport (6L5), the lights for this turbine must not be controlled by the ADLS system. To ensure the safety of aircraft engaged in low-level, agricultural and/or helicopter operations, the structure must remain marked and lighted in accordance with the original determination for this structure.

Sectional Map for ASN 2024-WTE-893-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-893-OE
Prior Study No.
2021-WTE-4936-OE

Issued Date: 06/27/2024

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine T-80
Location:	Wishek, ND
Latitude:	46-14-08.50N NAD 83
Longitude:	99-34-57.21W
Heights:	2080 feet site elevation (SE)
	599 feet above ground level (AGL)
	2679 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 12/27/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before July 27, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on August 06, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should

be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Buck Reynolds, at (847) 294-7576, or Wayne.Reynolds@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-893-OE.

Signature Control No: 611179955-625761208 (DNH -WT)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Map(s)

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

A list of commonly used acronyms and abbreviations is available at the end of this document. A full list is available at the FAA's public website at https://oeaaa.faa.gov/oeaaa/downloads/external/content/FAA_Acronyms.pdf .

1. PROPOSAL DESCRIPTION

Proposed are 103 wind turbines for a project that lies approximately 1.97 NM to 3.95 NM west southwest of the airport reference point (ARP) of the Wishek Municipal Airport (6L5), Wishek, ND., extending clockwise to 2.64 NM to 7.13NM west of the 65L ARP, extending further clockwise to 3.06 NM to 3.88 NM north northeast of the 6L5 ARP.

For the sake of efficiency, all of the wind turbines in this project that have similar impacts are included in this narrative. All 103 wind turbines have been identified as having aeronautical effects which are outlined in the summary below.

The proposed wind turbines' described heights and locations are expressed in Above Ground Level (AGL) height, Above Mean Sea Level (AMSL) height and latitude (LAT)/longitude (LONG).

ASN	AGL	AMSL	LAT	LONG
2024-WTE-822-OE	599	2646	46-22-20.66N	99-39-36.26W
2024-WTE-823-OE	599	2640	46-22-26.42N	99-39-13.76W
2024-WTE-824-OE	599	2632	46-22-36.21N	99-38-57.17W
2024-WTE-825-OE	599	2740	46-19-21.83N	99-39-32.80W
2024-WTE-826-OE	599	2747	46-19-23.07N	99-39-09.52W
2024-WTE-827-OE	599	2706	46-17-10.19N	99-40-51.13W
2024-WTE-828-OE	599	2697	46-17-10.68N	99-40-28.47W
2024-WTE-829-OE	599	2685	46-17-11.39N	99-40-06.89W
2024-WTE-830-OE	599	2678	46-17-11.11N	99-39-36.18W
2024-WTE-831-OE	599	2693	46-17-22.64N	99-39-25.48W
2024-WTE-832-OE	599	2690	46-17-29.68N	99-39-07.10W
2024-WTE-833-OE	599	2700	46-17-58.60N	99-38-23.17W
2024-WTE-834-OE	599	2686	46-18-08.88N	99-38-17.12W
2024-WTE-835-OE	599	2686	46-18-24.47N	99-38-08.84W
2024-WTE-836-OE	599	2723	46-18-33.83N	99-37-58.90W
2024-WTE-837-OE	599	2711	46-18-51.34N	99-37-56.34W
2024-WTE-838-OE	599	2680	46-19-03.07N	99-37-49.70W
2024-WTE-839-OE	599	2646	46-18-55.13N	99-37-14.54W

2024-WTE-840-OE / 599 / 2670 / 46-19-21.11N / 99-36-33.26W
2024-WTE-841-OE / 599 / 2683 / 46-16-41.24N / 99-39-25.45W

2024-WTE-842-OE / 599 / 2681 / 46-16-47.67N / 99-39-10.43W
2024-WTE-843-OE / 599 / 2660 / 46-16-42.79N / 99-38-39.53W
2024-WTE-844-OE / 599 / 2651 / 46-16-51.88N / 99-38-26.23W
2024-WTE-845-OE / 599 / 2651 / 46-17-04.98N / 99-38-05.59W
2024-WTE-846-OE / 599 / 2674 / 46-17-20.72N / 99-37-56.23W
2024-WTE-847-OE / 599 / 2680 / 46-17-30.61N / 99-37-43.17W
2024-WTE-848-OE / 599 / 2668 / 46-17-59.09N / 99-37-19.19W
2024-WTE-849-OE / 599 / 2640 / 46-18-26.22N / 99-37-04.35W
2024-WTE-850-OE / 599 / 2633 / 46-16-52.86N / 99-37-07.88W
2024-WTE-851-OE / 599 / 2657 / 46-17-09.39N / 99-37-00.77W

2024-WTE-852-OE / 599 / 2670 / 46-17-21.00N / 99-36-52.26W
2024-WTE-853-OE / 599 / 2646 / 46-17-31.39N / 99-36-41.62W
2024-WTE-854-OE / 599 / 2633 / 46-17-41.37N / 99-36-36.64W
2024-WTE-855-OE / 599 / 2628 / 46-17-58.38N / 99-36-24.07W
2024-WTE-856-OE / 599 / 2594 / 46-18-36.13N / 99-35-14.91W
2024-WTE-857-OE / 599 / 2604 / 46-18-50.64N / 99-35-16.10W
2024-WTE-858-OE / 599 / 2600 / 46-19-05.37N / 99-35-11.90W
2024-WTE-859-OE / 599 / 2763 / 46-14-48.82N / 99-38-37.69W
2024-WTE-860-OE / 599 / 2729 / 46-14-53.46N / 99-38-19.53W
2024-WTE-861-OE / 599 / 2714 / 46-15-13.35N / 99-38-09.39W

2024-WTE-862-OE / 599 / 2714 / 46-15-21.25N / 99-37-57.66W
2024-WTE-863-OE / 599 / 2668 / 46-16-05.27N / 99-37-12.34W
2024-WTE-864-OE / 599 / 2631 / 46-16-14.38N / 99-37-00.06W
2024-WTE-865-OE / 599 / 2665 / 46-16-06.44N / 99-36-17.92W
2024-WTE-866-OE / 599 / 2623 / 46-16-17.58N / 99-35-59.50W
2024-WTE-867-OE / 599 / 2697 / 46-18-03.60N / 99-32-51.05W
2024-WTE-868-OE / 599 / 2743 / 46-18-10.09N / 99-32-28.16W
2024-WTE-869-OE / 599 / 2776 / 46-18-21.17N / 99-32-15.37W
2024-WTE-870-OE / 599 / 2767 / 46-18-32.54N / 99-32-07.81W
2024-WTE-871-OE / 599 / 2768 / 46-18-40.20N / 99-31-52.51W

2024-WTE-872-OE / 599 / 2797 / 46-19-21.37N / 99-31-26.62W
2024-WTE-873-OE / 599 / 2737 / 46-19-43.23N / 99-30-46.28W
2024-WTE-874-OE / 599 / 2695 / 46-19-52.97N / 99-30-33.28W
2024-WTE-875-OE / 599 / 2707 / 46-20-07.36N / 99-30-54.18W
2024-WTE-876-OE / 599 / 2719 / 46-20-15.34N / 99-31-35.65W
2024-WTE-877-OE / 599 / 2667 / 46-20-40.93N / 99-30-23.57W
2024-WTE-878-OE / 599 / 2716 / 46-14-48.22N / 99-36-54.75W
2024-WTE-879-OE / 599 / 2710 / 46-14-54.01N / 99-36-38.28W
2024-WTE-880-OE / 599 / 2692 / 46-14-56.63N / 99-36-14.82W
2024-WTE-881-OE / 599 / 2707 / 46-15-03.68N / 99-36-00.33W

2024-WTE-882-OE / 599 / 2722 / 46-17-13.91N / 99-32-13.87W
2024-WTE-883-OE / 599 / 2702 / 46-17-22.64N / 99-32-04.75W

2024-WTE-884-OE / 599 / 2758 / 46-18-11.56N / 99-31-24.04W
2024-WTE-885-OE / 599 / 2700 / 46-17-57.69N / 99-30-26.08W
2024-WTE-886-OE / 599 / 2705 / 46-17-49.06N / 99-30-15.49W
2024-WTE-887-OE / 599 / 2730 / 46-18-34.37N / 99-30-18.50W
2024-WTE-888-OE / 599 / 2727 / 46-18-05.96N / 99-29-03.65W
2024-WTE-889-OE / 599 / 2813 / 46-13-27.26N / 99-36-54.27W
2024-WTE-890-OE / 599 / 2762 / 46-14-00.18N / 99-36-53.19W
2024-WTE-891-OE / 599 / 2755 / 46-14-12.01N / 99-36-39.97W

2024-WTE-892-OE / 599 / 2707 / 46-14-08.35N / 99-35-19.52W
2024-WTE-893-OE / 599 / 2679 / 46-14-08.50N / 99-34-57.21W
2024-WTE-894-OE / 599 / 2665 / 46-13-30.79N / 99-34-24.50W
2024-WTE-895-OE / 599 / 2718 / 46-16-17.48N / 99-29-27.65W
2024-WTE-896-OE / 599 / 2757 / 46-16-43.28N / 99-29-31.15W
2024-WTE-897-OE / 599 / 2750 / 46-17-06.97N / 99-29-29.96W
2024-WTE-898-OE / 599 / 2765 / 46-19-24.06N / 99-40-23.61W
2024-WTE-899-OE / 599 / 2773 / 46-19-27.25N / 99-40-05.97W
2024-WTE-900-OE / 599 / 2763 / 46-19-42.87N / 99-39-03.07W
2024-WTE-901-OE / 599 / 2715 / 46-17-33.19N / 99-40-19.03W

2024-WTE-902-OE / 599 / 2725 / 46-17-43.65N / 99-40-08.96W
2024-WTE-903-OE / 599 / 2715 / 46-18-00.37N / 99-40-08.19W
2024-WTE-904-OE / 599 / 2787 / 46-15-46.97N / 99-42-35.58W
2024-WTE-905-OE / 599 / 2790 / 46-15-49.35N / 99-42-16.32W
2024-WTE-906-OE / 599 / 2785 / 46-15-52.71N / 99-41-56.74W
2024-WTE-907-OE / 599 / 2781 / 46-15-48.50N / 99-40-57.22W
2024-WTE-908-OE / 599 / 2784 / 46-15-58.17N / 99-40-43.79W
2024-WTE-909-OE / 599 / 2784 / 46-16-03.44N / 99-40-24.98W
2024-WTE-910-OE / 599 / 2723 / 46-16-14.21N / 99-40-05.49W
2024-WTE-911-OE / 599 / 2712 / 46-16-14.70N / 99-39-43.12W

2024-WTE-912-OE / 599 / 2629 / 46-16-20.97N / 99-35-37.39W
2024-WTE-913-OE / 599 / 2827 / 46-13-09.40N / 99-37-26.04W
2024-WTE-914-OE / 599 / 2804 / 46-12-39.11N / 99-36-54.20W
2024-WTE-915-OE / 599 / 2809 / 46-12-50.95N / 99-36-45.69W
2024-WTE-916-OE / 599 / 2864 / 46-12-50.65N / 99-35-57.99W
2024-WTE-917-OE / 599 / 2823 / 46-12-11.58N / 99-35-33.44W
2024-WTE-918-OE / 599 / 2791 / 46-12-19.36N / 99-35-20.55W
2024-WTE-919-OE / 599 / 2749 / 46-12-20.98N / 99-35-00.78W
2024-WTE-920-OE / 599 / 2749 / 46-12-24.53N / 99-34-38.61W
2024-WTE-921-OE / 599 / 2751 / 46-12-48.50N / 99-34-25.28W

2024-WTE-922-OE / 599 / 2680 / 46-16-16.57N / 99-39-22.49W
2024-WTE-923-OE / 599 / 2827 / 46-13-15.45N / 99-37-02.58W
2024-WTE-924-OE / 599 / 2821 / 46-12-43.36N / 99-36-16.39W

2. TITLE 14 CFR PART 77 - OBSTRUCTION STANDARDS EXCEEDED

a. Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. The proposals would all exceed this standard by 100 feet.

b. Section 77.17(a)(2): A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 NM miles of the established reference point of 6L5, and that height increases in the proportion of 100 feet for each additional NM from the airport up to a maximum of 499 feet. The following would exceed by:

2024-WTE-829-OE	119 feet
2024-WTE-830-OE	152 feet
2024-WTE-831-OE	155 feet
2024-WTE-832-OE	169 feet
2024-WTE-833-OE	186 feet
2024-WTE-834-OE	181 feet
2024-WTE-835-OE	172 feet
2024-WTE-836-OE	171 feet
2024-WTE-837-OE	153 feet
2024-WTE-838-OE	144 feet
2024-WTE-839-OE	181 feet
2024-WTE-840-OE	175 feet
2024-WTE-841-OE	182 feet
2024-WTE-842-OE	194 feet
2024-WTE-843-OE	231 feet
2024-WTE-844-OE	239 feet
2024-WTE-845-OE	251 feet
2024-WTE-846-OE	247 feet
2024-WTE-847-OE	251 feet
2024-WTE-848-OE	244 feet
2024-WTE-849-OE	223 feet
2024-WTE-850-OE	310 feet
2024-WTE-851-OE	311 feet
2024-WTE-852-OE	308 feet
2024-WTE-853-OE	307 feet
2024-WTE-854-OE	291 feet
2024-WTE-855-OE	276 feet
2024-WTE-856-OE	238 feet
2024-WTE-857-OE	226 feet
2024-WTE-858-OE	202 feet
2024-WTE-859-OE	266 feet
2024-WTE-860-OE	287 feet
2024-WTE-861-OE	298 feet
2024-WTE-862-OE	310 feet
2024-WTE-863-OE	347 feet
2024-WTE-864-OE	344 feet
2024-WTE-865-OE	399 feet
2024-WTE-866-OE	380 feet

2024-WTE-867-OE	392 feet
2024-WTE-868-OE	383 feet
2024-WTE-869-OE	365 feet
2024-WTE-870-OE	346 feet
2024-WTE-871-OE	333 feet
2024-WTE-872-OE	261 feet
2024-WTE-873-OE	217 feet
2024-WTE-874-OE	198 feet
2024-WTE-875-OE	180 feet
2024-WTE-876-OE	173 feet
2024-WTE-877-OE	118 feet
2024-WTE-878-OE	384 feet
2024-WTE-879-OE	399 feet
2024-WTE-880-OE	399 feet
2024-WTE-881-OE	399 feet
2024-WTE-882-OE	399 feet
2024-WTE-883-OE	399 feet
2024-WTE-884-OE	376 feet
2024-WTE-885-OE	378 feet
2024-WTE-886-OE	386 feet
2024-WTE-887-OE	318 feet
2024-WTE-888-OE	319 feet
2024-WTE-889-OE	350 feet
2024-WTE-890-OE	372 feet
2024-WTE-891-OE	392 feet
2024-WTE-892-OE	399 feet
2024-WTE-893-OE	399 feet
2024-WTE-894-OE	399 feet
2024-WTE-895-OE	399 feet
2024-WTE-896-OE	399 feet
2024-WTE-897-OE	399 feet
2024-WTE-908-OE	112 feet
2024-WTE-909-OE	131 feet
2024-WTE-910-OE	150 feet
2024-WTE-911-OE	175 feet
2024-WTE-912-OE	387 feet
2024-WTE-913-OE	304 feet
2024-WTE-914-OE	309 feet
2024-WTE-915-OE	328 feet
2024-WTE-916-OE	372 feet
2024-WTE-917-OE	344 feet
2024-WTE-918-OE	364 feet
2024-WTE-919-OE	379 feet
2024-WTE-920-OE	398 feet

2024-WTE-921-OE 399 feet
2024-WTE-922-OE 197 feet
2024-WTE-923-OE 333 feet
2024-WTE-924-OE 347 feet
2024-WTE-926-OE 134 feet
2024-WTE-927-OE 144 feet
2024-WTE-928-OE 150 feet
2024-WTE-929-OE 150 feet

c. Section 77.17 (a)(3): A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

The following proposed turbines increase the Linton Municipal (7L2) Linton, ND. RNAV (GPS) RWY 27 ORIG-C, Minimum Safe Altitude (MSA) from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-898-OE
2024-WTE-899-OE
2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE

2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE

2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines increase the Linton Municipal (7L2) Linton ND. RNAV (GPS) RWY 9 ORIG-C, MSA from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE

2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines penetrate the Wishek Municipal (6L5) Wishek, ND., RWY 32 (PLAN on FILE) 40:1 departure surface by _____ feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES RWY 32, STD with a minimum climb gradient increase from an anticipated 200 to _____ feet per NM to _____ feet AMSL.

ASN	penetration in feet	feet per/NM	to feet AMSL
2024-WTE-847-OE	7	204	2900
2024-WTE-850-OE	56	222	2900
2024-WTE-851-OE	58	233	2900
2024-WTE-852-OE	89	232	2900
2024-WTE-853-OE	65	223	2900
2024-WTE-854-OE	31	222	2900
2024-WTE-862-OE	4	201	3000
2024-WTE-863-OE	76	234	2900
2024-WTE-864-OE	65	231	2900
2024-WTE-865-OE	13	295	2900
2024-WTE-866-OE	162	294	2900
2024-WTE-867-OE	211	306	3000
2024-WTE-868-OE	223	309	3000
2024-WTE-869-OE	220	303	3100
2024-WTE-870-OE	180	278	3000
2024-WTE-871-OE	150	262	3100
2024-WTE-872-OE	67	226	3100
2024-WTE-878-OE	40	224	3000
2024-WTE-879-OE	64	244	3000
2024-WTE-880-OE	85	264	2900
2024-WTE-881-OE	136	320	2900
2024-WTE-882-OE	234	418	2900
2024-WTE-883-OE	215	377	3000
2024-WTE-884-OE	157	298	3000
2024-WTE-885-OE	20	212	3000
2024-WTE-886-OE	14	208	3000
2024-WTE-887-OE	12	209	3000
2024-WTE-891-OE	24	214	3000
2024-WTE-892-OE	56	237	3000
2024-WTE-893-OE	61	245	2900
2024-WTE-896-OE	31	224	3000

2024-WTE-897-OE	17	211	3000
2024-WTE-912-OE	214	331	2900

The following proposed turbines would increase the Wishek Municipal Airport (6L5) Wishek, ND. minimum altitudes for the RNAV (GPS) RWY 14 (PROPOSED), LNAV MDA from an anticipated 2560 feet AMSL to as much as 2920 feet AMSL and the CAT A/B circling MDA from an anticipated 2560/2600 feet AMSL to as much as 2920 feet AMSL.

2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE

The following proposed turbines would increase the Minimum Vectoring Altitude (MVA) for Bismarck TRACON (BIS) Bismarck, ND., BIS_MVA_FUS3_2023 and BIS_MVA_FUS5_2023, Sector E from 3700 feet AMSL to 3800 feet AMSL.

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

d. Section 77.17(a)(4): A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.

The following proposed turbines would Increase the Minimum Obstruction Clearance Altitude (MOCA) along V15 from BISMARK (BIS) VORTAC, 117 degree radial to ABERDEEN (ABR) VORTAC from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-890-OE
2024-WTE-891-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

3. TITLE 14 CFR PART 77 - EFFECT ON AERONAUTICAL OPERATIONS

a. Section 77.29 (a)(1): impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At a height greater than 499 feet AGL, the proposed wind farm would extend into airspace normally used for VFR en route flight and may be located within 2 statute miles (SM) of potential VFR Routes as defined by FAA Order 7400.2, Section 6-3-8. The turbines within 2 SM of a VFR Route would have an adverse effect upon VFR air navigation. Further study was required to determine whether the proposed structures would have a substantial adverse effect on VFR operations.

4. TITLE 14 CFR PART 77 - FURTHER STUDY AND PUBLIC COMMENTS

In order to facilitate the public comment process, all 103 studies were circularized under ASN 2024-WTE-853-OE on 04/09/2024, to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. There was one comment received as a result of the circularization concluding on 05/16/2024. The comment(s) is summarized as follows:

Comments: We had Badger Wind, LLC remove 5 wind turbines from their plans in 2021 because they would interfere with our plans to add instrument approach to our airport in the future. I would like them to remove this wind turbine T-32 from their plans. It is to close to our airport. They have the whole country side to develop wind turbines, I do not understand why they want to place wind turbines this close to town and this close to an airport. Please do not allow them to place a tower this close to our airport.

FAA Response: The FAA study indicates that this turbine does not impact future airport plans other than the PLAN on FILE: Obstacle penetrates RWY 32 40:1 departure surface by 65 feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES, RWY 32, STD with a minimum climb gradient increase from anticipated 200 to 223 feet per NM to 2900 feet AMSL. The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. Additionally, the total IFR traffic counts for the 6L5 airport for the period of 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity.. Therefore, the proposed wind farm would not have a substantial adverse effect on IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Divion responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is a proposed TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) ruway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt ruway that would be an A(NP) runway, which is a utility ruway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.

5. BASIS FOR DETERMINATION

a. IFR EFFECTS

The aeronautical study identified an IFR effect(s) for 7L2, 6L5, BIS and V15. MSAs are the minimum obstacle clearance altitudes within a specified distance from the navigation facilities upon which procedures are predicated. MSA altitudes are designed for emergency use only and are not routinely used by pilots or by air traffic control. Consequently, MSAs are not circulated for public comment as they are not considered a factor in determining the extent of adverse effect.

MVAs are solely used by ATC, not published for public use and therefore are not circulated for public comment. A review by the controlling facility determined that increasing the altitude in the sector would ensure the required obstacle clearance is maintained and therefore would not have a substantial adverse effect on air traffic operations.

MOCAs assure obstacle clearance over the entire route segment to which they apply and assure navigational signal coverage within 22 NM of the associated VOR navigational facility. For that portion of the route

segment beyond 22 NM from the VOR, where the MOCA is lower than the MEA and there are no plans to lower the MEA to the MOCA, a structure that affects only the MOCA would not be considered to have substantial adverse effect. Other situations require study as ATC may assign altitudes down to the MOCA under certain conditions. Further study revealed that only the MOCA is effected in this area and that the MOCA is not routinely assigned by ATC.

The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. The total IFR traffic counts for 6L5 f from 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity. Therefore, the proposed wind farm would not have a substantial adverse effect on any IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Division responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is proposed as a TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) runway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt runway that would be an A(NP) runway, which is a utility runway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.
The proposed structures would have no effect on any other existing or proposed arrival, departure, or en route IFR operations or procedures.

b. VFR EFFECTS
The aeronautical study identified no effect on any existing or proposed VFR arrival or departure operations. The proposals would be located beyond the normal traffic pattern airspace for 6L5 and any other public use or military airport. At 599 feet AGL, the structures would be located within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm.

In accordance with FAA Order 7400.2, the proposed wind farm would not affect a significant volume of aircraft and therefore, it is determined they will not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

c. RADAR EFFECTS
The aeronautical study identified no effect on ATC radar, direction finders, ATC tower line-of-sight visibility, air navigation, communication facilities, and other surveillance systems for any known public-use or military airports.

d. CUMULATIVE EFFECT
The cumulative impact of the proposed structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any substantial adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposals affect the capacity of any known existing or planned public-use or military airport.

6. DETERMINATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation providing the conditions set forth in this determination are met.

7. CONDITIONS

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, sixty (60) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, ten (10) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE

2024-WTE-837-OE
2024-WTE-838-OE
2024-WTE-839-OE
2024-WTE-840-OE
2024-WTE-847-OE
2024-WTE-849-OE
2024-WTE-850-OE
2024-WTE-851-OE
2024-WTE-852-OE
2024-WTE-853-OE
2024-WTE-854-OE
2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-863-OE
2024-WTE-864-OE
2024-WTE-865-OE
2024-WTE-866-OE
2024-WTE-867-OE
2024-WTE-868-OE
2024-WTE-878-OE
2024-WTE-879-OE
2024-WTE-880-OE
2024-WTE-881-OE
2024-WTE-882-OE
2024-WTE-883-OE
2024-WTE-884-OE
2024-WTE-885-OE
2024-WTE-886-OE
2024-WTE-887-OE
2024-WTE-892-OE
2024-WTE-893-OE
2024-WTE-896-OE
2024-WTE-897-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-919-OE
2024-WTE-920-OE

Additionally, within five days after each project structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (https://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

****

ACRONYMS & ABBREVIATIONS
AGL, Above Ground Level
AMSL, Above Mean Sea Level
ARP, Airport Reference Point
ARSR, Air Route Surveillance Radar
ARTCC, Air Route Traffic Control Center
ASN, Aeronautical Study Number
ASR, Airport Surveillance Radar
ATC, Air Traffic Control
ATCT, Air Traffic Control Tower
CARSR, Common Air Route Surveillance Radar
CAT, Category
CFR, Code of Federal Regulations
CG, Climb Gradient
DA, Decision Altitude
DME, Distance Measuring Equipment
FAA, Federal Aviation Administration
FUS, Fusion
GPS, Global Positioning System
IAF, Initial Approach Fix
IAP, Instrument Approach Procedure
ICA, Initial Climb Area
IFR, Instrument Flight Rules
INT, Intersection
LAT, Latitude
LNAV, Lateral Navigation
LOC, Localizer
LONG, Longitude
LP, Localizer Performance
LPV, Localizer Performance with Vertical Guidance
MDA, Minimum Descent Altitude
MEA, Minimum En route Altitude
MET, Meteorological Evaluation Tower
MIA, Minimum IFR Altitude
Min, Minimum
MOCA, Minimum Obstruction Clearance Altitude
MSA, Minimum Safe Altitude
MSL, Mean Sea Level
MVA, Minimum Vectoring Altitude
NA, Not Authorized
NAS, National Airspace System

NAVAID, Navigational Aid
NDB, Non-Directional Radio Beacon
NEH, No Effect Height
NM, Nautical Mile
NOTAM, Notice to Airmen
NPF, Notice of Preliminary Findings
OCS, Obstacle Clearance Surface
OE, Obstruction Evaluation
OEG, Obstruction Evaluation Group
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace.
P-NOTAM, Permanent Notice to Airmen
RLOS, Radar Line of Sight
RNAV, Area Navigation
RNP, Required Navigation Performance
RWY, Runway
S-, Straight-in
SE, Site Elevation
S-LOC, Straight-in Localizer
SM, Statute Miles
Std., Standard
TAA, Terminal Arrival Area
TACAN, Tactical Air Navigation System
TERPS, Terminal Instrument Procedures
TPA, Traffic Pattern Airspace
TRACON, Terminal Radar Approach Control
V, Victor Airway
VFR, Visual Flight Rules
VHF, Very High Frequency
VOR, VHF Omnidirectional Radio Range System
VORTAC, VOR/TACAN System
WTE, Wind Turbine East
WTW, Wind Turbine West

Sectional Map for ASN 2024-WTE-893-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-894-OE
Prior Study No.
2021-WTE-4938-OE

Issued Date: 02/12/2025

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** MARKING & LIGHTING RECOMMENDATION ****

The Federal Aviation Administration has completed an evaluation of your request concerning:

Structure:	Wind Turbine T-81
Location:	Wishek, ND
Latitude:	46-13-30.79N NAD 83
Longitude:	99-34-24.50W
Heights:	2066 feet site elevation (SE)
	599 feet above ground level (AGL)
	2665 feet above mean sea level (AMSL)

Based on this evaluation, we are unable to accommodate your request.

The structure should continue to be marked/lighted utilizing White Paint/Synchronized Red Lights.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

Your request for consideration to utilize an Aircraft Detection Lighting System to operate the recommended lighting is not approved. See attached for additional condition(s) or information.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed

and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This evaluation concerns the effect of the marking/lighting changes on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6051, or Christopher.evans@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-894-OE.

Signature Control No: 611179956-647316382 (MAL -WT)
Christopher Evans
Specialist

Attachment(s)
Additional Information
Map(s)

Due to the proximity of the structure to the Wishek Municipal Airport (6L5), the lights for this turbine must not be controlled by the ADLS system. To ensure the safety of aircraft engaged in low-level, agricultural and/or helicopter operations, the structure must remain marked and lighted in accordance with the original determination for this structure.

Sectional Map for ASN 2024-WTE-894-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-894-OE
Prior Study No.
2021-WTE-4938-OE

Issued Date: 06/27/2024

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine T-81
Location:	Wishek, ND
Latitude:	46-13-30.79N NAD 83
Longitude:	99-34-24.50W
Heights:	2066 feet site elevation (SE)
	599 feet above ground level (AGL)
	2665 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 12/27/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before July 27, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on August 06, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should

be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Buck Reynolds, at (847) 294-7576, or Wayne.Reynolds@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-894-OE.

Signature Control No: 611179956-625757730 (DNH -WT)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Map(s)

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

A list of commonly used acronyms and abbreviations is available at the end of this document. A full list is available at the FAA's public website at https://oeaaa.faa.gov/oeaaa/downloads/external/content/FAA_Acronyms.pdf .

1. PROPOSAL DESCRIPTION

Proposed are 103 wind turbines for a project that lies approximately 1.97 NM to 3.95 NM west southwest of the airport reference point (ARP) of the Wishek Municipal Airport (6L5), Wishek, ND., extending clockwise to 2.64 NM to 7.13NM west of the 65L ARP, extending further clockwise to 3.06 NM to 3.88 NM north northeast of the 6L5 ARP.

For the sake of efficiency, all of the wind turbines in this project that have similar impacts are included in this narrative. All 103 wind turbines have been identified as having aeronautical effects which are outlined in the summary below.

The proposed wind turbines' described heights and locations are expressed in Above Ground Level (AGL) height, Above Mean Sea Level (AMSL) height and latitude (LAT)/longitude (LONG).

ASN	AGL	AMSL	LAT	LONG
2024-WTE-822-OE	599	2646	46-22-20.66N	99-39-36.26W
2024-WTE-823-OE	599	2640	46-22-26.42N	99-39-13.76W
2024-WTE-824-OE	599	2632	46-22-36.21N	99-38-57.17W
2024-WTE-825-OE	599	2740	46-19-21.83N	99-39-32.80W
2024-WTE-826-OE	599	2747	46-19-23.07N	99-39-09.52W
2024-WTE-827-OE	599	2706	46-17-10.19N	99-40-51.13W
2024-WTE-828-OE	599	2697	46-17-10.68N	99-40-28.47W
2024-WTE-829-OE	599	2685	46-17-11.39N	99-40-06.89W
2024-WTE-830-OE	599	2678	46-17-11.11N	99-39-36.18W
2024-WTE-831-OE	599	2693	46-17-22.64N	99-39-25.48W
2024-WTE-832-OE	599	2690	46-17-29.68N	99-39-07.10W
2024-WTE-833-OE	599	2700	46-17-58.60N	99-38-23.17W
2024-WTE-834-OE	599	2686	46-18-08.88N	99-38-17.12W
2024-WTE-835-OE	599	2686	46-18-24.47N	99-38-08.84W
2024-WTE-836-OE	599	2723	46-18-33.83N	99-37-58.90W
2024-WTE-837-OE	599	2711	46-18-51.34N	99-37-56.34W
2024-WTE-838-OE	599	2680	46-19-03.07N	99-37-49.70W
2024-WTE-839-OE	599	2646	46-18-55.13N	99-37-14.54W

2024-WTE-840-OE / 599 / 2670 / 46-19-21.11N / 99-36-33.26W
2024-WTE-841-OE / 599 / 2683 / 46-16-41.24N / 99-39-25.45W

2024-WTE-842-OE / 599 / 2681 / 46-16-47.67N / 99-39-10.43W
2024-WTE-843-OE / 599 / 2660 / 46-16-42.79N / 99-38-39.53W
2024-WTE-844-OE / 599 / 2651 / 46-16-51.88N / 99-38-26.23W
2024-WTE-845-OE / 599 / 2651 / 46-17-04.98N / 99-38-05.59W
2024-WTE-846-OE / 599 / 2674 / 46-17-20.72N / 99-37-56.23W
2024-WTE-847-OE / 599 / 2680 / 46-17-30.61N / 99-37-43.17W
2024-WTE-848-OE / 599 / 2668 / 46-17-59.09N / 99-37-19.19W
2024-WTE-849-OE / 599 / 2640 / 46-18-26.22N / 99-37-04.35W
2024-WTE-850-OE / 599 / 2633 / 46-16-52.86N / 99-37-07.88W
2024-WTE-851-OE / 599 / 2657 / 46-17-09.39N / 99-37-00.77W

2024-WTE-852-OE / 599 / 2670 / 46-17-21.00N / 99-36-52.26W
2024-WTE-853-OE / 599 / 2646 / 46-17-31.39N / 99-36-41.62W
2024-WTE-854-OE / 599 / 2633 / 46-17-41.37N / 99-36-36.64W
2024-WTE-855-OE / 599 / 2628 / 46-17-58.38N / 99-36-24.07W
2024-WTE-856-OE / 599 / 2594 / 46-18-36.13N / 99-35-14.91W
2024-WTE-857-OE / 599 / 2604 / 46-18-50.64N / 99-35-16.10W
2024-WTE-858-OE / 599 / 2600 / 46-19-05.37N / 99-35-11.90W
2024-WTE-859-OE / 599 / 2763 / 46-14-48.82N / 99-38-37.69W
2024-WTE-860-OE / 599 / 2729 / 46-14-53.46N / 99-38-19.53W
2024-WTE-861-OE / 599 / 2714 / 46-15-13.35N / 99-38-09.39W

2024-WTE-862-OE / 599 / 2714 / 46-15-21.25N / 99-37-57.66W
2024-WTE-863-OE / 599 / 2668 / 46-16-05.27N / 99-37-12.34W
2024-WTE-864-OE / 599 / 2631 / 46-16-14.38N / 99-37-00.06W
2024-WTE-865-OE / 599 / 2665 / 46-16-06.44N / 99-36-17.92W
2024-WTE-866-OE / 599 / 2623 / 46-16-17.58N / 99-35-59.50W
2024-WTE-867-OE / 599 / 2697 / 46-18-03.60N / 99-32-51.05W
2024-WTE-868-OE / 599 / 2743 / 46-18-10.09N / 99-32-28.16W
2024-WTE-869-OE / 599 / 2776 / 46-18-21.17N / 99-32-15.37W
2024-WTE-870-OE / 599 / 2767 / 46-18-32.54N / 99-32-07.81W
2024-WTE-871-OE / 599 / 2768 / 46-18-40.20N / 99-31-52.51W

2024-WTE-872-OE / 599 / 2797 / 46-19-21.37N / 99-31-26.62W
2024-WTE-873-OE / 599 / 2737 / 46-19-43.23N / 99-30-46.28W
2024-WTE-874-OE / 599 / 2695 / 46-19-52.97N / 99-30-33.28W
2024-WTE-875-OE / 599 / 2707 / 46-20-07.36N / 99-30-54.18W
2024-WTE-876-OE / 599 / 2719 / 46-20-15.34N / 99-31-35.65W
2024-WTE-877-OE / 599 / 2667 / 46-20-40.93N / 99-30-23.57W
2024-WTE-878-OE / 599 / 2716 / 46-14-48.22N / 99-36-54.75W
2024-WTE-879-OE / 599 / 2710 / 46-14-54.01N / 99-36-38.28W
2024-WTE-880-OE / 599 / 2692 / 46-14-56.63N / 99-36-14.82W
2024-WTE-881-OE / 599 / 2707 / 46-15-03.68N / 99-36-00.33W

2024-WTE-882-OE / 599 / 2722 / 46-17-13.91N / 99-32-13.87W
2024-WTE-883-OE / 599 / 2702 / 46-17-22.64N / 99-32-04.75W

2024-WTE-884-OE / 599 / 2758 / 46-18-11.56N / 99-31-24.04W
2024-WTE-885-OE / 599 / 2700 / 46-17-57.69N / 99-30-26.08W
2024-WTE-886-OE / 599 / 2705 / 46-17-49.06N / 99-30-15.49W
2024-WTE-887-OE / 599 / 2730 / 46-18-34.37N / 99-30-18.50W
2024-WTE-888-OE / 599 / 2727 / 46-18-05.96N / 99-29-03.65W
2024-WTE-889-OE / 599 / 2813 / 46-13-27.26N / 99-36-54.27W
2024-WTE-890-OE / 599 / 2762 / 46-14-00.18N / 99-36-53.19W
2024-WTE-891-OE / 599 / 2755 / 46-14-12.01N / 99-36-39.97W

2024-WTE-892-OE / 599 / 2707 / 46-14-08.35N / 99-35-19.52W
2024-WTE-893-OE / 599 / 2679 / 46-14-08.50N / 99-34-57.21W
2024-WTE-894-OE / 599 / 2665 / 46-13-30.79N / 99-34-24.50W
2024-WTE-895-OE / 599 / 2718 / 46-16-17.48N / 99-29-27.65W
2024-WTE-896-OE / 599 / 2757 / 46-16-43.28N / 99-29-31.15W
2024-WTE-897-OE / 599 / 2750 / 46-17-06.97N / 99-29-29.96W
2024-WTE-898-OE / 599 / 2765 / 46-19-24.06N / 99-40-23.61W
2024-WTE-899-OE / 599 / 2773 / 46-19-27.25N / 99-40-05.97W
2024-WTE-900-OE / 599 / 2763 / 46-19-42.87N / 99-39-03.07W
2024-WTE-901-OE / 599 / 2715 / 46-17-33.19N / 99-40-19.03W

2024-WTE-902-OE / 599 / 2725 / 46-17-43.65N / 99-40-08.96W
2024-WTE-903-OE / 599 / 2715 / 46-18-00.37N / 99-40-08.19W
2024-WTE-904-OE / 599 / 2787 / 46-15-46.97N / 99-42-35.58W
2024-WTE-905-OE / 599 / 2790 / 46-15-49.35N / 99-42-16.32W
2024-WTE-906-OE / 599 / 2785 / 46-15-52.71N / 99-41-56.74W
2024-WTE-907-OE / 599 / 2781 / 46-15-48.50N / 99-40-57.22W
2024-WTE-908-OE / 599 / 2784 / 46-15-58.17N / 99-40-43.79W
2024-WTE-909-OE / 599 / 2784 / 46-16-03.44N / 99-40-24.98W
2024-WTE-910-OE / 599 / 2723 / 46-16-14.21N / 99-40-05.49W
2024-WTE-911-OE / 599 / 2712 / 46-16-14.70N / 99-39-43.12W

2024-WTE-912-OE / 599 / 2629 / 46-16-20.97N / 99-35-37.39W
2024-WTE-913-OE / 599 / 2827 / 46-13-09.40N / 99-37-26.04W
2024-WTE-914-OE / 599 / 2804 / 46-12-39.11N / 99-36-54.20W
2024-WTE-915-OE / 599 / 2809 / 46-12-50.95N / 99-36-45.69W
2024-WTE-916-OE / 599 / 2864 / 46-12-50.65N / 99-35-57.99W
2024-WTE-917-OE / 599 / 2823 / 46-12-11.58N / 99-35-33.44W
2024-WTE-918-OE / 599 / 2791 / 46-12-19.36N / 99-35-20.55W
2024-WTE-919-OE / 599 / 2749 / 46-12-20.98N / 99-35-00.78W
2024-WTE-920-OE / 599 / 2749 / 46-12-24.53N / 99-34-38.61W
2024-WTE-921-OE / 599 / 2751 / 46-12-48.50N / 99-34-25.28W

2024-WTE-922-OE / 599 / 2680 / 46-16-16.57N / 99-39-22.49W
2024-WTE-923-OE / 599 / 2827 / 46-13-15.45N / 99-37-02.58W
2024-WTE-924-OE / 599 / 2821 / 46-12-43.36N / 99-36-16.39W

2. TITLE 14 CFR PART 77 - OBSTRUCTION STANDARDS EXCEEDED

a. Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. The proposals would all exceed this standard by 100 feet.

b. Section 77.17(a)(2): A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 NM miles of the established reference point of 6L5, and that height increases in the proportion of 100 feet for each additional NM from the airport up to a maximum of 499 feet. The following would exceed by:

2024-WTE-829-OE	119 feet
2024-WTE-830-OE	152 feet
2024-WTE-831-OE	155 feet
2024-WTE-832-OE	169 feet
2024-WTE-833-OE	186 feet
2024-WTE-834-OE	181 feet
2024-WTE-835-OE	172 feet
2024-WTE-836-OE	171 feet
2024-WTE-837-OE	153 feet
2024-WTE-838-OE	144 feet
2024-WTE-839-OE	181 feet
2024-WTE-840-OE	175 feet
2024-WTE-841-OE	182 feet
2024-WTE-842-OE	194 feet
2024-WTE-843-OE	231 feet
2024-WTE-844-OE	239 feet
2024-WTE-845-OE	251 feet
2024-WTE-846-OE	247 feet
2024-WTE-847-OE	251 feet
2024-WTE-848-OE	244 feet
2024-WTE-849-OE	223 feet
2024-WTE-850-OE	310 feet
2024-WTE-851-OE	311 feet
2024-WTE-852-OE	308 feet
2024-WTE-853-OE	307 feet
2024-WTE-854-OE	291 feet
2024-WTE-855-OE	276 feet
2024-WTE-856-OE	238 feet
2024-WTE-857-OE	226 feet
2024-WTE-858-OE	202 feet
2024-WTE-859-OE	266 feet
2024-WTE-860-OE	287 feet
2024-WTE-861-OE	298 feet
2024-WTE-862-OE	310 feet
2024-WTE-863-OE	347 feet
2024-WTE-864-OE	344 feet
2024-WTE-865-OE	399 feet
2024-WTE-866-OE	380 feet

2024-WTE-867-OE	392 feet
2024-WTE-868-OE	383 feet
2024-WTE-869-OE	365 feet
2024-WTE-870-OE	346 feet
2024-WTE-871-OE	333 feet
2024-WTE-872-OE	261 feet
2024-WTE-873-OE	217 feet
2024-WTE-874-OE	198 feet
2024-WTE-875-OE	180 feet
2024-WTE-876-OE	173 feet
2024-WTE-877-OE	118 feet
2024-WTE-878-OE	384 feet
2024-WTE-879-OE	399 feet
2024-WTE-880-OE	399 feet
2024-WTE-881-OE	399 feet
2024-WTE-882-OE	399 feet
2024-WTE-883-OE	399 feet
2024-WTE-884-OE	376 feet
2024-WTE-885-OE	378 feet
2024-WTE-886-OE	386 feet
2024-WTE-887-OE	318 feet
2024-WTE-888-OE	319 feet
2024-WTE-889-OE	350 feet
2024-WTE-890-OE	372 feet
2024-WTE-891-OE	392 feet
2024-WTE-892-OE	399 feet
2024-WTE-893-OE	399 feet
2024-WTE-894-OE	399 feet
2024-WTE-895-OE	399 feet
2024-WTE-896-OE	399 feet
2024-WTE-897-OE	399 feet
2024-WTE-908-OE	112 feet
2024-WTE-909-OE	131 feet
2024-WTE-910-OE	150 feet
2024-WTE-911-OE	175 feet
2024-WTE-912-OE	387 feet
2024-WTE-913-OE	304 feet
2024-WTE-914-OE	309 feet
2024-WTE-915-OE	328 feet
2024-WTE-916-OE	372 feet
2024-WTE-917-OE	344 feet
2024-WTE-918-OE	364 feet
2024-WTE-919-OE	379 feet
2024-WTE-920-OE	398 feet

2024-WTE-921-OE 399 feet
2024-WTE-922-OE 197 feet
2024-WTE-923-OE 333 feet
2024-WTE-924-OE 347 feet
2024-WTE-926-OE 134 feet
2024-WTE-927-OE 144 feet
2024-WTE-928-OE 150 feet
2024-WTE-929-OE 150 feet

c. Section 77.17 (a)(3): A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

The following proposed turbines increase the Linton Municipal (7L2) Linton, ND. RNAV (GPS) RWY 27 ORIG-C, Minimum Safe Altitude (MSA) from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-898-OE
2024-WTE-899-OE
2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE

2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE

2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines increase the Linton Municipal (7L2) Linton ND. RNAV (GPS) RWY 9 ORIG-C, MSA from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE

2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines penetrate the Wishek Municipal (6L5) Wishek, ND., RWY 32 (PLAN on FILE) 40:1 departure surface by _____ feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES RWY 32, STD with a minimum climb gradient increase from an anticipated 200 to _____ feet per NM to _____ feet AMSL.

ASN	penetration in feet	feet per/NM	to feet AMSL
2024-WTE-847-OE	7	204	2900
2024-WTE-850-OE	56	222	2900
2024-WTE-851-OE	58	233	2900
2024-WTE-852-OE	89	232	2900
2024-WTE-853-OE	65	223	2900
2024-WTE-854-OE	31	222	2900
2024-WTE-862-OE	4	201	3000
2024-WTE-863-OE	76	234	2900
2024-WTE-864-OE	65	231	2900
2024-WTE-865-OE	13	295	2900
2024-WTE-866-OE	162	294	2900
2024-WTE-867-OE	211	306	3000
2024-WTE-868-OE	223	309	3000
2024-WTE-869-OE	220	303	3100
2024-WTE-870-OE	180	278	3000
2024-WTE-871-OE	150	262	3100
2024-WTE-872-OE	67	226	3100
2024-WTE-878-OE	40	224	3000
2024-WTE-879-OE	64	244	3000
2024-WTE-880-OE	85	264	2900
2024-WTE-881-OE	136	320	2900
2024-WTE-882-OE	234	418	2900
2024-WTE-883-OE	215	377	3000
2024-WTE-884-OE	157	298	3000
2024-WTE-885-OE	20	212	3000
2024-WTE-886-OE	14	208	3000
2024-WTE-887-OE	12	209	3000
2024-WTE-891-OE	24	214	3000
2024-WTE-892-OE	56	237	3000
2024-WTE-893-OE	61	245	2900
2024-WTE-896-OE	31	224	3000

2024-WTE-897-OE	17	211	3000
2024-WTE-912-OE	214	331	2900

The following proposed turbines would increase the Wishek Municipal Airport (6L5) Wishek, ND. minimum altitudes for the RNAV (GPS) RWY 14 (PROPOSED), LNAV MDA from an anticipated 2560 feet AMSL to as much as 2920 feet AMSL and the CAT A/B circling MDA from an anticipated 2560/2600 feet AMSL to as much as 2920 feet AMSL.

2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE

The following proposed turbines would increase the Minimum Vectoring Altitude (MVA) for Bismarck TRACON (BIS) Bismarck, ND., BIS_MVA_FUS3_2023 and BIS_MVA_FUS5_2023, Sector E from 3700 feet AMSL to 3800 feet AMSL.

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

d. Section 77.17(a)(4): A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.

The following proposed turbines would Increase the Minimum Obstruction Clearance Altitude (MOCA) along V15 from BISMARK (BIS) VORTAC, 117 degree radial to ABERDEEN (ABR) VORTAC from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-890-OE
2024-WTE-891-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

3. TITLE 14 CFR PART 77 - EFFECT ON AERONAUTICAL OPERATIONS

a. Section 77.29 (a)(1): impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At a height greater than 499 feet AGL, the proposed wind farm would extend into airspace normally used for VFR en route flight and may be located within 2 statute miles (SM) of potential VFR Routes as defined by FAA Order 7400.2, Section 6-3-8. The turbines within 2 SM of a VFR Route would have an adverse effect upon VFR air navigation. Further study was required to determine whether the proposed structures would have a substantial adverse effect on VFR operations.

4. TITLE 14 CFR PART 77 - FURTHER STUDY AND PUBLIC COMMENTS

In order to facilitate the public comment process, all 103 studies were circularized under ASN 2024-WTE-853-OE on 04/09/2024, to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. There was one comment received as a result of the circularization concluding on 05/16/2024. The comment(s) is summarized as follows:

Comments: We had Badger Wind, LLC remove 5 wind turbines from their plans in 2021 because they would interfere with our plans to add instrument approach to our airport in the future. I would like them to remove this wind turbine T-32 from their plans. It is to close to our airport. They have the whole country side to develop wind turbines, I do not understand why they want to place wind turbines this close to town and this close to an airport. Please do not allow them to place a tower this close to our airport.

FAA Response: The FAA study indicates that this turbine does not impact future airport plans other than the PLAN on FILE: Obstacle penetrates RWY 32 40:1 departure surface by 65 feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES, RWY 32, STD with a minimum climb gradient increase from anticipated 200 to 223 feet per NM to 2900 feet AMSL. The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. Additionally, the total IFR traffic counts for the 6L5 airport for the period of 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity.. Therefore, the proposed wind farm would not have a substantial adverse effect on IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Divion responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is a proposed TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) ruway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt ruway that would be an A(NP) runway, which is a utility ruway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.

5. BASIS FOR DETERMINATION

a. IFR EFFECTS

The aeronautical study identified an IFR effect(s) for 7L2, 6L5, BIS and V15. MSAs are the minimum obstacle clearance altitudes within a specified distance from the navigation facilities upon which procedures are predicated. MSA altitudes are designed for emergency use only and are not routinely used by pilots or by air traffic control. Consequently, MSAs are not circulated for public comment as they are not considered a factor in determining the extent of adverse effect.

MVAs are solely used by ATC, not published for public use and therefore are not circulated for public comment. A review by the controlling facility determined that increasing the altitude in the sector would ensure the required obstacle clearance is maintained and therefore would not have a substantial adverse effect on air traffic operations.

MOCAs assure obstacle clearance over the entire route segment to which they apply and assure navigational signal coverage within 22 NM of the associated VOR navigational facility. For that portion of the route

segment beyond 22 NM from the VOR, where the MOCA is lower than the MEA and there are no plans to lower the MEA to the MOCA, a structure that affects only the MOCA would not be considered to have substantial adverse effect. Other situations require study as ATC may assign altitudes down to the MOCA under certain conditions. Further study revealed that only the MOCA is effected in this area and that the MOCA is not routinely assigned by ATC.

The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. The total IFR traffic counts for 6L5 f from 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity. Therefore, the proposed wind farm would not have a substantial adverse effect on any IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Division responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is proposed as a TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) runway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt runway that would be an A(NP) runway, which is a utility runway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.
The proposed structures would have no effect on any other existing or proposed arrival, departure, or en route IFR operations or procedures.

b. VFR EFFECTS
The aeronautical study identified no effect on any existing or proposed VFR arrival or departure operations. The proposals would be located beyond the normal traffic pattern airspace for 6L5 and any other public use or military airport. At 599 feet AGL, the structures would be located within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm.

In accordance with FAA Order 7400.2, the proposed wind farm would not affect a significant volume of aircraft and therefore, it is determined they will not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

c. RADAR EFFECTS
The aeronautical study identified no effect on ATC radar, direction finders, ATC tower line-of-sight visibility, air navigation, communication facilities, and other surveillance systems for any known public-use or military airports.

d. CUMULATIVE EFFECT
The cumulative impact of the proposed structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any substantial adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposals affect the capacity of any known existing or planned public-use or military airport.

6. DETERMINATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation providing the conditions set forth in this determination are met.

7. CONDITIONS

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, sixty (60) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, ten (10) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE

2024-WTE-837-OE
2024-WTE-838-OE
2024-WTE-839-OE
2024-WTE-840-OE
2024-WTE-847-OE
2024-WTE-849-OE
2024-WTE-850-OE
2024-WTE-851-OE
2024-WTE-852-OE
2024-WTE-853-OE
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2024-WTE-866-OE
2024-WTE-867-OE
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2024-WTE-892-OE
2024-WTE-893-OE
2024-WTE-896-OE
2024-WTE-897-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-919-OE
2024-WTE-920-OE

Additionally, within five days after each project structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (https://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

****

ACRONYMS & ABBREVIATIONS
AGL, Above Ground Level
AMSL, Above Mean Sea Level
ARP, Airport Reference Point
ARSR, Air Route Surveillance Radar
ARTCC, Air Route Traffic Control Center
ASN, Aeronautical Study Number
ASR, Airport Surveillance Radar
ATC, Air Traffic Control
ATCT, Air Traffic Control Tower
CARSR, Common Air Route Surveillance Radar
CAT, Category
CFR, Code of Federal Regulations
CG, Climb Gradient
DA, Decision Altitude
DME, Distance Measuring Equipment
FAA, Federal Aviation Administration
FUS, Fusion
GPS, Global Positioning System
IAF, Initial Approach Fix
IAP, Instrument Approach Procedure
ICA, Initial Climb Area
IFR, Instrument Flight Rules
INT, Intersection
LAT, Latitude
LNAV, Lateral Navigation
LOC, Localizer
LONG, Longitude
LP, Localizer Performance
LPV, Localizer Performance with Vertical Guidance
MDA, Minimum Descent Altitude
MEA, Minimum En route Altitude
MET, Meteorological Evaluation Tower
MIA, Minimum IFR Altitude
Min, Minimum
MOCA, Minimum Obstruction Clearance Altitude
MSA, Minimum Safe Altitude
MSL, Mean Sea Level
MVA, Minimum Vectoring Altitude
NA, Not Authorized
NAS, National Airspace System

NAVAID, Navigational Aid
NDB, Non-Directional Radio Beacon
NEH, No Effect Height
NM, Nautical Mile
NOTAM, Notice to Airmen
NPF, Notice of Preliminary Findings
OCS, Obstacle Clearance Surface
OE, Obstruction Evaluation
OEG, Obstruction Evaluation Group
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace.
P-NOTAM, Permanent Notice to Airmen
RLOS, Radar Line of Sight
RNAV, Area Navigation
RNP, Required Navigation Performance
RWY, Runway
S-, Straight-in
SE, Site Elevation
S-LOC, Straight-in Localizer
SM, Statute Miles
Std., Standard
TAA, Terminal Arrival Area
TACAN, Tactical Air Navigation System
TERPS, Terminal Instrument Procedures
TPA, Traffic Pattern Airspace
TRACON, Terminal Radar Approach Control
V, Victor Airway
VFR, Visual Flight Rules
VHF, Very High Frequency
VOR, VHF Omnidirectional Radio Range System
VORTAC, VOR/TACAN System
WTE, Wind Turbine East
WTW, Wind Turbine West


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Danzig

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-895-OE
Prior Study No.
2021-WTE-4935-OE

Issued Date: 02/12/2025

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** MARKING & LIGHTING RECOMMENDATION ****

The Federal Aviation Administration has completed an evaluation of your request concerning:

Structure:	Wind Turbine T-83
Location:	Wishek, ND
Latitude:	46-16-17.48N NAD 83
Longitude:	99-29-27.65W
Heights:	2119 feet site elevation (SE)
	599 feet above ground level (AGL)
	2718 feet above mean sea level (AMSL)

Based on this evaluation, we are unable to accommodate your request.

The structure should continue to be marked/lighted utilizing White Paint/Synchronized Red Lights.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

Your request for consideration to utilize an Aircraft Detection Lighting System to operate the recommended lighting is not approved. See attached for additional condition(s) or information.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed

and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This evaluation concerns the effect of the marking/lighting changes on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

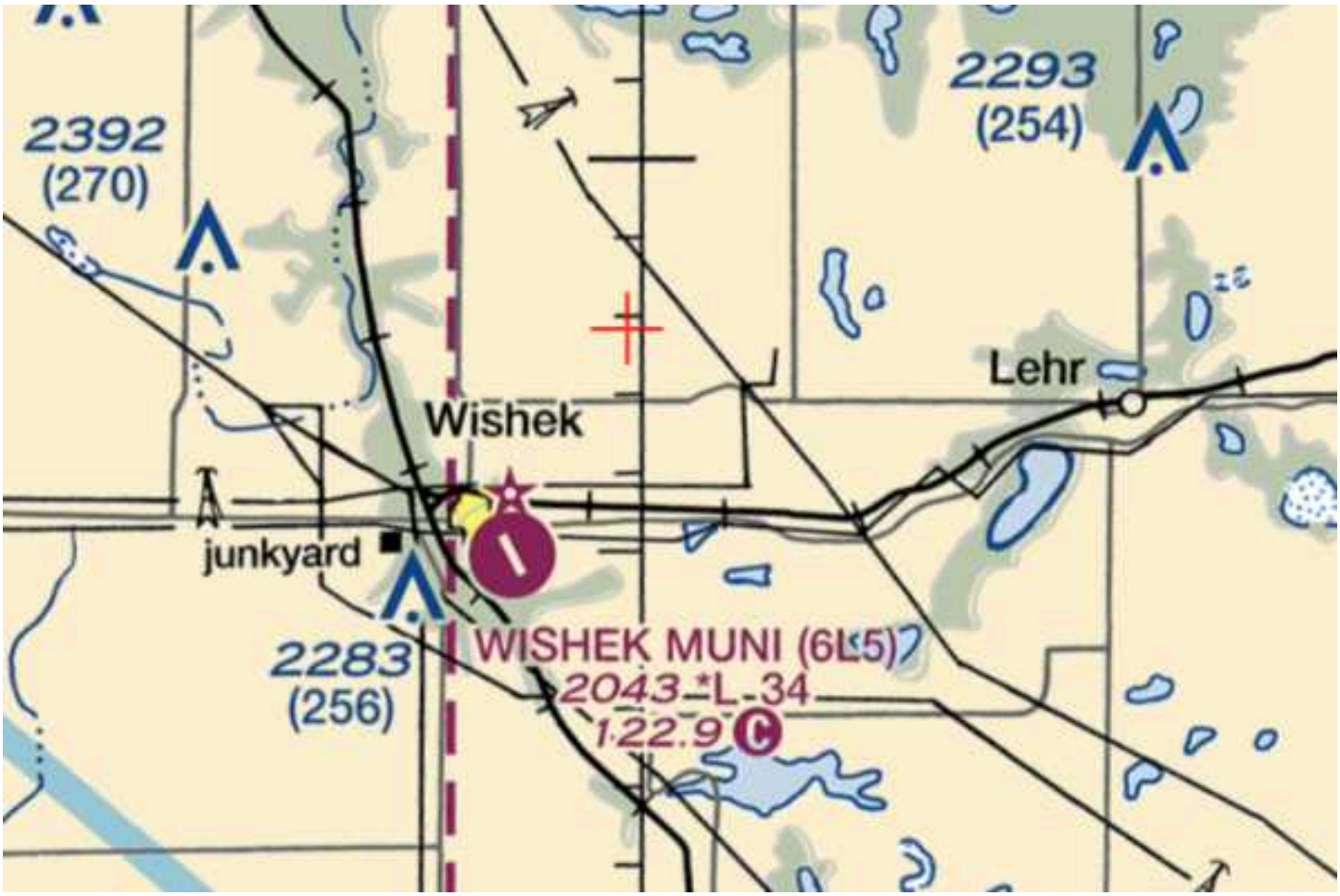
If we can be of further assistance, please contact our office at (404) 305-6051, or Christopher.evans@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-895-OE.

Signature Control No: 611179957-647316369 (MAL -WT)
Christopher Evans
Specialist

Attachment(s)
Additional Information
Map(s)

Due to the proximity of the structure to the Wishek Municipal Airport (6L5), the lights for this turbine must not be controlled by the ADLS system. To ensure the safety of aircraft engaged in low-level, agricultural and/or helicopter operations, the structure must remain marked and lighted in accordance with the original determination for this structure.

Sectional Map for ASN 2024-WTE-895-OE



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-895-OE
Prior Study No.
2021-WTE-4935-OE

Issued Date: 06/27/2024

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine T-83
Location:	Wishek, ND
Latitude:	46-16-17.48N NAD 83
Longitude:	99-29-27.65W
Heights:	2119 feet site elevation (SE)
	599 feet above ground level (AGL)
	2718 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 12/27/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before July 27, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on August 06, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should

be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Buck Reynolds, at (847) 294-7576, or Wayne.Reynolds@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-895-OE.

Signature Control No: 611179957-625757757 (DNH -WT)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Map(s)

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

A list of commonly used acronyms and abbreviations is available at the end of this document. A full list is available at the FAA's public website at https://oeaaa.faa.gov/oeaaa/downloads/external/content/FAA_Acronyms.pdf .

1. PROPOSAL DESCRIPTION

Proposed are 103 wind turbines for a project that lies approximately 1.97 NM to 3.95 NM west southwest of the airport reference point (ARP) of the Wishek Municipal Airport (6L5), Wishek, ND., extending clockwise to 2.64 NM to 7.13NM west of the 65L ARP, extending further clockwise to 3.06 NM to 3.88 NM north northeast of the 6L5 ARP.

For the sake of efficiency, all of the wind turbines in this project that have similar impacts are included in this narrative. All 103 wind turbines have been identified as having aeronautical effects which are outlined in the summary below.

The proposed wind turbines' described heights and locations are expressed in Above Ground Level (AGL) height, Above Mean Sea Level (AMSL) height and latitude (LAT)/longitude (LONG).

ASN	AGL	AMSL	LAT	LONG
2024-WTE-822-OE	599	2646	46-22-20.66N	99-39-36.26W
2024-WTE-823-OE	599	2640	46-22-26.42N	99-39-13.76W
2024-WTE-824-OE	599	2632	46-22-36.21N	99-38-57.17W
2024-WTE-825-OE	599	2740	46-19-21.83N	99-39-32.80W
2024-WTE-826-OE	599	2747	46-19-23.07N	99-39-09.52W
2024-WTE-827-OE	599	2706	46-17-10.19N	99-40-51.13W
2024-WTE-828-OE	599	2697	46-17-10.68N	99-40-28.47W
2024-WTE-829-OE	599	2685	46-17-11.39N	99-40-06.89W
2024-WTE-830-OE	599	2678	46-17-11.11N	99-39-36.18W
2024-WTE-831-OE	599	2693	46-17-22.64N	99-39-25.48W
2024-WTE-832-OE	599	2690	46-17-29.68N	99-39-07.10W
2024-WTE-833-OE	599	2700	46-17-58.60N	99-38-23.17W
2024-WTE-834-OE	599	2686	46-18-08.88N	99-38-17.12W
2024-WTE-835-OE	599	2686	46-18-24.47N	99-38-08.84W
2024-WTE-836-OE	599	2723	46-18-33.83N	99-37-58.90W
2024-WTE-837-OE	599	2711	46-18-51.34N	99-37-56.34W
2024-WTE-838-OE	599	2680	46-19-03.07N	99-37-49.70W
2024-WTE-839-OE	599	2646	46-18-55.13N	99-37-14.54W

2024-WTE-840-OE / 599 / 2670 / 46-19-21.11N / 99-36-33.26W
2024-WTE-841-OE / 599 / 2683 / 46-16-41.24N / 99-39-25.45W

2024-WTE-842-OE / 599 / 2681 / 46-16-47.67N / 99-39-10.43W
2024-WTE-843-OE / 599 / 2660 / 46-16-42.79N / 99-38-39.53W
2024-WTE-844-OE / 599 / 2651 / 46-16-51.88N / 99-38-26.23W
2024-WTE-845-OE / 599 / 2651 / 46-17-04.98N / 99-38-05.59W
2024-WTE-846-OE / 599 / 2674 / 46-17-20.72N / 99-37-56.23W
2024-WTE-847-OE / 599 / 2680 / 46-17-30.61N / 99-37-43.17W
2024-WTE-848-OE / 599 / 2668 / 46-17-59.09N / 99-37-19.19W
2024-WTE-849-OE / 599 / 2640 / 46-18-26.22N / 99-37-04.35W
2024-WTE-850-OE / 599 / 2633 / 46-16-52.86N / 99-37-07.88W
2024-WTE-851-OE / 599 / 2657 / 46-17-09.39N / 99-37-00.77W

2024-WTE-852-OE / 599 / 2670 / 46-17-21.00N / 99-36-52.26W
2024-WTE-853-OE / 599 / 2646 / 46-17-31.39N / 99-36-41.62W
2024-WTE-854-OE / 599 / 2633 / 46-17-41.37N / 99-36-36.64W
2024-WTE-855-OE / 599 / 2628 / 46-17-58.38N / 99-36-24.07W
2024-WTE-856-OE / 599 / 2594 / 46-18-36.13N / 99-35-14.91W
2024-WTE-857-OE / 599 / 2604 / 46-18-50.64N / 99-35-16.10W
2024-WTE-858-OE / 599 / 2600 / 46-19-05.37N / 99-35-11.90W
2024-WTE-859-OE / 599 / 2763 / 46-14-48.82N / 99-38-37.69W
2024-WTE-860-OE / 599 / 2729 / 46-14-53.46N / 99-38-19.53W
2024-WTE-861-OE / 599 / 2714 / 46-15-13.35N / 99-38-09.39W

2024-WTE-862-OE / 599 / 2714 / 46-15-21.25N / 99-37-57.66W
2024-WTE-863-OE / 599 / 2668 / 46-16-05.27N / 99-37-12.34W
2024-WTE-864-OE / 599 / 2631 / 46-16-14.38N / 99-37-00.06W
2024-WTE-865-OE / 599 / 2665 / 46-16-06.44N / 99-36-17.92W
2024-WTE-866-OE / 599 / 2623 / 46-16-17.58N / 99-35-59.50W
2024-WTE-867-OE / 599 / 2697 / 46-18-03.60N / 99-32-51.05W
2024-WTE-868-OE / 599 / 2743 / 46-18-10.09N / 99-32-28.16W
2024-WTE-869-OE / 599 / 2776 / 46-18-21.17N / 99-32-15.37W
2024-WTE-870-OE / 599 / 2767 / 46-18-32.54N / 99-32-07.81W
2024-WTE-871-OE / 599 / 2768 / 46-18-40.20N / 99-31-52.51W

2024-WTE-872-OE / 599 / 2797 / 46-19-21.37N / 99-31-26.62W
2024-WTE-873-OE / 599 / 2737 / 46-19-43.23N / 99-30-46.28W
2024-WTE-874-OE / 599 / 2695 / 46-19-52.97N / 99-30-33.28W
2024-WTE-875-OE / 599 / 2707 / 46-20-07.36N / 99-30-54.18W
2024-WTE-876-OE / 599 / 2719 / 46-20-15.34N / 99-31-35.65W
2024-WTE-877-OE / 599 / 2667 / 46-20-40.93N / 99-30-23.57W
2024-WTE-878-OE / 599 / 2716 / 46-14-48.22N / 99-36-54.75W
2024-WTE-879-OE / 599 / 2710 / 46-14-54.01N / 99-36-38.28W
2024-WTE-880-OE / 599 / 2692 / 46-14-56.63N / 99-36-14.82W
2024-WTE-881-OE / 599 / 2707 / 46-15-03.68N / 99-36-00.33W

2024-WTE-882-OE / 599 / 2722 / 46-17-13.91N / 99-32-13.87W
2024-WTE-883-OE / 599 / 2702 / 46-17-22.64N / 99-32-04.75W

2024-WTE-884-OE / 599 / 2758 / 46-18-11.56N / 99-31-24.04W
2024-WTE-885-OE / 599 / 2700 / 46-17-57.69N / 99-30-26.08W
2024-WTE-886-OE / 599 / 2705 / 46-17-49.06N / 99-30-15.49W
2024-WTE-887-OE / 599 / 2730 / 46-18-34.37N / 99-30-18.50W
2024-WTE-888-OE / 599 / 2727 / 46-18-05.96N / 99-29-03.65W
2024-WTE-889-OE / 599 / 2813 / 46-13-27.26N / 99-36-54.27W
2024-WTE-890-OE / 599 / 2762 / 46-14-00.18N / 99-36-53.19W
2024-WTE-891-OE / 599 / 2755 / 46-14-12.01N / 99-36-39.97W

2024-WTE-892-OE / 599 / 2707 / 46-14-08.35N / 99-35-19.52W
2024-WTE-893-OE / 599 / 2679 / 46-14-08.50N / 99-34-57.21W
2024-WTE-894-OE / 599 / 2665 / 46-13-30.79N / 99-34-24.50W
2024-WTE-895-OE / 599 / 2718 / 46-16-17.48N / 99-29-27.65W
2024-WTE-896-OE / 599 / 2757 / 46-16-43.28N / 99-29-31.15W
2024-WTE-897-OE / 599 / 2750 / 46-17-06.97N / 99-29-29.96W
2024-WTE-898-OE / 599 / 2765 / 46-19-24.06N / 99-40-23.61W
2024-WTE-899-OE / 599 / 2773 / 46-19-27.25N / 99-40-05.97W
2024-WTE-900-OE / 599 / 2763 / 46-19-42.87N / 99-39-03.07W
2024-WTE-901-OE / 599 / 2715 / 46-17-33.19N / 99-40-19.03W

2024-WTE-902-OE / 599 / 2725 / 46-17-43.65N / 99-40-08.96W
2024-WTE-903-OE / 599 / 2715 / 46-18-00.37N / 99-40-08.19W
2024-WTE-904-OE / 599 / 2787 / 46-15-46.97N / 99-42-35.58W
2024-WTE-905-OE / 599 / 2790 / 46-15-49.35N / 99-42-16.32W
2024-WTE-906-OE / 599 / 2785 / 46-15-52.71N / 99-41-56.74W
2024-WTE-907-OE / 599 / 2781 / 46-15-48.50N / 99-40-57.22W
2024-WTE-908-OE / 599 / 2784 / 46-15-58.17N / 99-40-43.79W
2024-WTE-909-OE / 599 / 2784 / 46-16-03.44N / 99-40-24.98W
2024-WTE-910-OE / 599 / 2723 / 46-16-14.21N / 99-40-05.49W
2024-WTE-911-OE / 599 / 2712 / 46-16-14.70N / 99-39-43.12W

2024-WTE-912-OE / 599 / 2629 / 46-16-20.97N / 99-35-37.39W
2024-WTE-913-OE / 599 / 2827 / 46-13-09.40N / 99-37-26.04W
2024-WTE-914-OE / 599 / 2804 / 46-12-39.11N / 99-36-54.20W
2024-WTE-915-OE / 599 / 2809 / 46-12-50.95N / 99-36-45.69W
2024-WTE-916-OE / 599 / 2864 / 46-12-50.65N / 99-35-57.99W
2024-WTE-917-OE / 599 / 2823 / 46-12-11.58N / 99-35-33.44W
2024-WTE-918-OE / 599 / 2791 / 46-12-19.36N / 99-35-20.55W
2024-WTE-919-OE / 599 / 2749 / 46-12-20.98N / 99-35-00.78W
2024-WTE-920-OE / 599 / 2749 / 46-12-24.53N / 99-34-38.61W
2024-WTE-921-OE / 599 / 2751 / 46-12-48.50N / 99-34-25.28W

2024-WTE-922-OE / 599 / 2680 / 46-16-16.57N / 99-39-22.49W
2024-WTE-923-OE / 599 / 2827 / 46-13-15.45N / 99-37-02.58W
2024-WTE-924-OE / 599 / 2821 / 46-12-43.36N / 99-36-16.39W

2. TITLE 14 CFR PART 77 - OBSTRUCTION STANDARDS EXCEEDED

a. Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. The proposals would all exceed this standard by 100 feet.

b. Section 77.17(a)(2): A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 NM miles of the established reference point of 6L5, and that height increases in the proportion of 100 feet for each additional NM from the airport up to a maximum of 499 feet. The following would exceed by:

2024-WTE-829-OE	119 feet
2024-WTE-830-OE	152 feet
2024-WTE-831-OE	155 feet
2024-WTE-832-OE	169 feet
2024-WTE-833-OE	186 feet
2024-WTE-834-OE	181 feet
2024-WTE-835-OE	172 feet
2024-WTE-836-OE	171 feet
2024-WTE-837-OE	153 feet
2024-WTE-838-OE	144 feet
2024-WTE-839-OE	181 feet
2024-WTE-840-OE	175 feet
2024-WTE-841-OE	182 feet
2024-WTE-842-OE	194 feet
2024-WTE-843-OE	231 feet
2024-WTE-844-OE	239 feet
2024-WTE-845-OE	251 feet
2024-WTE-846-OE	247 feet
2024-WTE-847-OE	251 feet
2024-WTE-848-OE	244 feet
2024-WTE-849-OE	223 feet
2024-WTE-850-OE	310 feet
2024-WTE-851-OE	311 feet
2024-WTE-852-OE	308 feet
2024-WTE-853-OE	307 feet
2024-WTE-854-OE	291 feet
2024-WTE-855-OE	276 feet
2024-WTE-856-OE	238 feet
2024-WTE-857-OE	226 feet
2024-WTE-858-OE	202 feet
2024-WTE-859-OE	266 feet
2024-WTE-860-OE	287 feet
2024-WTE-861-OE	298 feet
2024-WTE-862-OE	310 feet
2024-WTE-863-OE	347 feet
2024-WTE-864-OE	344 feet
2024-WTE-865-OE	399 feet
2024-WTE-866-OE	380 feet

2024-WTE-867-OE	392 feet
2024-WTE-868-OE	383 feet
2024-WTE-869-OE	365 feet
2024-WTE-870-OE	346 feet
2024-WTE-871-OE	333 feet
2024-WTE-872-OE	261 feet
2024-WTE-873-OE	217 feet
2024-WTE-874-OE	198 feet
2024-WTE-875-OE	180 feet
2024-WTE-876-OE	173 feet
2024-WTE-877-OE	118 feet
2024-WTE-878-OE	384 feet
2024-WTE-879-OE	399 feet
2024-WTE-880-OE	399 feet
2024-WTE-881-OE	399 feet
2024-WTE-882-OE	399 feet
2024-WTE-883-OE	399 feet
2024-WTE-884-OE	376 feet
2024-WTE-885-OE	378 feet
2024-WTE-886-OE	386 feet
2024-WTE-887-OE	318 feet
2024-WTE-888-OE	319 feet
2024-WTE-889-OE	350 feet
2024-WTE-890-OE	372 feet
2024-WTE-891-OE	392 feet
2024-WTE-892-OE	399 feet
2024-WTE-893-OE	399 feet
2024-WTE-894-OE	399 feet
2024-WTE-895-OE	399 feet
2024-WTE-896-OE	399 feet
2024-WTE-897-OE	399 feet
2024-WTE-908-OE	112 feet
2024-WTE-909-OE	131 feet
2024-WTE-910-OE	150 feet
2024-WTE-911-OE	175 feet
2024-WTE-912-OE	387 feet
2024-WTE-913-OE	304 feet
2024-WTE-914-OE	309 feet
2024-WTE-915-OE	328 feet
2024-WTE-916-OE	372 feet
2024-WTE-917-OE	344 feet
2024-WTE-918-OE	364 feet
2024-WTE-919-OE	379 feet
2024-WTE-920-OE	398 feet

2024-WTE-921-OE 399 feet
2024-WTE-922-OE 197 feet
2024-WTE-923-OE 333 feet
2024-WTE-924-OE 347 feet
2024-WTE-926-OE 134 feet
2024-WTE-927-OE 144 feet
2024-WTE-928-OE 150 feet
2024-WTE-929-OE 150 feet

c. Section 77.17 (a)(3): A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

The following proposed turbines increase the Linton Municipal (7L2) Linton, ND. RNAV (GPS) RWY 27 ORIG-C, Minimum Safe Altitude (MSA) from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-898-OE
2024-WTE-899-OE
2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE

2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE

2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines increase the Linton Municipal (7L2) Linton ND. RNAV (GPS) RWY 9 ORIG-C, MSA from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE

2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines penetrate the Wishek Municipal (6L5) Wishek, ND., RWY 32 (PLAN on FILE) 40:1 departure surface by _____ feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES RWY 32, STD with a minimum climb gradient increase from an anticipated 200 to _____ feet per NM to _____ feet AMSL.

ASN	penetration in feet	feet per/NM	to feet AMSL
2024-WTE-847-OE	7	204	2900
2024-WTE-850-OE	56	222	2900
2024-WTE-851-OE	58	233	2900
2024-WTE-852-OE	89	232	2900
2024-WTE-853-OE	65	223	2900
2024-WTE-854-OE	31	222	2900
2024-WTE-862-OE	4	201	3000
2024-WTE-863-OE	76	234	2900
2024-WTE-864-OE	65	231	2900
2024-WTE-865-OE	13	295	2900
2024-WTE-866-OE	162	294	2900
2024-WTE-867-OE	211	306	3000
2024-WTE-868-OE	223	309	3000
2024-WTE-869-OE	220	303	3100
2024-WTE-870-OE	180	278	3000
2024-WTE-871-OE	150	262	3100
2024-WTE-872-OE	67	226	3100
2024-WTE-878-OE	40	224	3000
2024-WTE-879-OE	64	244	3000
2024-WTE-880-OE	85	264	2900
2024-WTE-881-OE	136	320	2900
2024-WTE-882-OE	234	418	2900
2024-WTE-883-OE	215	377	3000
2024-WTE-884-OE	157	298	3000
2024-WTE-885-OE	20	212	3000
2024-WTE-886-OE	14	208	3000
2024-WTE-887-OE	12	209	3000
2024-WTE-891-OE	24	214	3000
2024-WTE-892-OE	56	237	3000
2024-WTE-893-OE	61	245	2900
2024-WTE-896-OE	31	224	3000

2024-WTE-897-OE	17	211	3000
2024-WTE-912-OE	214	331	2900

The following proposed turbines would increase the Wishek Municipal Airport (6L5) Wishek, ND. minimum altitudes for the RNAV (GPS) RWY 14 (PROPOSED), LNAV MDA from an anticipated 2560 feet AMSL to as much as 2920 feet AMSL and the CAT A/B circling MDA from an anticipated 2560/2600 feet AMSL to as much as 2920 feet AMSL.

2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE

The following proposed turbines would increase the Minimum Vectoring Altitude (MVA) for Bismarck TRACON (BIS) Bismarck, ND., BIS_MVA_FUS3_2023 and BIS_MVA_FUS5_2023, Sector E from 3700 feet AMSL to 3800 feet AMSL.

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

d. Section 77.17(a)(4): A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.

The following proposed turbines would Increase the Minimum Obstruction Clearance Altitude (MOCA) along V15 from BISMARK (BIS) VORTAC, 117 degree radial to ABERDEEN (ABR) VORTAC from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-890-OE
2024-WTE-891-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

3. TITLE 14 CFR PART 77 - EFFECT ON AERONAUTICAL OPERATIONS

a. Section 77.29 (a)(1): impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At a height greater than 499 feet AGL, the proposed wind farm would extend into airspace normally used for VFR en route flight and may be located within 2 statute miles (SM) of potential VFR Routes as defined by FAA Order 7400.2, Section 6-3-8. The turbines within 2 SM of a VFR Route would have an adverse effect upon VFR air navigation. Further study was required to determine whether the proposed structures would have a substantial adverse effect on VFR operations.

4. TITLE 14 CFR PART 77 - FURTHER STUDY AND PUBLIC COMMENTS

In order to facilitate the public comment process, all 103 studies were circularized under ASN 2024-WTE-853-OE on 04/09/2024, to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. There was one comment received as a result of the circularization concluding on 05/16/2024. The comment(s) is summarized as follows:

Comments: We had Badger Wind, LLC remove 5 wind turbines from their plans in 2021 because they would interfere with our plans to add instrument approach to our airport in the future. I would like them to remove this wind turbine T-32 from their plans. It is to close to our airport. They have the whole country side to develop wind turbines, I do not understand why they want to place wind turbines this close to town and this close to an airport. Please do not allow them to place a tower this close to our airport.

FAA Response: The FAA study indicates that this turbine does not impact future airport plans other than the PLAN on FILE: Obstacle penetrates RWY 32 40:1 departure surface by 65 feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES, RWY 32, STD with a minimum climb gradient increase from anticipated 200 to 223 feet per NM to 2900 feet AMSL. The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. Additionally, the total IFR traffic counts for the 6L5 airport for the period of 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity.. Therefore, the proposed wind farm would not have a substantial adverse effect on IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Divion responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is a proposed TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) ruway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt ruway that would be an A(NP) runway, which is a utility ruway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.

5. BASIS FOR DETERMINATION

a. IFR EFFECTS

The aeronautical study identified an IFR effect(s) for 7L2, 6L5, BIS and V15. MSAs are the minimum obstacle clearance altitudes within a specified distance from the navigation facilities upon which procedures are predicated. MSA altitudes are designed for emergency use only and are not routinely used by pilots or by air traffic control. Consequently, MSAs are not circulated for public comment as they are not considered a factor in determining the extent of adverse effect.

MVAs are solely used by ATC, not published for public use and therefore are not circulated for public comment. A review by the controlling facility determined that increasing the altitude in the sector would ensure the required obstacle clearance is maintained and therefore would not have a substantial adverse effect on air traffic operations.

MOCAs assure obstacle clearance over the entire route segment to which they apply and assure navigational signal coverage within 22 NM of the associated VOR navigational facility. For that portion of the route

segment beyond 22 NM from the VOR, where the MOCA is lower than the MEA and there are no plans to lower the MEA to the MOCA, a structure that affects only the MOCA would not be considered to have substantial adverse effect. Other situations require study as ATC may assign altitudes down to the MOCA under certain conditions. Further study revealed that only the MOCA is effected in this area and that the MOCA is not routinely assigned by ATC.

The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. The total IFR traffic counts for 6L5 f from 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity. Therefore, the proposed wind farm would not have a substantial adverse effect on any IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Division responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is proposed as a TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) runway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt runway that would be an A(NP) runway, which is a utility runway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.
The proposed structures would have no effect on any other existing or proposed arrival, departure, or en route IFR operations or procedures.

b. VFR EFFECTS
The aeronautical study identified no effect on any existing or proposed VFR arrival or departure operations. The proposals would be located beyond the normal traffic pattern airspace for 6L5 and any other public use or military airport. At 599 feet AGL, the structures would be located within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm.

In accordance with FAA Order 7400.2, the proposed wind farm would not affect a significant volume of aircraft and therefore, it is determined they will not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

c. RADAR EFFECTS
The aeronautical study identified no effect on ATC radar, direction finders, ATC tower line-of-sight visibility, air navigation, communication facilities, and other surveillance systems for any known public-use or military airports.

d. CUMULATIVE EFFECT
The cumulative impact of the proposed structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any substantial adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposals affect the capacity of any known existing or planned public-use or military airport.

6. DETERMINATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation providing the conditions set forth in this determination are met.

7. CONDITIONS

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, sixty (60) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, ten (10) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE

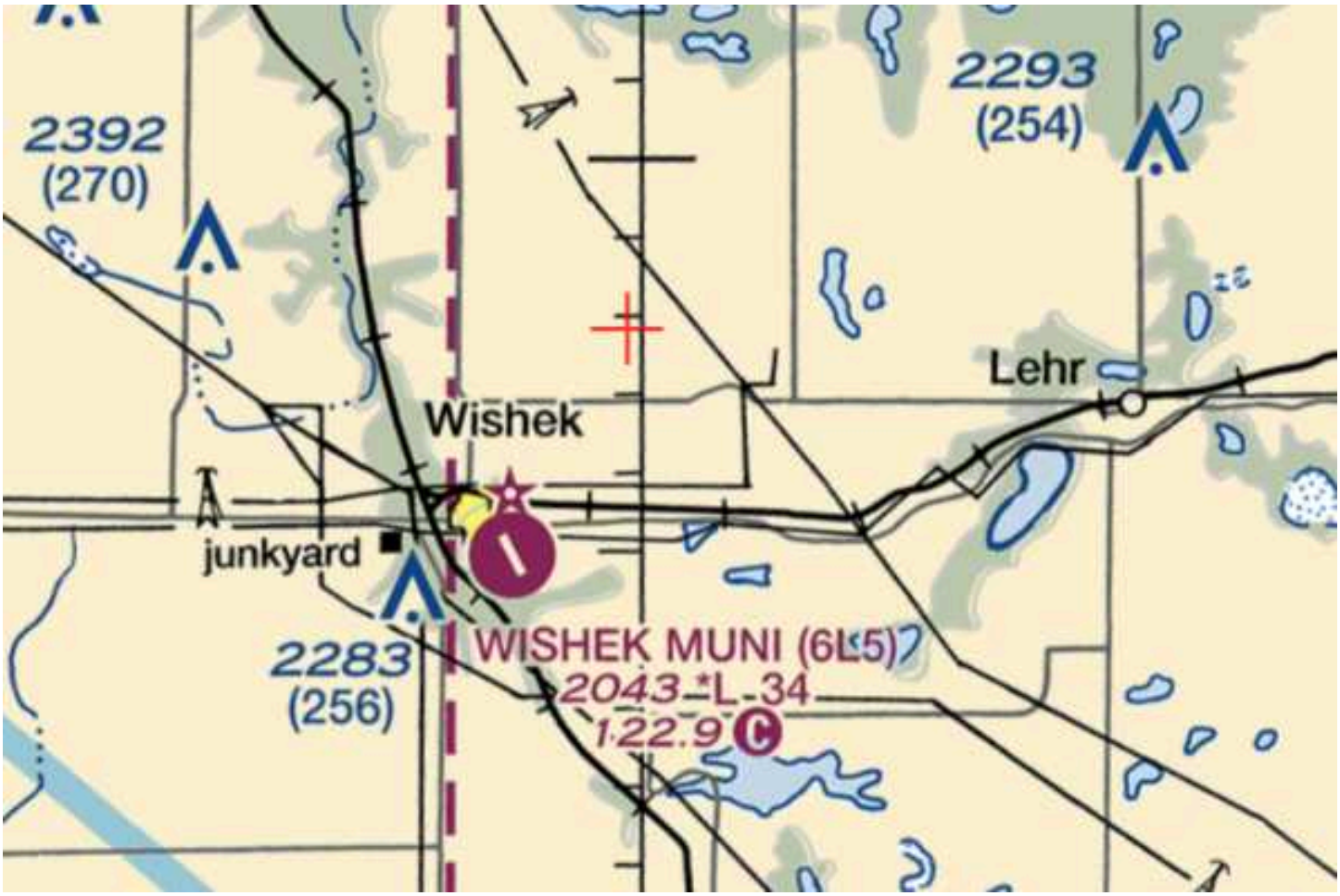
2024-WTE-837-OE
2024-WTE-838-OE
2024-WTE-839-OE
2024-WTE-840-OE
2024-WTE-847-OE
2024-WTE-849-OE
2024-WTE-850-OE
2024-WTE-851-OE
2024-WTE-852-OE
2024-WTE-853-OE
2024-WTE-854-OE
2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-863-OE
2024-WTE-864-OE
2024-WTE-865-OE
2024-WTE-866-OE
2024-WTE-867-OE
2024-WTE-868-OE
2024-WTE-878-OE
2024-WTE-879-OE
2024-WTE-880-OE
2024-WTE-881-OE
2024-WTE-882-OE
2024-WTE-883-OE
2024-WTE-884-OE
2024-WTE-885-OE
2024-WTE-886-OE
2024-WTE-887-OE
2024-WTE-892-OE
2024-WTE-893-OE
2024-WTE-896-OE
2024-WTE-897-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-919-OE
2024-WTE-920-OE

Additionally, within five days after each project structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (https://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

****

ACRONYMS & ABBREVIATIONS
AGL, Above Ground Level
AMSL, Above Mean Sea Level
ARP, Airport Reference Point
ARSR, Air Route Surveillance Radar
ARTCC, Air Route Traffic Control Center
ASN, Aeronautical Study Number
ASR, Airport Surveillance Radar
ATC, Air Traffic Control
ATCT, Air Traffic Control Tower
CARSR, Common Air Route Surveillance Radar
CAT, Category
CFR, Code of Federal Regulations
CG, Climb Gradient
DA, Decision Altitude
DME, Distance Measuring Equipment
FAA, Federal Aviation Administration
FUS, Fusion
GPS, Global Positioning System
IAF, Initial Approach Fix
IAP, Instrument Approach Procedure
ICA, Initial Climb Area
IFR, Instrument Flight Rules
INT, Intersection
LAT, Latitude
LNAV, Lateral Navigation
LOC, Localizer
LONG, Longitude
LP, Localizer Performance
LPV, Localizer Performance with Vertical Guidance
MDA, Minimum Descent Altitude
MEA, Minimum En route Altitude
MET, Meteorological Evaluation Tower
MIA, Minimum IFR Altitude
Min, Minimum
MOCA, Minimum Obstruction Clearance Altitude
MSA, Minimum Safe Altitude
MSL, Mean Sea Level
MVA, Minimum Vectoring Altitude
NA, Not Authorized
NAS, National Airspace System

NAVAID, Navigational Aid
NDB, Non-Directional Radio Beacon
NEH, No Effect Height
NM, Nautical Mile
NOTAM, Notice to Airmen
NPF, Notice of Preliminary Findings
OCS, Obstacle Clearance Surface
OE, Obstruction Evaluation
OEG, Obstruction Evaluation Group
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace.
P-NOTAM, Permanent Notice to Airmen
RLOS, Radar Line of Sight
RNAV, Area Navigation
RNP, Required Navigation Performance
RWY, Runway
S-, Straight-in
SE, Site Elevation
S-LOC, Straight-in Localizer
SM, Statute Miles
Std., Standard
TAA, Terminal Arrival Area
TACAN, Tactical Air Navigation System
TERPS, Terminal Instrument Procedures
TPA, Traffic Pattern Airspace
TRACON, Terminal Radar Approach Control
V, Victor Airway
VFR, Visual Flight Rules
VHF, Very High Frequency
VOR, VHF Omnidirectional Radio Range System
VORTAC, VOR/TACAN System
WTE, Wind Turbine East
WTW, Wind Turbine West


2392
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Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-896-OE
Prior Study No.
2021-WTE-4934-OE

Issued Date: 02/12/2025

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** MARKING & LIGHTING RECOMMENDATION ****

The Federal Aviation Administration has completed an evaluation of your request concerning:

Structure:	Wind Turbine T-84
Location:	Wishek, ND
Latitude:	46-16-43.28N NAD 83
Longitude:	99-29-31.15W
Heights:	2158 feet site elevation (SE)
	599 feet above ground level (AGL)
	2757 feet above mean sea level (AMSL)

Based on this evaluation, we are unable to accommodate your request.

The structure should continue to be marked/lighted utilizing White Paint/Synchronized Red Lights.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

Your request for consideration to utilize an Aircraft Detection Lighting System to operate the recommended lighting is not approved. See attached for additional condition(s) or information.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed

and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This evaluation concerns the effect of the marking/lighting changes on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6051, or Christopher.evans@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-896-OE.

Signature Control No: 611179958-647316371 (MAL -WT)
Christopher Evans
Specialist

Attachment(s)
Additional Information
Map(s)

Due to the proximity of the structure to the Wishek Municipal Airport (6L5), the lights for this turbine must not be controlled by the ADLS system. To ensure the safety of aircraft engaged in low-level, agricultural and/or helicopter operations, the structure must remain marked and lighted in accordance with the original determination for this structure.


2392
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Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-896-OE
Prior Study No.
2021-WTE-4934-OE

Issued Date: 06/27/2024

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine T-84
Location:	Wishek, ND
Latitude:	46-16-43.28N NAD 83
Longitude:	99-29-31.15W
Heights:	2158 feet site elevation (SE)
	599 feet above ground level (AGL)
	2757 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 12/27/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before July 27, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on August 06, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should

be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Buck Reynolds, at (847) 294-7576, or Wayne.Reynolds@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-896-OE.

Signature Control No: 611179958-625761222 (DNH -WT)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Map(s)

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

A list of commonly used acronyms and abbreviations is available at the end of this document. A full list is available at the FAA's public website at https://oeaaa.faa.gov/oeaaa/downloads/external/content/FAA_Acronyms.pdf .

1. PROPOSAL DESCRIPTION

Proposed are 103 wind turbines for a project that lies approximately 1.97 NM to 3.95 NM west southwest of the airport reference point (ARP) of the Wishek Municipal Airport (6L5), Wishek, ND., extending clockwise to 2.64 NM to 7.13NM west of the 65L ARP, extending further clockwise to 3.06 NM to 3.88 NM north northeast of the 6L5 ARP.

For the sake of efficiency, all of the wind turbines in this project that have similar impacts are included in this narrative. All 103 wind turbines have been identified as having aeronautical effects which are outlined in the summary below.

The proposed wind turbines' described heights and locations are expressed in Above Ground Level (AGL) height, Above Mean Sea Level (AMSL) height and latitude (LAT)/longitude (LONG).

ASN	AGL	AMSL	LAT	LONG
2024-WTE-822-OE	599	2646	46-22-20.66N	99-39-36.26W
2024-WTE-823-OE	599	2640	46-22-26.42N	99-39-13.76W
2024-WTE-824-OE	599	2632	46-22-36.21N	99-38-57.17W
2024-WTE-825-OE	599	2740	46-19-21.83N	99-39-32.80W
2024-WTE-826-OE	599	2747	46-19-23.07N	99-39-09.52W
2024-WTE-827-OE	599	2706	46-17-10.19N	99-40-51.13W
2024-WTE-828-OE	599	2697	46-17-10.68N	99-40-28.47W
2024-WTE-829-OE	599	2685	46-17-11.39N	99-40-06.89W
2024-WTE-830-OE	599	2678	46-17-11.11N	99-39-36.18W
2024-WTE-831-OE	599	2693	46-17-22.64N	99-39-25.48W
2024-WTE-832-OE	599	2690	46-17-29.68N	99-39-07.10W
2024-WTE-833-OE	599	2700	46-17-58.60N	99-38-23.17W
2024-WTE-834-OE	599	2686	46-18-08.88N	99-38-17.12W
2024-WTE-835-OE	599	2686	46-18-24.47N	99-38-08.84W
2024-WTE-836-OE	599	2723	46-18-33.83N	99-37-58.90W
2024-WTE-837-OE	599	2711	46-18-51.34N	99-37-56.34W
2024-WTE-838-OE	599	2680	46-19-03.07N	99-37-49.70W
2024-WTE-839-OE	599	2646	46-18-55.13N	99-37-14.54W

2024-WTE-840-OE / 599 / 2670 / 46-19-21.11N / 99-36-33.26W
2024-WTE-841-OE / 599 / 2683 / 46-16-41.24N / 99-39-25.45W

2024-WTE-842-OE / 599 / 2681 / 46-16-47.67N / 99-39-10.43W
2024-WTE-843-OE / 599 / 2660 / 46-16-42.79N / 99-38-39.53W
2024-WTE-844-OE / 599 / 2651 / 46-16-51.88N / 99-38-26.23W
2024-WTE-845-OE / 599 / 2651 / 46-17-04.98N / 99-38-05.59W
2024-WTE-846-OE / 599 / 2674 / 46-17-20.72N / 99-37-56.23W
2024-WTE-847-OE / 599 / 2680 / 46-17-30.61N / 99-37-43.17W
2024-WTE-848-OE / 599 / 2668 / 46-17-59.09N / 99-37-19.19W
2024-WTE-849-OE / 599 / 2640 / 46-18-26.22N / 99-37-04.35W
2024-WTE-850-OE / 599 / 2633 / 46-16-52.86N / 99-37-07.88W
2024-WTE-851-OE / 599 / 2657 / 46-17-09.39N / 99-37-00.77W

2024-WTE-852-OE / 599 / 2670 / 46-17-21.00N / 99-36-52.26W
2024-WTE-853-OE / 599 / 2646 / 46-17-31.39N / 99-36-41.62W
2024-WTE-854-OE / 599 / 2633 / 46-17-41.37N / 99-36-36.64W
2024-WTE-855-OE / 599 / 2628 / 46-17-58.38N / 99-36-24.07W
2024-WTE-856-OE / 599 / 2594 / 46-18-36.13N / 99-35-14.91W
2024-WTE-857-OE / 599 / 2604 / 46-18-50.64N / 99-35-16.10W
2024-WTE-858-OE / 599 / 2600 / 46-19-05.37N / 99-35-11.90W
2024-WTE-859-OE / 599 / 2763 / 46-14-48.82N / 99-38-37.69W
2024-WTE-860-OE / 599 / 2729 / 46-14-53.46N / 99-38-19.53W
2024-WTE-861-OE / 599 / 2714 / 46-15-13.35N / 99-38-09.39W

2024-WTE-862-OE / 599 / 2714 / 46-15-21.25N / 99-37-57.66W
2024-WTE-863-OE / 599 / 2668 / 46-16-05.27N / 99-37-12.34W
2024-WTE-864-OE / 599 / 2631 / 46-16-14.38N / 99-37-00.06W
2024-WTE-865-OE / 599 / 2665 / 46-16-06.44N / 99-36-17.92W
2024-WTE-866-OE / 599 / 2623 / 46-16-17.58N / 99-35-59.50W
2024-WTE-867-OE / 599 / 2697 / 46-18-03.60N / 99-32-51.05W
2024-WTE-868-OE / 599 / 2743 / 46-18-10.09N / 99-32-28.16W
2024-WTE-869-OE / 599 / 2776 / 46-18-21.17N / 99-32-15.37W
2024-WTE-870-OE / 599 / 2767 / 46-18-32.54N / 99-32-07.81W
2024-WTE-871-OE / 599 / 2768 / 46-18-40.20N / 99-31-52.51W

2024-WTE-872-OE / 599 / 2797 / 46-19-21.37N / 99-31-26.62W
2024-WTE-873-OE / 599 / 2737 / 46-19-43.23N / 99-30-46.28W
2024-WTE-874-OE / 599 / 2695 / 46-19-52.97N / 99-30-33.28W
2024-WTE-875-OE / 599 / 2707 / 46-20-07.36N / 99-30-54.18W
2024-WTE-876-OE / 599 / 2719 / 46-20-15.34N / 99-31-35.65W
2024-WTE-877-OE / 599 / 2667 / 46-20-40.93N / 99-30-23.57W
2024-WTE-878-OE / 599 / 2716 / 46-14-48.22N / 99-36-54.75W
2024-WTE-879-OE / 599 / 2710 / 46-14-54.01N / 99-36-38.28W
2024-WTE-880-OE / 599 / 2692 / 46-14-56.63N / 99-36-14.82W
2024-WTE-881-OE / 599 / 2707 / 46-15-03.68N / 99-36-00.33W

2024-WTE-882-OE / 599 / 2722 / 46-17-13.91N / 99-32-13.87W
2024-WTE-883-OE / 599 / 2702 / 46-17-22.64N / 99-32-04.75W

2024-WTE-884-OE / 599 / 2758 / 46-18-11.56N / 99-31-24.04W
2024-WTE-885-OE / 599 / 2700 / 46-17-57.69N / 99-30-26.08W
2024-WTE-886-OE / 599 / 2705 / 46-17-49.06N / 99-30-15.49W
2024-WTE-887-OE / 599 / 2730 / 46-18-34.37N / 99-30-18.50W
2024-WTE-888-OE / 599 / 2727 / 46-18-05.96N / 99-29-03.65W
2024-WTE-889-OE / 599 / 2813 / 46-13-27.26N / 99-36-54.27W
2024-WTE-890-OE / 599 / 2762 / 46-14-00.18N / 99-36-53.19W
2024-WTE-891-OE / 599 / 2755 / 46-14-12.01N / 99-36-39.97W

2024-WTE-892-OE / 599 / 2707 / 46-14-08.35N / 99-35-19.52W
2024-WTE-893-OE / 599 / 2679 / 46-14-08.50N / 99-34-57.21W
2024-WTE-894-OE / 599 / 2665 / 46-13-30.79N / 99-34-24.50W
2024-WTE-895-OE / 599 / 2718 / 46-16-17.48N / 99-29-27.65W
2024-WTE-896-OE / 599 / 2757 / 46-16-43.28N / 99-29-31.15W
2024-WTE-897-OE / 599 / 2750 / 46-17-06.97N / 99-29-29.96W
2024-WTE-898-OE / 599 / 2765 / 46-19-24.06N / 99-40-23.61W
2024-WTE-899-OE / 599 / 2773 / 46-19-27.25N / 99-40-05.97W
2024-WTE-900-OE / 599 / 2763 / 46-19-42.87N / 99-39-03.07W
2024-WTE-901-OE / 599 / 2715 / 46-17-33.19N / 99-40-19.03W

2024-WTE-902-OE / 599 / 2725 / 46-17-43.65N / 99-40-08.96W
2024-WTE-903-OE / 599 / 2715 / 46-18-00.37N / 99-40-08.19W
2024-WTE-904-OE / 599 / 2787 / 46-15-46.97N / 99-42-35.58W
2024-WTE-905-OE / 599 / 2790 / 46-15-49.35N / 99-42-16.32W
2024-WTE-906-OE / 599 / 2785 / 46-15-52.71N / 99-41-56.74W
2024-WTE-907-OE / 599 / 2781 / 46-15-48.50N / 99-40-57.22W
2024-WTE-908-OE / 599 / 2784 / 46-15-58.17N / 99-40-43.79W
2024-WTE-909-OE / 599 / 2784 / 46-16-03.44N / 99-40-24.98W
2024-WTE-910-OE / 599 / 2723 / 46-16-14.21N / 99-40-05.49W
2024-WTE-911-OE / 599 / 2712 / 46-16-14.70N / 99-39-43.12W

2024-WTE-912-OE / 599 / 2629 / 46-16-20.97N / 99-35-37.39W
2024-WTE-913-OE / 599 / 2827 / 46-13-09.40N / 99-37-26.04W
2024-WTE-914-OE / 599 / 2804 / 46-12-39.11N / 99-36-54.20W
2024-WTE-915-OE / 599 / 2809 / 46-12-50.95N / 99-36-45.69W
2024-WTE-916-OE / 599 / 2864 / 46-12-50.65N / 99-35-57.99W
2024-WTE-917-OE / 599 / 2823 / 46-12-11.58N / 99-35-33.44W
2024-WTE-918-OE / 599 / 2791 / 46-12-19.36N / 99-35-20.55W
2024-WTE-919-OE / 599 / 2749 / 46-12-20.98N / 99-35-00.78W
2024-WTE-920-OE / 599 / 2749 / 46-12-24.53N / 99-34-38.61W
2024-WTE-921-OE / 599 / 2751 / 46-12-48.50N / 99-34-25.28W

2024-WTE-922-OE / 599 / 2680 / 46-16-16.57N / 99-39-22.49W
2024-WTE-923-OE / 599 / 2827 / 46-13-15.45N / 99-37-02.58W
2024-WTE-924-OE / 599 / 2821 / 46-12-43.36N / 99-36-16.39W

2. TITLE 14 CFR PART 77 - OBSTRUCTION STANDARDS EXCEEDED

a. Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. The proposals would all exceed this standard by 100 feet.

b. Section 77.17(a)(2): A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 NM miles of the established reference point of 6L5, and that height increases in the proportion of 100 feet for each additional NM from the airport up to a maximum of 499 feet. The following would exceed by:

2024-WTE-829-OE	119 feet
2024-WTE-830-OE	152 feet
2024-WTE-831-OE	155 feet
2024-WTE-832-OE	169 feet
2024-WTE-833-OE	186 feet
2024-WTE-834-OE	181 feet
2024-WTE-835-OE	172 feet
2024-WTE-836-OE	171 feet
2024-WTE-837-OE	153 feet
2024-WTE-838-OE	144 feet
2024-WTE-839-OE	181 feet
2024-WTE-840-OE	175 feet
2024-WTE-841-OE	182 feet
2024-WTE-842-OE	194 feet
2024-WTE-843-OE	231 feet
2024-WTE-844-OE	239 feet
2024-WTE-845-OE	251 feet
2024-WTE-846-OE	247 feet
2024-WTE-847-OE	251 feet
2024-WTE-848-OE	244 feet
2024-WTE-849-OE	223 feet
2024-WTE-850-OE	310 feet
2024-WTE-851-OE	311 feet
2024-WTE-852-OE	308 feet
2024-WTE-853-OE	307 feet
2024-WTE-854-OE	291 feet
2024-WTE-855-OE	276 feet
2024-WTE-856-OE	238 feet
2024-WTE-857-OE	226 feet
2024-WTE-858-OE	202 feet
2024-WTE-859-OE	266 feet
2024-WTE-860-OE	287 feet
2024-WTE-861-OE	298 feet
2024-WTE-862-OE	310 feet
2024-WTE-863-OE	347 feet
2024-WTE-864-OE	344 feet
2024-WTE-865-OE	399 feet
2024-WTE-866-OE	380 feet

2024-WTE-867-OE	392 feet
2024-WTE-868-OE	383 feet
2024-WTE-869-OE	365 feet
2024-WTE-870-OE	346 feet
2024-WTE-871-OE	333 feet
2024-WTE-872-OE	261 feet
2024-WTE-873-OE	217 feet
2024-WTE-874-OE	198 feet
2024-WTE-875-OE	180 feet
2024-WTE-876-OE	173 feet
2024-WTE-877-OE	118 feet
2024-WTE-878-OE	384 feet
2024-WTE-879-OE	399 feet
2024-WTE-880-OE	399 feet
2024-WTE-881-OE	399 feet
2024-WTE-882-OE	399 feet
2024-WTE-883-OE	399 feet
2024-WTE-884-OE	376 feet
2024-WTE-885-OE	378 feet
2024-WTE-886-OE	386 feet
2024-WTE-887-OE	318 feet
2024-WTE-888-OE	319 feet
2024-WTE-889-OE	350 feet
2024-WTE-890-OE	372 feet
2024-WTE-891-OE	392 feet
2024-WTE-892-OE	399 feet
2024-WTE-893-OE	399 feet
2024-WTE-894-OE	399 feet
2024-WTE-895-OE	399 feet
2024-WTE-896-OE	399 feet
2024-WTE-897-OE	399 feet
2024-WTE-908-OE	112 feet
2024-WTE-909-OE	131 feet
2024-WTE-910-OE	150 feet
2024-WTE-911-OE	175 feet
2024-WTE-912-OE	387 feet
2024-WTE-913-OE	304 feet
2024-WTE-914-OE	309 feet
2024-WTE-915-OE	328 feet
2024-WTE-916-OE	372 feet
2024-WTE-917-OE	344 feet
2024-WTE-918-OE	364 feet
2024-WTE-919-OE	379 feet
2024-WTE-920-OE	398 feet

2024-WTE-921-OE 399 feet
2024-WTE-922-OE 197 feet
2024-WTE-923-OE 333 feet
2024-WTE-924-OE 347 feet
2024-WTE-926-OE 134 feet
2024-WTE-927-OE 144 feet
2024-WTE-928-OE 150 feet
2024-WTE-929-OE 150 feet

c. Section 77.17 (a)(3): A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

The following proposed turbines increase the Linton Municipal (7L2) Linton, ND. RNAV (GPS) RWY 27 ORIG-C, Minimum Safe Altitude (MSA) from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-898-OE
2024-WTE-899-OE
2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE

2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE

2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines increase the Linton Municipal (7L2) Linton ND. RNAV (GPS) RWY 9 ORIG-C, MSA from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE

2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines penetrate the Wishek Municipal (6L5) Wishek, ND., RWY 32 (PLAN on FILE) 40:1 departure surface by _____ feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES RWY 32, STD with a minimum climb gradient increase from an anticipated 200 to _____ feet per NM to _____ feet AMSL.

ASN	penetration in feet	feet per/NM	to feet AMSL
2024-WTE-847-OE	7	204	2900
2024-WTE-850-OE	56	222	2900
2024-WTE-851-OE	58	233	2900
2024-WTE-852-OE	89	232	2900
2024-WTE-853-OE	65	223	2900
2024-WTE-854-OE	31	222	2900
2024-WTE-862-OE	4	201	3000
2024-WTE-863-OE	76	234	2900
2024-WTE-864-OE	65	231	2900
2024-WTE-865-OE	13	295	2900
2024-WTE-866-OE	162	294	2900
2024-WTE-867-OE	211	306	3000
2024-WTE-868-OE	223	309	3000
2024-WTE-869-OE	220	303	3100
2024-WTE-870-OE	180	278	3000
2024-WTE-871-OE	150	262	3100
2024-WTE-872-OE	67	226	3100
2024-WTE-878-OE	40	224	3000
2024-WTE-879-OE	64	244	3000
2024-WTE-880-OE	85	264	2900
2024-WTE-881-OE	136	320	2900
2024-WTE-882-OE	234	418	2900
2024-WTE-883-OE	215	377	3000
2024-WTE-884-OE	157	298	3000
2024-WTE-885-OE	20	212	3000
2024-WTE-886-OE	14	208	3000
2024-WTE-887-OE	12	209	3000
2024-WTE-891-OE	24	214	3000
2024-WTE-892-OE	56	237	3000
2024-WTE-893-OE	61	245	2900
2024-WTE-896-OE	31	224	3000

2024-WTE-897-OE	17	211	3000
2024-WTE-912-OE	214	331	2900

The following proposed turbines would increase the Wishek Municipal Airport (6L5) Wishek, ND. minimum altitudes for the RNAV (GPS) RWY 14 (PROPOSED), LNAV MDA from an anticipated 2560 feet AMSL to as much as 2920 feet AMSL and the CAT A/B circling MDA from an anticipated 2560/2600 feet AMSL to as much as 2920 feet AMSL.

2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE

The following proposed turbines would increase the Minimum Vectoring Altitude (MVA) for Bismarck TRACON (BIS) Bismarck, ND., BIS_MVA_FUS3_2023 and BIS_MVA_FUS5_2023, Sector E from 3700 feet AMSL to 3800 feet AMSL.

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

d. Section 77.17(a)(4): A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.

The following proposed turbines would Increase the Minimum Obstruction Clearance Altitude (MOCA) along V15 from BISMARK (BIS) VORTAC, 117 degree radial to ABERDEEN (ABR) VORTAC from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-890-OE
2024-WTE-891-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

3. TITLE 14 CFR PART 77 - EFFECT ON AERONAUTICAL OPERATIONS

a. Section 77.29 (a)(1): impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At a height greater than 499 feet AGL, the proposed wind farm would extend into airspace normally used for VFR en route flight and may be located within 2 statute miles (SM) of potential VFR Routes as defined by FAA Order 7400.2, Section 6-3-8. The turbines within 2 SM of a VFR Route would have an adverse effect upon VFR air navigation. Further study was required to determine whether the proposed structures would have a substantial adverse effect on VFR operations.

4. TITLE 14 CFR PART 77 - FURTHER STUDY AND PUBLIC COMMENTS

In order to facilitate the public comment process, all 103 studies were circularized under ASN 2024-WTE-853-OE on 04/09/2024, to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. There was one comment received as a result of the circularization concluding on 05/16/2024. The comment(s) is summarized as follows:

Comments: We had Badger Wind, LLC remove 5 wind turbines from their plans in 2021 because they would interfere with our plans to add instrument approach to our airport in the future. I would like them to remove this wind turbine T-32 from their plans. It is to close to our airport. They have the whole country side to develop wind turbines, I do not understand why they want to place wind turbines this close to town and this close to an airport. Please do not allow them to place a tower this close to our airport.

FAA Response: The FAA study indicates that this turbine does not impact future airport plans other than the PLAN on FILE: Obstacle penetrates RWY 32 40:1 departure surface by 65 feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES, RWY 32, STD with a minimum climb gradient increase from anticipated 200 to 223 feet per NM to 2900 feet AMSL. The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. Additionally, the total IFR traffic counts for the 6L5 airport for the period of 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity.. Therefore, the proposed wind farm would not have a substantial adverse effect on IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Divion responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is a proposed TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) ruway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt ruway that would be an A(NP) runway, which is a utility ruway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.

5. BASIS FOR DETERMINATION

a. IFR EFFECTS

The aeronautical study identified an IFR effect(s) for 7L2, 6L5, BIS and V15. MSAs are the minimum obstacle clearance altitudes within a specified distance from the navigation facilities upon which procedures are predicated. MSA altitudes are designed for emergency use only and are not routinely used by pilots or by air traffic control. Consequently, MSAs are not circulated for public comment as they are not considered a factor in determining the extent of adverse effect.

MVAs are solely used by ATC, not published for public use and therefore are not circulated for public comment. A review by the controlling facility determined that increasing the altitude in the sector would ensure the required obstacle clearance is maintained and therefore would not have a substantial adverse effect on air traffic operations.

MOCAs assure obstacle clearance over the entire route segment to which they apply and assure navigational signal coverage within 22 NM of the associated VOR navigational facility. For that portion of the route

segment beyond 22 NM from the VOR, where the MOCA is lower than the MEA and there are no plans to lower the MEA to the MOCA, a structure that affects only the MOCA would not be considered to have substantial adverse effect. Other situations require study as ATC may assign altitudes down to the MOCA under certain conditions. Further study revealed that only the MOCA is effected in this area and that the MOCA is not routinely assigned by ATC.

The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. The total IFR traffic counts for 6L5 f from 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity. Therefore, the proposed wind farm would not have a substantial adverse effect on any IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Division responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is proposed as a TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) runway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt runway that would be an A(NP) runway, which is a utility runway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.
The proposed structures would have no effect on any other existing or proposed arrival, departure, or en route IFR operations or procedures.

b. VFR EFFECTS
The aeronautical study identified no effect on any existing or proposed VFR arrival or departure operations. The proposals would be located beyond the normal traffic pattern airspace for 6L5 and any other public use or military airport. At 599 feet AGL, the structures would be located within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm.

In accordance with FAA Order 7400.2, the proposed wind farm would not affect a significant volume of aircraft and therefore, it is determined they will not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

c. RADAR EFFECTS
The aeronautical study identified no effect on ATC radar, direction finders, ATC tower line-of-sight visibility, air navigation, communication facilities, and other surveillance systems for any known public-use or military airports.

d. CUMULATIVE EFFECT
The cumulative impact of the proposed structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any substantial adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposals affect the capacity of any known existing or planned public-use or military airport.

6. DETERMINATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation providing the conditions set forth in this determination are met.

7. CONDITIONS

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, sixty (60) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, ten (10) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE

2024-WTE-837-OE
2024-WTE-838-OE
2024-WTE-839-OE
2024-WTE-840-OE
2024-WTE-847-OE
2024-WTE-849-OE
2024-WTE-850-OE
2024-WTE-851-OE
2024-WTE-852-OE
2024-WTE-853-OE
2024-WTE-854-OE
2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-863-OE
2024-WTE-864-OE
2024-WTE-865-OE
2024-WTE-866-OE
2024-WTE-867-OE
2024-WTE-868-OE
2024-WTE-878-OE
2024-WTE-879-OE
2024-WTE-880-OE
2024-WTE-881-OE
2024-WTE-882-OE
2024-WTE-883-OE
2024-WTE-884-OE
2024-WTE-885-OE
2024-WTE-886-OE
2024-WTE-887-OE
2024-WTE-892-OE
2024-WTE-893-OE
2024-WTE-896-OE
2024-WTE-897-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-919-OE
2024-WTE-920-OE

Additionally, within five days after each project structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (https://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

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ACRONYMS & ABBREVIATIONS
AGL, Above Ground Level
AMSL, Above Mean Sea Level
ARP, Airport Reference Point
ARSR, Air Route Surveillance Radar
ARTCC, Air Route Traffic Control Center
ASN, Aeronautical Study Number
ASR, Airport Surveillance Radar
ATC, Air Traffic Control
ATCT, Air Traffic Control Tower
CARSR, Common Air Route Surveillance Radar
CAT, Category
CFR, Code of Federal Regulations
CG, Climb Gradient
DA, Decision Altitude
DME, Distance Measuring Equipment
FAA, Federal Aviation Administration
FUS, Fusion
GPS, Global Positioning System
IAF, Initial Approach Fix
IAP, Instrument Approach Procedure
ICA, Initial Climb Area
IFR, Instrument Flight Rules
INT, Intersection
LAT, Latitude
LNAV, Lateral Navigation
LOC, Localizer
LONG, Longitude
LP, Localizer Performance
LPV, Localizer Performance with Vertical Guidance
MDA, Minimum Descent Altitude
MEA, Minimum En route Altitude
MET, Meteorological Evaluation Tower
MIA, Minimum IFR Altitude
Min, Minimum
MOCA, Minimum Obstruction Clearance Altitude
MSA, Minimum Safe Altitude
MSL, Mean Sea Level
MVA, Minimum Vectoring Altitude
NA, Not Authorized
NAS, National Airspace System

NAVAID, Navigational Aid
NDB, Non-Directional Radio Beacon
NEH, No Effect Height
NM, Nautical Mile
NOTAM, Notice to Airmen
NPF, Notice of Preliminary Findings
OCS, Obstacle Clearance Surface
OE, Obstruction Evaluation
OEG, Obstruction Evaluation Group
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace.
P-NOTAM, Permanent Notice to Airmen
RLOS, Radar Line of Sight
RNAV, Area Navigation
RNP, Required Navigation Performance
RWY, Runway
S-, Straight-in
SE, Site Elevation
S-LOC, Straight-in Localizer
SM, Statute Miles
Std., Standard
TAA, Terminal Arrival Area
TACAN, Tactical Air Navigation System
TERPS, Terminal Instrument Procedures
TPA, Traffic Pattern Airspace
TRACON, Terminal Radar Approach Control
V, Victor Airway
VFR, Visual Flight Rules
VHF, Very High Frequency
VOR, VHF Omnidirectional Radio Range System
VORTAC, VOR/TACAN System
WTE, Wind Turbine East
WTW, Wind Turbine West


2392
(270)
2293
(254)
Lehr
Wishek
junkyard
2283
(256)
WISHEK MUNI (6L5)
2043 *L-34
122.9

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-897-OE
Prior Study No.
2021-WTE-4933-OE

Issued Date: 02/12/2025

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** MARKING & LIGHTING RECOMMENDATION ****

The Federal Aviation Administration has completed an evaluation of your request concerning:

Structure:	Wind Turbine T-85
Location:	Wishek, ND
Latitude:	46-17-06.97N NAD 83
Longitude:	99-29-29.96W
Heights:	2151 feet site elevation (SE)
	599 feet above ground level (AGL)
	2750 feet above mean sea level (AMSL)

Based on this evaluation, we are unable to accommodate your request.

The structure should continue to be marked/lighted utilizing White Paint/Synchronized Red Lights.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

Your request for consideration to utilize an Aircraft Detection Lighting System to operate the recommended lighting is not approved. See attached for additional condition(s) or information.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed

and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This evaluation concerns the effect of the marking/lighting changes on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6051, or Christopher.evans@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-897-OE.

Signature Control No: 611179960-647316374 (MAL -WT)
Christopher Evans
Specialist

Attachment(s)
Additional Information
Map(s)

Due to the proximity of the structure to the Wishek Municipal Airport (6L5), the lights for this turbine must not be controlled by the ADLS system. To ensure the safety of aircraft engaged in low-level, agricultural and/or helicopter operations, the structure must remain marked and lighted in accordance with the original determination for this structure.


2392
(270)
2293
(254)
Lehr
Wishek
junkyard
2283
(256)
WISHEK MUNI (6L5)
2043 *L-34
122.9

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-897-OE
Prior Study No.
2021-WTE-4933-OE

Issued Date: 06/27/2024

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine T-85
Location:	Wishek, ND
Latitude:	46-17-06.97N NAD 83
Longitude:	99-29-29.96W
Heights:	2151 feet site elevation (SE)
	599 feet above ground level (AGL)
	2750 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 12/27/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before July 27, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on August 06, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should

be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Buck Reynolds, at (847) 294-7576, or Wayne.Reynolds@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-897-OE.

Signature Control No: 611179960-625761230 (DNH -WT)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Map(s)

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

A list of commonly used acronyms and abbreviations is available at the end of this document. A full list is available at the FAA's public website at https://oeaaa.faa.gov/oeaaa/downloads/external/content/FAA_Acronyms.pdf .

1. PROPOSAL DESCRIPTION

Proposed are 103 wind turbines for a project that lies approximately 1.97 NM to 3.95 NM west southwest of the airport reference point (ARP) of the Wishek Municipal Airport (6L5), Wishek, ND., extending clockwise to 2.64 NM to 7.13NM west of the 65L ARP, extending further clockwise to 3.06 NM to 3.88 NM north northeast of the 6L5 ARP.

For the sake of efficiency, all of the wind turbines in this project that have similar impacts are included in this narrative. All 103 wind turbines have been identified as having aeronautical effects which are outlined in the summary below.

The proposed wind turbines' described heights and locations are expressed in Above Ground Level (AGL) height, Above Mean Sea Level (AMSL) height and latitude (LAT)/longitude (LONG).

ASN	AGL	AMSL	LAT	LONG
2024-WTE-822-OE	599	2646	46-22-20.66N	99-39-36.26W
2024-WTE-823-OE	599	2640	46-22-26.42N	99-39-13.76W
2024-WTE-824-OE	599	2632	46-22-36.21N	99-38-57.17W
2024-WTE-825-OE	599	2740	46-19-21.83N	99-39-32.80W
2024-WTE-826-OE	599	2747	46-19-23.07N	99-39-09.52W
2024-WTE-827-OE	599	2706	46-17-10.19N	99-40-51.13W
2024-WTE-828-OE	599	2697	46-17-10.68N	99-40-28.47W
2024-WTE-829-OE	599	2685	46-17-11.39N	99-40-06.89W
2024-WTE-830-OE	599	2678	46-17-11.11N	99-39-36.18W
2024-WTE-831-OE	599	2693	46-17-22.64N	99-39-25.48W
2024-WTE-832-OE	599	2690	46-17-29.68N	99-39-07.10W
2024-WTE-833-OE	599	2700	46-17-58.60N	99-38-23.17W
2024-WTE-834-OE	599	2686	46-18-08.88N	99-38-17.12W
2024-WTE-835-OE	599	2686	46-18-24.47N	99-38-08.84W
2024-WTE-836-OE	599	2723	46-18-33.83N	99-37-58.90W
2024-WTE-837-OE	599	2711	46-18-51.34N	99-37-56.34W
2024-WTE-838-OE	599	2680	46-19-03.07N	99-37-49.70W
2024-WTE-839-OE	599	2646	46-18-55.13N	99-37-14.54W

2024-WTE-840-OE / 599 / 2670 / 46-19-21.11N / 99-36-33.26W
2024-WTE-841-OE / 599 / 2683 / 46-16-41.24N / 99-39-25.45W

2024-WTE-842-OE / 599 / 2681 / 46-16-47.67N / 99-39-10.43W
2024-WTE-843-OE / 599 / 2660 / 46-16-42.79N / 99-38-39.53W
2024-WTE-844-OE / 599 / 2651 / 46-16-51.88N / 99-38-26.23W
2024-WTE-845-OE / 599 / 2651 / 46-17-04.98N / 99-38-05.59W
2024-WTE-846-OE / 599 / 2674 / 46-17-20.72N / 99-37-56.23W
2024-WTE-847-OE / 599 / 2680 / 46-17-30.61N / 99-37-43.17W
2024-WTE-848-OE / 599 / 2668 / 46-17-59.09N / 99-37-19.19W
2024-WTE-849-OE / 599 / 2640 / 46-18-26.22N / 99-37-04.35W
2024-WTE-850-OE / 599 / 2633 / 46-16-52.86N / 99-37-07.88W
2024-WTE-851-OE / 599 / 2657 / 46-17-09.39N / 99-37-00.77W

2024-WTE-852-OE / 599 / 2670 / 46-17-21.00N / 99-36-52.26W
2024-WTE-853-OE / 599 / 2646 / 46-17-31.39N / 99-36-41.62W
2024-WTE-854-OE / 599 / 2633 / 46-17-41.37N / 99-36-36.64W
2024-WTE-855-OE / 599 / 2628 / 46-17-58.38N / 99-36-24.07W
2024-WTE-856-OE / 599 / 2594 / 46-18-36.13N / 99-35-14.91W
2024-WTE-857-OE / 599 / 2604 / 46-18-50.64N / 99-35-16.10W
2024-WTE-858-OE / 599 / 2600 / 46-19-05.37N / 99-35-11.90W
2024-WTE-859-OE / 599 / 2763 / 46-14-48.82N / 99-38-37.69W
2024-WTE-860-OE / 599 / 2729 / 46-14-53.46N / 99-38-19.53W
2024-WTE-861-OE / 599 / 2714 / 46-15-13.35N / 99-38-09.39W

2024-WTE-862-OE / 599 / 2714 / 46-15-21.25N / 99-37-57.66W
2024-WTE-863-OE / 599 / 2668 / 46-16-05.27N / 99-37-12.34W
2024-WTE-864-OE / 599 / 2631 / 46-16-14.38N / 99-37-00.06W
2024-WTE-865-OE / 599 / 2665 / 46-16-06.44N / 99-36-17.92W
2024-WTE-866-OE / 599 / 2623 / 46-16-17.58N / 99-35-59.50W
2024-WTE-867-OE / 599 / 2697 / 46-18-03.60N / 99-32-51.05W
2024-WTE-868-OE / 599 / 2743 / 46-18-10.09N / 99-32-28.16W
2024-WTE-869-OE / 599 / 2776 / 46-18-21.17N / 99-32-15.37W
2024-WTE-870-OE / 599 / 2767 / 46-18-32.54N / 99-32-07.81W
2024-WTE-871-OE / 599 / 2768 / 46-18-40.20N / 99-31-52.51W

2024-WTE-872-OE / 599 / 2797 / 46-19-21.37N / 99-31-26.62W
2024-WTE-873-OE / 599 / 2737 / 46-19-43.23N / 99-30-46.28W
2024-WTE-874-OE / 599 / 2695 / 46-19-52.97N / 99-30-33.28W
2024-WTE-875-OE / 599 / 2707 / 46-20-07.36N / 99-30-54.18W
2024-WTE-876-OE / 599 / 2719 / 46-20-15.34N / 99-31-35.65W
2024-WTE-877-OE / 599 / 2667 / 46-20-40.93N / 99-30-23.57W
2024-WTE-878-OE / 599 / 2716 / 46-14-48.22N / 99-36-54.75W
2024-WTE-879-OE / 599 / 2710 / 46-14-54.01N / 99-36-38.28W
2024-WTE-880-OE / 599 / 2692 / 46-14-56.63N / 99-36-14.82W
2024-WTE-881-OE / 599 / 2707 / 46-15-03.68N / 99-36-00.33W

2024-WTE-882-OE / 599 / 2722 / 46-17-13.91N / 99-32-13.87W
2024-WTE-883-OE / 599 / 2702 / 46-17-22.64N / 99-32-04.75W

2024-WTE-884-OE / 599 / 2758 / 46-18-11.56N / 99-31-24.04W
2024-WTE-885-OE / 599 / 2700 / 46-17-57.69N / 99-30-26.08W
2024-WTE-886-OE / 599 / 2705 / 46-17-49.06N / 99-30-15.49W
2024-WTE-887-OE / 599 / 2730 / 46-18-34.37N / 99-30-18.50W
2024-WTE-888-OE / 599 / 2727 / 46-18-05.96N / 99-29-03.65W
2024-WTE-889-OE / 599 / 2813 / 46-13-27.26N / 99-36-54.27W
2024-WTE-890-OE / 599 / 2762 / 46-14-00.18N / 99-36-53.19W
2024-WTE-891-OE / 599 / 2755 / 46-14-12.01N / 99-36-39.97W

2024-WTE-892-OE / 599 / 2707 / 46-14-08.35N / 99-35-19.52W
2024-WTE-893-OE / 599 / 2679 / 46-14-08.50N / 99-34-57.21W
2024-WTE-894-OE / 599 / 2665 / 46-13-30.79N / 99-34-24.50W
2024-WTE-895-OE / 599 / 2718 / 46-16-17.48N / 99-29-27.65W
2024-WTE-896-OE / 599 / 2757 / 46-16-43.28N / 99-29-31.15W
2024-WTE-897-OE / 599 / 2750 / 46-17-06.97N / 99-29-29.96W
2024-WTE-898-OE / 599 / 2765 / 46-19-24.06N / 99-40-23.61W
2024-WTE-899-OE / 599 / 2773 / 46-19-27.25N / 99-40-05.97W
2024-WTE-900-OE / 599 / 2763 / 46-19-42.87N / 99-39-03.07W
2024-WTE-901-OE / 599 / 2715 / 46-17-33.19N / 99-40-19.03W

2024-WTE-902-OE / 599 / 2725 / 46-17-43.65N / 99-40-08.96W
2024-WTE-903-OE / 599 / 2715 / 46-18-00.37N / 99-40-08.19W
2024-WTE-904-OE / 599 / 2787 / 46-15-46.97N / 99-42-35.58W
2024-WTE-905-OE / 599 / 2790 / 46-15-49.35N / 99-42-16.32W
2024-WTE-906-OE / 599 / 2785 / 46-15-52.71N / 99-41-56.74W
2024-WTE-907-OE / 599 / 2781 / 46-15-48.50N / 99-40-57.22W
2024-WTE-908-OE / 599 / 2784 / 46-15-58.17N / 99-40-43.79W
2024-WTE-909-OE / 599 / 2784 / 46-16-03.44N / 99-40-24.98W
2024-WTE-910-OE / 599 / 2723 / 46-16-14.21N / 99-40-05.49W
2024-WTE-911-OE / 599 / 2712 / 46-16-14.70N / 99-39-43.12W

2024-WTE-912-OE / 599 / 2629 / 46-16-20.97N / 99-35-37.39W
2024-WTE-913-OE / 599 / 2827 / 46-13-09.40N / 99-37-26.04W
2024-WTE-914-OE / 599 / 2804 / 46-12-39.11N / 99-36-54.20W
2024-WTE-915-OE / 599 / 2809 / 46-12-50.95N / 99-36-45.69W
2024-WTE-916-OE / 599 / 2864 / 46-12-50.65N / 99-35-57.99W
2024-WTE-917-OE / 599 / 2823 / 46-12-11.58N / 99-35-33.44W
2024-WTE-918-OE / 599 / 2791 / 46-12-19.36N / 99-35-20.55W
2024-WTE-919-OE / 599 / 2749 / 46-12-20.98N / 99-35-00.78W
2024-WTE-920-OE / 599 / 2749 / 46-12-24.53N / 99-34-38.61W
2024-WTE-921-OE / 599 / 2751 / 46-12-48.50N / 99-34-25.28W

2024-WTE-922-OE / 599 / 2680 / 46-16-16.57N / 99-39-22.49W
2024-WTE-923-OE / 599 / 2827 / 46-13-15.45N / 99-37-02.58W
2024-WTE-924-OE / 599 / 2821 / 46-12-43.36N / 99-36-16.39W

2. TITLE 14 CFR PART 77 - OBSTRUCTION STANDARDS EXCEEDED

a. Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. The proposals would all exceed this standard by 100 feet.

b. Section 77.17(a)(2): A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 NM miles of the established reference point of 6L5, and that height increases in the proportion of 100 feet for each additional NM from the airport up to a maximum of 499 feet. The following would exceed by:

2024-WTE-829-OE	119 feet
2024-WTE-830-OE	152 feet
2024-WTE-831-OE	155 feet
2024-WTE-832-OE	169 feet
2024-WTE-833-OE	186 feet
2024-WTE-834-OE	181 feet
2024-WTE-835-OE	172 feet
2024-WTE-836-OE	171 feet
2024-WTE-837-OE	153 feet
2024-WTE-838-OE	144 feet
2024-WTE-839-OE	181 feet
2024-WTE-840-OE	175 feet
2024-WTE-841-OE	182 feet
2024-WTE-842-OE	194 feet
2024-WTE-843-OE	231 feet
2024-WTE-844-OE	239 feet
2024-WTE-845-OE	251 feet
2024-WTE-846-OE	247 feet
2024-WTE-847-OE	251 feet
2024-WTE-848-OE	244 feet
2024-WTE-849-OE	223 feet
2024-WTE-850-OE	310 feet
2024-WTE-851-OE	311 feet
2024-WTE-852-OE	308 feet
2024-WTE-853-OE	307 feet
2024-WTE-854-OE	291 feet
2024-WTE-855-OE	276 feet
2024-WTE-856-OE	238 feet
2024-WTE-857-OE	226 feet
2024-WTE-858-OE	202 feet
2024-WTE-859-OE	266 feet
2024-WTE-860-OE	287 feet
2024-WTE-861-OE	298 feet
2024-WTE-862-OE	310 feet
2024-WTE-863-OE	347 feet
2024-WTE-864-OE	344 feet
2024-WTE-865-OE	399 feet
2024-WTE-866-OE	380 feet

2024-WTE-867-OE	392 feet
2024-WTE-868-OE	383 feet
2024-WTE-869-OE	365 feet
2024-WTE-870-OE	346 feet
2024-WTE-871-OE	333 feet
2024-WTE-872-OE	261 feet
2024-WTE-873-OE	217 feet
2024-WTE-874-OE	198 feet
2024-WTE-875-OE	180 feet
2024-WTE-876-OE	173 feet
2024-WTE-877-OE	118 feet
2024-WTE-878-OE	384 feet
2024-WTE-879-OE	399 feet
2024-WTE-880-OE	399 feet
2024-WTE-881-OE	399 feet
2024-WTE-882-OE	399 feet
2024-WTE-883-OE	399 feet
2024-WTE-884-OE	376 feet
2024-WTE-885-OE	378 feet
2024-WTE-886-OE	386 feet
2024-WTE-887-OE	318 feet
2024-WTE-888-OE	319 feet
2024-WTE-889-OE	350 feet
2024-WTE-890-OE	372 feet
2024-WTE-891-OE	392 feet
2024-WTE-892-OE	399 feet
2024-WTE-893-OE	399 feet
2024-WTE-894-OE	399 feet
2024-WTE-895-OE	399 feet
2024-WTE-896-OE	399 feet
2024-WTE-897-OE	399 feet
2024-WTE-908-OE	112 feet
2024-WTE-909-OE	131 feet
2024-WTE-910-OE	150 feet
2024-WTE-911-OE	175 feet
2024-WTE-912-OE	387 feet
2024-WTE-913-OE	304 feet
2024-WTE-914-OE	309 feet
2024-WTE-915-OE	328 feet
2024-WTE-916-OE	372 feet
2024-WTE-917-OE	344 feet
2024-WTE-918-OE	364 feet
2024-WTE-919-OE	379 feet
2024-WTE-920-OE	398 feet

2024-WTE-921-OE 399 feet
2024-WTE-922-OE 197 feet
2024-WTE-923-OE 333 feet
2024-WTE-924-OE 347 feet
2024-WTE-926-OE 134 feet
2024-WTE-927-OE 144 feet
2024-WTE-928-OE 150 feet
2024-WTE-929-OE 150 feet

c. Section 77.17 (a)(3): A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

The following proposed turbines increase the Linton Municipal (7L2) Linton, ND. RNAV (GPS) RWY 27 ORIG-C, Minimum Safe Altitude (MSA) from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-898-OE
2024-WTE-899-OE
2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE

2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE

2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines increase the Linton Municipal (7L2) Linton ND. RNAV (GPS) RWY 9 ORIG-C, MSA from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE

2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines penetrate the Wishek Municipal (6L5) Wishek, ND., RWY 32 (PLAN on FILE) 40:1 departure surface by _____ feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES RWY 32, STD with a minimum climb gradient increase from an anticipated 200 to _____ feet per NM to _____ feet AMSL.

ASN	penetration in feet	feet per/NM	to feet AMSL
2024-WTE-847-OE	7	204	2900
2024-WTE-850-OE	56	222	2900
2024-WTE-851-OE	58	233	2900
2024-WTE-852-OE	89	232	2900
2024-WTE-853-OE	65	223	2900
2024-WTE-854-OE	31	222	2900
2024-WTE-862-OE	4	201	3000
2024-WTE-863-OE	76	234	2900
2024-WTE-864-OE	65	231	2900
2024-WTE-865-OE	13	295	2900
2024-WTE-866-OE	162	294	2900
2024-WTE-867-OE	211	306	3000
2024-WTE-868-OE	223	309	3000
2024-WTE-869-OE	220	303	3100
2024-WTE-870-OE	180	278	3000
2024-WTE-871-OE	150	262	3100
2024-WTE-872-OE	67	226	3100
2024-WTE-878-OE	40	224	3000
2024-WTE-879-OE	64	244	3000
2024-WTE-880-OE	85	264	2900
2024-WTE-881-OE	136	320	2900
2024-WTE-882-OE	234	418	2900
2024-WTE-883-OE	215	377	3000
2024-WTE-884-OE	157	298	3000
2024-WTE-885-OE	20	212	3000
2024-WTE-886-OE	14	208	3000
2024-WTE-887-OE	12	209	3000
2024-WTE-891-OE	24	214	3000
2024-WTE-892-OE	56	237	3000
2024-WTE-893-OE	61	245	2900
2024-WTE-896-OE	31	224	3000

2024-WTE-897-OE	17	211	3000
2024-WTE-912-OE	214	331	2900

The following proposed turbines would increase the Wishek Municipal Airport (6L5) Wishek, ND. minimum altitudes for the RNAV (GPS) RWY 14 (PROPOSED), LNAV MDA from an anticipated 2560 feet AMSL to as much as 2920 feet AMSL and the CAT A/B circling MDA from an anticipated 2560/2600 feet AMSL to as much as 2920 feet AMSL.

2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE

The following proposed turbines would increase the Minimum Vectoring Altitude (MVA) for Bismarck TRACON (BIS) Bismarck, ND., BIS_MVA_FUS3_2023 and BIS_MVA_FUS5_2023, Sector E from 3700 feet AMSL to 3800 feet AMSL.

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

d. Section 77.17(a)(4): A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.

The following proposed turbines would Increase the Minimum Obstruction Clearance Altitude (MOCA) along V15 from BISMARK (BIS) VORTAC, 117 degree radial to ABERDEEN (ABR) VORTAC from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-890-OE
2024-WTE-891-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

3. TITLE 14 CFR PART 77 - EFFECT ON AERONAUTICAL OPERATIONS

a. Section 77.29 (a)(1): impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At a height greater than 499 feet AGL, the proposed wind farm would extend into airspace normally used for VFR en route flight and may be located within 2 statute miles (SM) of potential VFR Routes as defined by FAA Order 7400.2, Section 6-3-8. The turbines within 2 SM of a VFR Route would have an adverse effect upon VFR air navigation. Further study was required to determine whether the proposed structures would have a substantial adverse effect on VFR operations.

4. TITLE 14 CFR PART 77 - FURTHER STUDY AND PUBLIC COMMENTS

In order to facilitate the public comment process, all 103 studies were circularized under ASN 2024-WTE-853-OE on 04/09/2024, to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. There was one comment received as a result of the circularization concluding on 05/16/2024. The comment(s) is summarized as follows:

Comments: We had Badger Wind, LLC remove 5 wind turbines from their plans in 2021 because they would interfere with our plans to add instrument approach to our airport in the future. I would like them to remove this wind turbine T-32 from their plans. It is to close to our airport. They have the whole country side to develop wind turbines, I do not understand why they want to place wind turbines this close to town and this close to an airport. Please do not allow them to place a tower this close to our airport.

FAA Response: The FAA study indicates that this turbine does not impact future airport plans other than the PLAN on FILE: Obstacle penetrates RWY 32 40:1 departure surface by 65 feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES, RWY 32, STD with a minimum climb gradient increase from anticipated 200 to 223 feet per NM to 2900 feet AMSL. The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. Additionally, the total IFR traffic counts for the 6L5 airport for the period of 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity.. Therefore, the proposed wind farm would not have a substantial adverse effect on IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Divion responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is a proposed TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) ruway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt ruway that would be an A(NP) runway, which is a utility ruway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.

5. BASIS FOR DETERMINATION

a. IFR EFFECTS

The aeronautical study identified an IFR effect(s) for 7L2, 6L5, BIS and V15. MSAs are the minimum obstacle clearance altitudes within a specified distance from the navigation facilities upon which procedures are predicated. MSA altitudes are designed for emergency use only and are not routinely used by pilots or by air traffic control. Consequently, MSAs are not circulated for public comment as they are not considered a factor in determining the extent of adverse effect.

MVAs are solely used by ATC, not published for public use and therefore are not circulated for public comment. A review by the controlling facility determined that increasing the altitude in the sector would ensure the required obstacle clearance is maintained and therefore would not have a substantial adverse effect on air traffic operations.

MOCAs assure obstacle clearance over the entire route segment to which they apply and assure navigational signal coverage within 22 NM of the associated VOR navigational facility. For that portion of the route

segment beyond 22 NM from the VOR, where the MOCA is lower than the MEA and there are no plans to lower the MEA to the MOCA, a structure that affects only the MOCA would not be considered to have substantial adverse effect. Other situations require study as ATC may assign altitudes down to the MOCA under certain conditions. Further study revealed that only the MOCA is effected in this area and that the MOCA is not routinely assigned by ATC.

The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. The total IFR traffic counts for 6L5 f from 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity. Therefore, the proposed wind farm would not have a substantial adverse effect on any IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Division responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is proposed as a TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) runway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt runway that would be an A(NP) runway, which is a utility runway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.
The proposed structures would have no effect on any other existing or proposed arrival, departure, or en route IFR operations or procedures.

b. VFR EFFECTS
The aeronautical study identified no effect on any existing or proposed VFR arrival or departure operations. The proposals would be located beyond the normal traffic pattern airspace for 6L5 and any other public use or military airport. At 599 feet AGL, the structures would be located within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm.

In accordance with FAA Order 7400.2, the proposed wind farm would not affect a significant volume of aircraft and therefore, it is determined they will not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

c. RADAR EFFECTS
The aeronautical study identified no effect on ATC radar, direction finders, ATC tower line-of-sight visibility, air navigation, communication facilities, and other surveillance systems for any known public-use or military airports.

d. CUMULATIVE EFFECT
The cumulative impact of the proposed structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any substantial adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposals affect the capacity of any known existing or planned public-use or military airport.

6. DETERMINATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation providing the conditions set forth in this determination are met.

7. CONDITIONS

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, sixty (60) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, ten (10) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE

2024-WTE-837-OE
2024-WTE-838-OE
2024-WTE-839-OE
2024-WTE-840-OE
2024-WTE-847-OE
2024-WTE-849-OE
2024-WTE-850-OE
2024-WTE-851-OE
2024-WTE-852-OE
2024-WTE-853-OE
2024-WTE-854-OE
2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-863-OE
2024-WTE-864-OE
2024-WTE-865-OE
2024-WTE-866-OE
2024-WTE-867-OE
2024-WTE-868-OE
2024-WTE-878-OE
2024-WTE-879-OE
2024-WTE-880-OE
2024-WTE-881-OE
2024-WTE-882-OE
2024-WTE-883-OE
2024-WTE-884-OE
2024-WTE-885-OE
2024-WTE-886-OE
2024-WTE-887-OE
2024-WTE-892-OE
2024-WTE-893-OE
2024-WTE-896-OE
2024-WTE-897-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-919-OE
2024-WTE-920-OE

Additionally, within five days after each project structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (https://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

****

ACRONYMS & ABBREVIATIONS
AGL, Above Ground Level
AMSL, Above Mean Sea Level
ARP, Airport Reference Point
ARSR, Air Route Surveillance Radar
ARTCC, Air Route Traffic Control Center
ASN, Aeronautical Study Number
ASR, Airport Surveillance Radar
ATC, Air Traffic Control
ATCT, Air Traffic Control Tower
CARSR, Common Air Route Surveillance Radar
CAT, Category
CFR, Code of Federal Regulations
CG, Climb Gradient
DA, Decision Altitude
DME, Distance Measuring Equipment
FAA, Federal Aviation Administration
FUS, Fusion
GPS, Global Positioning System
IAF, Initial Approach Fix
IAP, Instrument Approach Procedure
ICA, Initial Climb Area
IFR, Instrument Flight Rules
INT, Intersection
LAT, Latitude
LNAV, Lateral Navigation
LOC, Localizer
LONG, Longitude
LP, Localizer Performance
LPV, Localizer Performance with Vertical Guidance
MDA, Minimum Descent Altitude
MEA, Minimum En route Altitude
MET, Meteorological Evaluation Tower
MIA, Minimum IFR Altitude
Min, Minimum
MOCA, Minimum Obstruction Clearance Altitude
MSA, Minimum Safe Altitude
MSL, Mean Sea Level
MVA, Minimum Vectoring Altitude
NA, Not Authorized
NAS, National Airspace System

NAVAID, Navigational Aid
NDB, Non-Directional Radio Beacon
NEH, No Effect Height
NM, Nautical Mile
NOTAM, Notice to Airmen
NPF, Notice of Preliminary Findings
OCS, Obstacle Clearance Surface
OE, Obstruction Evaluation
OEG, Obstruction Evaluation Group
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace.
P-NOTAM, Permanent Notice to Airmen
RLOS, Radar Line of Sight
RNAV, Area Navigation
RNP, Required Navigation Performance
RWY, Runway
S-, Straight-in
SE, Site Elevation
S-LOC, Straight-in Localizer
SM, Statute Miles
Std., Standard
TAA, Terminal Arrival Area
TACAN, Tactical Air Navigation System
TERPS, Terminal Instrument Procedures
TPA, Traffic Pattern Airspace
TRACON, Terminal Radar Approach Control
V, Victor Airway
VFR, Visual Flight Rules
VHF, Very High Frequency
VOR, VHF Omnidirectional Radio Range System
VORTAC, VOR/TACAN System
WTE, Wind Turbine East
WTW, Wind Turbine West


2392
(270)
2293
(254)
Lehr
Wishek
junkyard
2283
(256)
WISHEK MUNI (6L5)
2043 *L-34
122.9

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-912-OE
Prior Study No.
2021-WTE-4952-OE

Issued Date: 02/12/2025

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** MARKING & LIGHTING RECOMMENDATION ****

The Federal Aviation Administration has completed an evaluation of your request concerning:

Structure:	Wind Turbine T-105
Location:	Wishek, ND
Latitude:	46-16-20.97N NAD 83
Longitude:	99-35-37.39W
Heights:	2030 feet site elevation (SE)
	599 feet above ground level (AGL)
	2629 feet above mean sea level (AMSL)

Based on this evaluation, we are unable to accommodate your request.

The structure should continue to be marked/lighted utilizing White Paint/Synchronized Red Lights.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

Your request for consideration to utilize an Aircraft Detection Lighting System to operate the recommended lighting is not approved. See attached for additional condition(s) or information.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed

and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This evaluation concerns the effect of the marking/lighting changes on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6051, or Christopher.evans@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-912-OE.

Signature Control No: 611179983-647316381 (MAL -WT)
Christopher Evans
Specialist

Attachment(s)
Additional Information
Map(s)

Due to the proximity of the structure to the Wishek Municipal Airport (6L5), the lights for this turbine must not be controlled by the ADLS system. To ensure the safety of aircraft engaged in low-level, agricultural and/or helicopter operations, the structure must remain marked and lighted in accordance with the original determination for this structure.


(422)
2392
(270)
433
300)
2265
Wishek
junkyard
28
2283
(256)
WISHEK MUNI (6L5)
2043 *L-34
122.9

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-912-OE
Prior Study No.
2021-WTE-4952-OE

Issued Date: 06/27/2024

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine T-105
Location:	Wishek, ND
Latitude:	46-16-20.97N NAD 83
Longitude:	99-35-37.39W
Heights:	2030 feet site elevation (SE)
	599 feet above ground level (AGL)
	2629 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 12/27/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before July 27, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on August 06, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should

be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Buck Reynolds, at (847) 294-7576, or Wayne.Reynolds@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-912-OE.

Signature Control No: 611179983-625757766 (DNH -WT)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Map(s)

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

A list of commonly used acronyms and abbreviations is available at the end of this document. A full list is available at the FAA's public website at https://oeaaa.faa.gov/oeaaa/downloads/external/content/FAA_Acronyms.pdf .

1. PROPOSAL DESCRIPTION

Proposed are 103 wind turbines for a project that lies approximately 1.97 NM to 3.95 NM west southwest of the airport reference point (ARP) of the Wishek Municipal Airport (6L5), Wishek, ND., extending clockwise to 2.64 NM to 7.13NM west of the 65L ARP, extending further clockwise to 3.06 NM to 3.88 NM north northeast of the 6L5 ARP.

For the sake of efficiency, all of the wind turbines in this project that have similar impacts are included in this narrative. All 103 wind turbines have been identified as having aeronautical effects which are outlined in the summary below.

The proposed wind turbines' described heights and locations are expressed in Above Ground Level (AGL) height, Above Mean Sea Level (AMSL) height and latitude (LAT)/longitude (LONG).

ASN	AGL	AMSL	LAT	LONG
2024-WTE-822-OE	599	2646	46-22-20.66N	99-39-36.26W
2024-WTE-823-OE	599	2640	46-22-26.42N	99-39-13.76W
2024-WTE-824-OE	599	2632	46-22-36.21N	99-38-57.17W
2024-WTE-825-OE	599	2740	46-19-21.83N	99-39-32.80W
2024-WTE-826-OE	599	2747	46-19-23.07N	99-39-09.52W
2024-WTE-827-OE	599	2706	46-17-10.19N	99-40-51.13W
2024-WTE-828-OE	599	2697	46-17-10.68N	99-40-28.47W
2024-WTE-829-OE	599	2685	46-17-11.39N	99-40-06.89W
2024-WTE-830-OE	599	2678	46-17-11.11N	99-39-36.18W
2024-WTE-831-OE	599	2693	46-17-22.64N	99-39-25.48W
2024-WTE-832-OE	599	2690	46-17-29.68N	99-39-07.10W
2024-WTE-833-OE	599	2700	46-17-58.60N	99-38-23.17W
2024-WTE-834-OE	599	2686	46-18-08.88N	99-38-17.12W
2024-WTE-835-OE	599	2686	46-18-24.47N	99-38-08.84W
2024-WTE-836-OE	599	2723	46-18-33.83N	99-37-58.90W
2024-WTE-837-OE	599	2711	46-18-51.34N	99-37-56.34W
2024-WTE-838-OE	599	2680	46-19-03.07N	99-37-49.70W
2024-WTE-839-OE	599	2646	46-18-55.13N	99-37-14.54W

2024-WTE-840-OE / 599 / 2670 / 46-19-21.11N / 99-36-33.26W
2024-WTE-841-OE / 599 / 2683 / 46-16-41.24N / 99-39-25.45W

2024-WTE-842-OE / 599 / 2681 / 46-16-47.67N / 99-39-10.43W
2024-WTE-843-OE / 599 / 2660 / 46-16-42.79N / 99-38-39.53W
2024-WTE-844-OE / 599 / 2651 / 46-16-51.88N / 99-38-26.23W
2024-WTE-845-OE / 599 / 2651 / 46-17-04.98N / 99-38-05.59W
2024-WTE-846-OE / 599 / 2674 / 46-17-20.72N / 99-37-56.23W
2024-WTE-847-OE / 599 / 2680 / 46-17-30.61N / 99-37-43.17W
2024-WTE-848-OE / 599 / 2668 / 46-17-59.09N / 99-37-19.19W
2024-WTE-849-OE / 599 / 2640 / 46-18-26.22N / 99-37-04.35W
2024-WTE-850-OE / 599 / 2633 / 46-16-52.86N / 99-37-07.88W
2024-WTE-851-OE / 599 / 2657 / 46-17-09.39N / 99-37-00.77W

2024-WTE-852-OE / 599 / 2670 / 46-17-21.00N / 99-36-52.26W
2024-WTE-853-OE / 599 / 2646 / 46-17-31.39N / 99-36-41.62W
2024-WTE-854-OE / 599 / 2633 / 46-17-41.37N / 99-36-36.64W
2024-WTE-855-OE / 599 / 2628 / 46-17-58.38N / 99-36-24.07W
2024-WTE-856-OE / 599 / 2594 / 46-18-36.13N / 99-35-14.91W
2024-WTE-857-OE / 599 / 2604 / 46-18-50.64N / 99-35-16.10W
2024-WTE-858-OE / 599 / 2600 / 46-19-05.37N / 99-35-11.90W
2024-WTE-859-OE / 599 / 2763 / 46-14-48.82N / 99-38-37.69W
2024-WTE-860-OE / 599 / 2729 / 46-14-53.46N / 99-38-19.53W
2024-WTE-861-OE / 599 / 2714 / 46-15-13.35N / 99-38-09.39W

2024-WTE-862-OE / 599 / 2714 / 46-15-21.25N / 99-37-57.66W
2024-WTE-863-OE / 599 / 2668 / 46-16-05.27N / 99-37-12.34W
2024-WTE-864-OE / 599 / 2631 / 46-16-14.38N / 99-37-00.06W
2024-WTE-865-OE / 599 / 2665 / 46-16-06.44N / 99-36-17.92W
2024-WTE-866-OE / 599 / 2623 / 46-16-17.58N / 99-35-59.50W
2024-WTE-867-OE / 599 / 2697 / 46-18-03.60N / 99-32-51.05W
2024-WTE-868-OE / 599 / 2743 / 46-18-10.09N / 99-32-28.16W
2024-WTE-869-OE / 599 / 2776 / 46-18-21.17N / 99-32-15.37W
2024-WTE-870-OE / 599 / 2767 / 46-18-32.54N / 99-32-07.81W
2024-WTE-871-OE / 599 / 2768 / 46-18-40.20N / 99-31-52.51W

2024-WTE-872-OE / 599 / 2797 / 46-19-21.37N / 99-31-26.62W
2024-WTE-873-OE / 599 / 2737 / 46-19-43.23N / 99-30-46.28W
2024-WTE-874-OE / 599 / 2695 / 46-19-52.97N / 99-30-33.28W
2024-WTE-875-OE / 599 / 2707 / 46-20-07.36N / 99-30-54.18W
2024-WTE-876-OE / 599 / 2719 / 46-20-15.34N / 99-31-35.65W
2024-WTE-877-OE / 599 / 2667 / 46-20-40.93N / 99-30-23.57W
2024-WTE-878-OE / 599 / 2716 / 46-14-48.22N / 99-36-54.75W
2024-WTE-879-OE / 599 / 2710 / 46-14-54.01N / 99-36-38.28W
2024-WTE-880-OE / 599 / 2692 / 46-14-56.63N / 99-36-14.82W
2024-WTE-881-OE / 599 / 2707 / 46-15-03.68N / 99-36-00.33W

2024-WTE-882-OE / 599 / 2722 / 46-17-13.91N / 99-32-13.87W
2024-WTE-883-OE / 599 / 2702 / 46-17-22.64N / 99-32-04.75W

2024-WTE-884-OE / 599 / 2758 / 46-18-11.56N / 99-31-24.04W
2024-WTE-885-OE / 599 / 2700 / 46-17-57.69N / 99-30-26.08W
2024-WTE-886-OE / 599 / 2705 / 46-17-49.06N / 99-30-15.49W
2024-WTE-887-OE / 599 / 2730 / 46-18-34.37N / 99-30-18.50W
2024-WTE-888-OE / 599 / 2727 / 46-18-05.96N / 99-29-03.65W
2024-WTE-889-OE / 599 / 2813 / 46-13-27.26N / 99-36-54.27W
2024-WTE-890-OE / 599 / 2762 / 46-14-00.18N / 99-36-53.19W
2024-WTE-891-OE / 599 / 2755 / 46-14-12.01N / 99-36-39.97W

2024-WTE-892-OE / 599 / 2707 / 46-14-08.35N / 99-35-19.52W
2024-WTE-893-OE / 599 / 2679 / 46-14-08.50N / 99-34-57.21W
2024-WTE-894-OE / 599 / 2665 / 46-13-30.79N / 99-34-24.50W
2024-WTE-895-OE / 599 / 2718 / 46-16-17.48N / 99-29-27.65W
2024-WTE-896-OE / 599 / 2757 / 46-16-43.28N / 99-29-31.15W
2024-WTE-897-OE / 599 / 2750 / 46-17-06.97N / 99-29-29.96W
2024-WTE-898-OE / 599 / 2765 / 46-19-24.06N / 99-40-23.61W
2024-WTE-899-OE / 599 / 2773 / 46-19-27.25N / 99-40-05.97W
2024-WTE-900-OE / 599 / 2763 / 46-19-42.87N / 99-39-03.07W
2024-WTE-901-OE / 599 / 2715 / 46-17-33.19N / 99-40-19.03W

2024-WTE-902-OE / 599 / 2725 / 46-17-43.65N / 99-40-08.96W
2024-WTE-903-OE / 599 / 2715 / 46-18-00.37N / 99-40-08.19W
2024-WTE-904-OE / 599 / 2787 / 46-15-46.97N / 99-42-35.58W
2024-WTE-905-OE / 599 / 2790 / 46-15-49.35N / 99-42-16.32W
2024-WTE-906-OE / 599 / 2785 / 46-15-52.71N / 99-41-56.74W
2024-WTE-907-OE / 599 / 2781 / 46-15-48.50N / 99-40-57.22W
2024-WTE-908-OE / 599 / 2784 / 46-15-58.17N / 99-40-43.79W
2024-WTE-909-OE / 599 / 2784 / 46-16-03.44N / 99-40-24.98W
2024-WTE-910-OE / 599 / 2723 / 46-16-14.21N / 99-40-05.49W
2024-WTE-911-OE / 599 / 2712 / 46-16-14.70N / 99-39-43.12W

2024-WTE-912-OE / 599 / 2629 / 46-16-20.97N / 99-35-37.39W
2024-WTE-913-OE / 599 / 2827 / 46-13-09.40N / 99-37-26.04W
2024-WTE-914-OE / 599 / 2804 / 46-12-39.11N / 99-36-54.20W
2024-WTE-915-OE / 599 / 2809 / 46-12-50.95N / 99-36-45.69W
2024-WTE-916-OE / 599 / 2864 / 46-12-50.65N / 99-35-57.99W
2024-WTE-917-OE / 599 / 2823 / 46-12-11.58N / 99-35-33.44W
2024-WTE-918-OE / 599 / 2791 / 46-12-19.36N / 99-35-20.55W
2024-WTE-919-OE / 599 / 2749 / 46-12-20.98N / 99-35-00.78W
2024-WTE-920-OE / 599 / 2749 / 46-12-24.53N / 99-34-38.61W
2024-WTE-921-OE / 599 / 2751 / 46-12-48.50N / 99-34-25.28W

2024-WTE-922-OE / 599 / 2680 / 46-16-16.57N / 99-39-22.49W
2024-WTE-923-OE / 599 / 2827 / 46-13-15.45N / 99-37-02.58W
2024-WTE-924-OE / 599 / 2821 / 46-12-43.36N / 99-36-16.39W

2. TITLE 14 CFR PART 77 - OBSTRUCTION STANDARDS EXCEEDED

a. Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. The proposals would all exceed this standard by 100 feet.

b. Section 77.17(a)(2): A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 NM miles of the established reference point of 6L5, and that height increases in the proportion of 100 feet for each additional NM from the airport up to a maximum of 499 feet. The following would exceed by:

2024-WTE-829-OE	119 feet
2024-WTE-830-OE	152 feet
2024-WTE-831-OE	155 feet
2024-WTE-832-OE	169 feet
2024-WTE-833-OE	186 feet
2024-WTE-834-OE	181 feet
2024-WTE-835-OE	172 feet
2024-WTE-836-OE	171 feet
2024-WTE-837-OE	153 feet
2024-WTE-838-OE	144 feet
2024-WTE-839-OE	181 feet
2024-WTE-840-OE	175 feet
2024-WTE-841-OE	182 feet
2024-WTE-842-OE	194 feet
2024-WTE-843-OE	231 feet
2024-WTE-844-OE	239 feet
2024-WTE-845-OE	251 feet
2024-WTE-846-OE	247 feet
2024-WTE-847-OE	251 feet
2024-WTE-848-OE	244 feet
2024-WTE-849-OE	223 feet
2024-WTE-850-OE	310 feet
2024-WTE-851-OE	311 feet
2024-WTE-852-OE	308 feet
2024-WTE-853-OE	307 feet
2024-WTE-854-OE	291 feet
2024-WTE-855-OE	276 feet
2024-WTE-856-OE	238 feet
2024-WTE-857-OE	226 feet
2024-WTE-858-OE	202 feet
2024-WTE-859-OE	266 feet
2024-WTE-860-OE	287 feet
2024-WTE-861-OE	298 feet
2024-WTE-862-OE	310 feet
2024-WTE-863-OE	347 feet
2024-WTE-864-OE	344 feet
2024-WTE-865-OE	399 feet
2024-WTE-866-OE	380 feet

2024-WTE-867-OE	392 feet
2024-WTE-868-OE	383 feet
2024-WTE-869-OE	365 feet
2024-WTE-870-OE	346 feet
2024-WTE-871-OE	333 feet
2024-WTE-872-OE	261 feet
2024-WTE-873-OE	217 feet
2024-WTE-874-OE	198 feet
2024-WTE-875-OE	180 feet
2024-WTE-876-OE	173 feet
2024-WTE-877-OE	118 feet
2024-WTE-878-OE	384 feet
2024-WTE-879-OE	399 feet
2024-WTE-880-OE	399 feet
2024-WTE-881-OE	399 feet
2024-WTE-882-OE	399 feet
2024-WTE-883-OE	399 feet
2024-WTE-884-OE	376 feet
2024-WTE-885-OE	378 feet
2024-WTE-886-OE	386 feet
2024-WTE-887-OE	318 feet
2024-WTE-888-OE	319 feet
2024-WTE-889-OE	350 feet
2024-WTE-890-OE	372 feet
2024-WTE-891-OE	392 feet
2024-WTE-892-OE	399 feet
2024-WTE-893-OE	399 feet
2024-WTE-894-OE	399 feet
2024-WTE-895-OE	399 feet
2024-WTE-896-OE	399 feet
2024-WTE-897-OE	399 feet
2024-WTE-908-OE	112 feet
2024-WTE-909-OE	131 feet
2024-WTE-910-OE	150 feet
2024-WTE-911-OE	175 feet
2024-WTE-912-OE	387 feet
2024-WTE-913-OE	304 feet
2024-WTE-914-OE	309 feet
2024-WTE-915-OE	328 feet
2024-WTE-916-OE	372 feet
2024-WTE-917-OE	344 feet
2024-WTE-918-OE	364 feet
2024-WTE-919-OE	379 feet
2024-WTE-920-OE	398 feet

2024-WTE-921-OE 399 feet
2024-WTE-922-OE 197 feet
2024-WTE-923-OE 333 feet
2024-WTE-924-OE 347 feet
2024-WTE-926-OE 134 feet
2024-WTE-927-OE 144 feet
2024-WTE-928-OE 150 feet
2024-WTE-929-OE 150 feet

c. Section 77.17 (a)(3): A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

The following proposed turbines increase the Linton Municipal (7L2) Linton, ND. RNAV (GPS) RWY 27 ORIG-C, Minimum Safe Altitude (MSA) from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-898-OE
2024-WTE-899-OE
2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE

2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE

2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines increase the Linton Municipal (7L2) Linton ND. RNAV (GPS) RWY 9 ORIG-C, MSA from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE

2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines penetrate the Wishek Municipal (6L5) Wishek, ND., RWY 32 (PLAN on FILE) 40:1 departure surface by _____ feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES RWY 32, STD with a minimum climb gradient increase from an anticipated 200 to _____ feet per NM to _____ feet AMSL.

ASN	penetration in feet	feet per/NM	to feet AMSL
2024-WTE-847-OE	7	204	2900
2024-WTE-850-OE	56	222	2900
2024-WTE-851-OE	58	233	2900
2024-WTE-852-OE	89	232	2900
2024-WTE-853-OE	65	223	2900
2024-WTE-854-OE	31	222	2900
2024-WTE-862-OE	4	201	3000
2024-WTE-863-OE	76	234	2900
2024-WTE-864-OE	65	231	2900
2024-WTE-865-OE	13	295	2900
2024-WTE-866-OE	162	294	2900
2024-WTE-867-OE	211	306	3000
2024-WTE-868-OE	223	309	3000
2024-WTE-869-OE	220	303	3100
2024-WTE-870-OE	180	278	3000
2024-WTE-871-OE	150	262	3100
2024-WTE-872-OE	67	226	3100
2024-WTE-878-OE	40	224	3000
2024-WTE-879-OE	64	244	3000
2024-WTE-880-OE	85	264	2900
2024-WTE-881-OE	136	320	2900
2024-WTE-882-OE	234	418	2900
2024-WTE-883-OE	215	377	3000
2024-WTE-884-OE	157	298	3000
2024-WTE-885-OE	20	212	3000
2024-WTE-886-OE	14	208	3000
2024-WTE-887-OE	12	209	3000
2024-WTE-891-OE	24	214	3000
2024-WTE-892-OE	56	237	3000
2024-WTE-893-OE	61	245	2900
2024-WTE-896-OE	31	224	3000

2024-WTE-897-OE	17	211	3000
2024-WTE-912-OE	214	331	2900

The following proposed turbines would increase the Wishek Municipal Airport (6L5) Wishek, ND. minimum altitudes for the RNAV (GPS) RWY 14 (PROPOSED), LNAV MDA from an anticipated 2560 feet AMSL to as much as 2920 feet AMSL and the CAT A/B circling MDA from an anticipated 2560/2600 feet AMSL to as much as 2920 feet AMSL.

2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE

The following proposed turbines would increase the Minimum Vectoring Altitude (MVA) for Bismarck TRACON (BIS) Bismarck, ND., BIS_MVA_FUS3_2023 and BIS_MVA_FUS5_2023, Sector E from 3700 feet AMSL to 3800 feet AMSL.

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

d. Section 77.17(a)(4): A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.

The following proposed turbines would Increase the Minimum Obstruction Clearance Altitude (MOCA) along V15 from BISMARK (BIS) VORTAC, 117 degree radial to ABERDEEN (ABR) VORTAC from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-890-OE
2024-WTE-891-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

3. TITLE 14 CFR PART 77 - EFFECT ON AERONAUTICAL OPERATIONS

a. Section 77.29 (a)(1): impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At a height greater than 499 feet AGL, the proposed wind farm would extend into airspace normally used for VFR en route flight and may be located within 2 statute miles (SM) of potential VFR Routes as defined by FAA Order 7400.2, Section 6-3-8. The turbines within 2 SM of a VFR Route would have an adverse effect upon VFR air navigation. Further study was required to determine whether the proposed structures would have a substantial adverse effect on VFR operations.

4. TITLE 14 CFR PART 77 - FURTHER STUDY AND PUBLIC COMMENTS

In order to facilitate the public comment process, all 103 studies were circularized under ASN 2024-WTE-853-OE on 04/09/2024, to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. There was one comment received as a result of the circularization concluding on 05/16/2024. The comment(s) is summarized as follows:

Comments: We had Badger Wind, LLC remove 5 wind turbines from their plans in 2021 because they would interfere with our plans to add instrument approach to our airport in the future. I would like them to remove this wind turbine T-32 from their plans. It is to close to our airport. They have the whole country side to develop wind turbines, I do not understand why they want to place wind turbines this close to town and this close to an airport. Please do not allow them to place a tower this close to our airport.

FAA Response: The FAA study indicates that this turbine does not impact future airport plans other than the PLAN on FILE: Obstacle penetrates RWY 32 40:1 departure surface by 65 feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES, RWY 32, STD with a minimum climb gradient increase from anticipated 200 to 223 feet per NM to 2900 feet AMSL. The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. Additionally, the total IFR traffic counts for the 6L5 airport for the period of 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity.. Therefore, the proposed wind farm would not have a substantial adverse effect on IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Divion responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is a proposed TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) ruway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt ruway that would be an A(NP) runway, which is a utility ruway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.

5. BASIS FOR DETERMINATION

a. IFR EFFECTS

The aeronautical study identified an IFR effect(s) for 7L2, 6L5, BIS and V15. MSAs are the minimum obstacle clearance altitudes within a specified distance from the navigation facilities upon which procedures are predicated. MSA altitudes are designed for emergency use only and are not routinely used by pilots or by air traffic control. Consequently, MSAs are not circulated for public comment as they are not considered a factor in determining the extent of adverse effect.

MVAs are solely used by ATC, not published for public use and therefore are not circulated for public comment. A review by the controlling facility determined that increasing the altitude in the sector would ensure the required obstacle clearance is maintained and therefore would not have a substantial adverse effect on air traffic operations.

MOCAs assure obstacle clearance over the entire route segment to which they apply and assure navigational signal coverage within 22 NM of the associated VOR navigational facility. For that portion of the route

segment beyond 22 NM from the VOR, where the MOCA is lower than the MEA and there are no plans to lower the MEA to the MOCA, a structure that affects only the MOCA would not be considered to have substantial adverse effect. Other situations require study as ATC may assign altitudes down to the MOCA under certain conditions. Further study revealed that only the MOCA is effected in this area and that the MOCA is not routinely assigned by ATC.

The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. The total IFR traffic counts for 6L5 f from 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity. Therefore, the proposed wind farm would not have a substantial adverse effect on any IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Division responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is proposed as a TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) runway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt runway that would be an A(NP) runway, which is a utility runway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.
The proposed structures would have no effect on any other existing or proposed arrival, departure, or en route IFR operations or procedures.

b. VFR EFFECTS
The aeronautical study identified no effect on any existing or proposed VFR arrival or departure operations. The proposals would be located beyond the normal traffic pattern airspace for 6L5 and any other public use or military airport. At 599 feet AGL, the structures would be located within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm.

In accordance with FAA Order 7400.2, the proposed wind farm would not affect a significant volume of aircraft and therefore, it is determined they will not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

c. RADAR EFFECTS
The aeronautical study identified no effect on ATC radar, direction finders, ATC tower line-of-sight visibility, air navigation, communication facilities, and other surveillance systems for any known public-use or military airports.

d. CUMULATIVE EFFECT
The cumulative impact of the proposed structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any substantial adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposals affect the capacity of any known existing or planned public-use or military airport.

6. DETERMINATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation providing the conditions set forth in this determination are met.

7. CONDITIONS

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, sixty (60) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, ten (10) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE

2024-WTE-837-OE
2024-WTE-838-OE
2024-WTE-839-OE
2024-WTE-840-OE
2024-WTE-847-OE
2024-WTE-849-OE
2024-WTE-850-OE
2024-WTE-851-OE
2024-WTE-852-OE
2024-WTE-853-OE
2024-WTE-854-OE
2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-863-OE
2024-WTE-864-OE
2024-WTE-865-OE
2024-WTE-866-OE
2024-WTE-867-OE
2024-WTE-868-OE
2024-WTE-878-OE
2024-WTE-879-OE
2024-WTE-880-OE
2024-WTE-881-OE
2024-WTE-882-OE
2024-WTE-883-OE
2024-WTE-884-OE
2024-WTE-885-OE
2024-WTE-886-OE
2024-WTE-887-OE
2024-WTE-892-OE
2024-WTE-893-OE
2024-WTE-896-OE
2024-WTE-897-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-919-OE
2024-WTE-920-OE

Additionally, within five days after each project structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (https://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

****

ACRONYMS & ABBREVIATIONS
AGL, Above Ground Level
AMSL, Above Mean Sea Level
ARP, Airport Reference Point
ARSR, Air Route Surveillance Radar
ARTCC, Air Route Traffic Control Center
ASN, Aeronautical Study Number
ASR, Airport Surveillance Radar
ATC, Air Traffic Control
ATCT, Air Traffic Control Tower
CARSR, Common Air Route Surveillance Radar
CAT, Category
CFR, Code of Federal Regulations
CG, Climb Gradient
DA, Decision Altitude
DME, Distance Measuring Equipment
FAA, Federal Aviation Administration
FUS, Fusion
GPS, Global Positioning System
IAF, Initial Approach Fix
IAP, Instrument Approach Procedure
ICA, Initial Climb Area
IFR, Instrument Flight Rules
INT, Intersection
LAT, Latitude
LNAV, Lateral Navigation
LOC, Localizer
LONG, Longitude
LP, Localizer Performance
LPV, Localizer Performance with Vertical Guidance
MDA, Minimum Descent Altitude
MEA, Minimum En route Altitude
MET, Meteorological Evaluation Tower
MIA, Minimum IFR Altitude
Min, Minimum
MOCA, Minimum Obstruction Clearance Altitude
MSA, Minimum Safe Altitude
MSL, Mean Sea Level
MVA, Minimum Vectoring Altitude
NA, Not Authorized
NAS, National Airspace System

NAVAID, Navigational Aid
NDB, Non-Directional Radio Beacon
NEH, No Effect Height
NM, Nautical Mile
NOTAM, Notice to Airmen
NPF, Notice of Preliminary Findings
OCS, Obstacle Clearance Surface
OE, Obstruction Evaluation
OEG, Obstruction Evaluation Group
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace.
P-NOTAM, Permanent Notice to Airmen
RLOS, Radar Line of Sight
RNAV, Area Navigation
RNP, Required Navigation Performance
RWY, Runway
S-, Straight-in
SE, Site Elevation
S-LOC, Straight-in Localizer
SM, Statute Miles
Std., Standard
TAA, Terminal Arrival Area
TACAN, Tactical Air Navigation System
TERPS, Terminal Instrument Procedures
TPA, Traffic Pattern Airspace
TRACON, Terminal Radar Approach Control
V, Victor Airway
VFR, Visual Flight Rules
VHF, Very High Frequency
VOR, VHF Omnidirectional Radio Range System
VORTAC, VOR/TACAN System
WTE, Wind Turbine East
WTW, Wind Turbine West


(422)
2392
(270)
433
300)
2265
Wishek
junkyard
28
2283
(256)
WISHEK MUNI (6L5)
2043 *L-34
122.9

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-921-OE

Issued Date: 02/20/2025

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** MARKING & LIGHTING RECOMMENDATION ****

The Federal Aviation Administration has completed an evaluation of your request concerning:

Structure:	Wind Turbine T-115
Location:	Wishek, ND
Latitude:	46-12-48.50N NAD 83
Longitude:	99-34-25.28W
Heights:	2152 feet site elevation (SE)
	599 feet above ground level (AGL)
	2751 feet above mean sea level (AMSL)

Based on this evaluation, we are unable to accommodate your request.

The structure should continue to be marked/lighted utilizing White Paint/Synchronized Red Lights.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

Your request for consideration to utilize an Aircraft Detection Lighting System to operate the recommended lighting is not approved. See attached for additional condition(s) or information.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed

and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This evaluation concerns the effect of the marking/lighting changes on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6051, or Christopher.evans@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-921-OE.

Signature Control No: 611179998-647985488 (MAL -WT)
Christopher Evans
Specialist

Attachment(s)
Additional Information

Due to the proximity of the structure to the Wishek Municipal Airport (6L5), the lights for this turbine must not be controlled by the ADLS system. To ensure the safety of aircraft engaged in low-level, agricultural and/or helicopter operations, the structure must remain marked and lighted in accordance with the original determination for this structure.

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTE-921-OE

Issued Date: 06/27/2024

Amanda Coletti
Badger Wind, LLC
401 N. Michigan Avenue
Suite 501
Chicago, IL 60611

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine T-115
Location:	Wishek, ND
Latitude:	46-12-48.50N NAD 83
Longitude:	99-34-25.28W
Heights:	2152 feet site elevation (SE)
	599 feet above ground level (AGL)
	2751 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 60 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 12/27/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before July 27, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on August 06, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should

be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Buck Reynolds, at (847) 294-7576, or Wayne.Reynolds@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTE-921-OE.

Signature Control No: 611179998-625761698 (DNH -WT)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Map(s)

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

A list of commonly used acronyms and abbreviations is available at the end of this document. A full list is available at the FAA's public website at https://oeaaa.faa.gov/oeaaa/downloads/external/content/FAA_Acronyms.pdf .

1. PROPOSAL DESCRIPTION

Proposed are 103 wind turbines for a project that lies approximately 1.97 NM to 3.95 NM west southwest of the airport reference point (ARP) of the Wishek Municipal Airport (6L5), Wishek, ND., extending clockwise to 2.64 NM to 7.13NM west of the 65L ARP, extending further clockwise to 3.06 NM to 3.88 NM north northeast of the 6L5 ARP.

For the sake of efficiency, all of the wind turbines in this project that have similar impacts are included in this narrative. All 103 wind turbines have been identified as having aeronautical effects which are outlined in the summary below.

The proposed wind turbines' described heights and locations are expressed in Above Ground Level (AGL) height, Above Mean Sea Level (AMSL) height and latitude (LAT)/longitude (LONG).

ASN	AGL	AMSL	LAT	LONG
2024-WTE-822-OE	599	2646	46-22-20.66N	99-39-36.26W
2024-WTE-823-OE	599	2640	46-22-26.42N	99-39-13.76W
2024-WTE-824-OE	599	2632	46-22-36.21N	99-38-57.17W
2024-WTE-825-OE	599	2740	46-19-21.83N	99-39-32.80W
2024-WTE-826-OE	599	2747	46-19-23.07N	99-39-09.52W
2024-WTE-827-OE	599	2706	46-17-10.19N	99-40-51.13W
2024-WTE-828-OE	599	2697	46-17-10.68N	99-40-28.47W
2024-WTE-829-OE	599	2685	46-17-11.39N	99-40-06.89W
2024-WTE-830-OE	599	2678	46-17-11.11N	99-39-36.18W
2024-WTE-831-OE	599	2693	46-17-22.64N	99-39-25.48W
2024-WTE-832-OE	599	2690	46-17-29.68N	99-39-07.10W
2024-WTE-833-OE	599	2700	46-17-58.60N	99-38-23.17W
2024-WTE-834-OE	599	2686	46-18-08.88N	99-38-17.12W
2024-WTE-835-OE	599	2686	46-18-24.47N	99-38-08.84W
2024-WTE-836-OE	599	2723	46-18-33.83N	99-37-58.90W
2024-WTE-837-OE	599	2711	46-18-51.34N	99-37-56.34W
2024-WTE-838-OE	599	2680	46-19-03.07N	99-37-49.70W
2024-WTE-839-OE	599	2646	46-18-55.13N	99-37-14.54W

2024-WTE-840-OE / 599 / 2670 / 46-19-21.11N / 99-36-33.26W
2024-WTE-841-OE / 599 / 2683 / 46-16-41.24N / 99-39-25.45W

2024-WTE-842-OE / 599 / 2681 / 46-16-47.67N / 99-39-10.43W
2024-WTE-843-OE / 599 / 2660 / 46-16-42.79N / 99-38-39.53W
2024-WTE-844-OE / 599 / 2651 / 46-16-51.88N / 99-38-26.23W
2024-WTE-845-OE / 599 / 2651 / 46-17-04.98N / 99-38-05.59W
2024-WTE-846-OE / 599 / 2674 / 46-17-20.72N / 99-37-56.23W
2024-WTE-847-OE / 599 / 2680 / 46-17-30.61N / 99-37-43.17W
2024-WTE-848-OE / 599 / 2668 / 46-17-59.09N / 99-37-19.19W
2024-WTE-849-OE / 599 / 2640 / 46-18-26.22N / 99-37-04.35W
2024-WTE-850-OE / 599 / 2633 / 46-16-52.86N / 99-37-07.88W
2024-WTE-851-OE / 599 / 2657 / 46-17-09.39N / 99-37-00.77W

2024-WTE-852-OE / 599 / 2670 / 46-17-21.00N / 99-36-52.26W
2024-WTE-853-OE / 599 / 2646 / 46-17-31.39N / 99-36-41.62W
2024-WTE-854-OE / 599 / 2633 / 46-17-41.37N / 99-36-36.64W
2024-WTE-855-OE / 599 / 2628 / 46-17-58.38N / 99-36-24.07W
2024-WTE-856-OE / 599 / 2594 / 46-18-36.13N / 99-35-14.91W
2024-WTE-857-OE / 599 / 2604 / 46-18-50.64N / 99-35-16.10W
2024-WTE-858-OE / 599 / 2600 / 46-19-05.37N / 99-35-11.90W
2024-WTE-859-OE / 599 / 2763 / 46-14-48.82N / 99-38-37.69W
2024-WTE-860-OE / 599 / 2729 / 46-14-53.46N / 99-38-19.53W
2024-WTE-861-OE / 599 / 2714 / 46-15-13.35N / 99-38-09.39W

2024-WTE-862-OE / 599 / 2714 / 46-15-21.25N / 99-37-57.66W
2024-WTE-863-OE / 599 / 2668 / 46-16-05.27N / 99-37-12.34W
2024-WTE-864-OE / 599 / 2631 / 46-16-14.38N / 99-37-00.06W
2024-WTE-865-OE / 599 / 2665 / 46-16-06.44N / 99-36-17.92W
2024-WTE-866-OE / 599 / 2623 / 46-16-17.58N / 99-35-59.50W
2024-WTE-867-OE / 599 / 2697 / 46-18-03.60N / 99-32-51.05W
2024-WTE-868-OE / 599 / 2743 / 46-18-10.09N / 99-32-28.16W
2024-WTE-869-OE / 599 / 2776 / 46-18-21.17N / 99-32-15.37W
2024-WTE-870-OE / 599 / 2767 / 46-18-32.54N / 99-32-07.81W
2024-WTE-871-OE / 599 / 2768 / 46-18-40.20N / 99-31-52.51W

2024-WTE-872-OE / 599 / 2797 / 46-19-21.37N / 99-31-26.62W
2024-WTE-873-OE / 599 / 2737 / 46-19-43.23N / 99-30-46.28W
2024-WTE-874-OE / 599 / 2695 / 46-19-52.97N / 99-30-33.28W
2024-WTE-875-OE / 599 / 2707 / 46-20-07.36N / 99-30-54.18W
2024-WTE-876-OE / 599 / 2719 / 46-20-15.34N / 99-31-35.65W
2024-WTE-877-OE / 599 / 2667 / 46-20-40.93N / 99-30-23.57W
2024-WTE-878-OE / 599 / 2716 / 46-14-48.22N / 99-36-54.75W
2024-WTE-879-OE / 599 / 2710 / 46-14-54.01N / 99-36-38.28W
2024-WTE-880-OE / 599 / 2692 / 46-14-56.63N / 99-36-14.82W
2024-WTE-881-OE / 599 / 2707 / 46-15-03.68N / 99-36-00.33W

2024-WTE-882-OE / 599 / 2722 / 46-17-13.91N / 99-32-13.87W
2024-WTE-883-OE / 599 / 2702 / 46-17-22.64N / 99-32-04.75W

2024-WTE-884-OE / 599 / 2758 / 46-18-11.56N / 99-31-24.04W
2024-WTE-885-OE / 599 / 2700 / 46-17-57.69N / 99-30-26.08W
2024-WTE-886-OE / 599 / 2705 / 46-17-49.06N / 99-30-15.49W
2024-WTE-887-OE / 599 / 2730 / 46-18-34.37N / 99-30-18.50W
2024-WTE-888-OE / 599 / 2727 / 46-18-05.96N / 99-29-03.65W
2024-WTE-889-OE / 599 / 2813 / 46-13-27.26N / 99-36-54.27W
2024-WTE-890-OE / 599 / 2762 / 46-14-00.18N / 99-36-53.19W
2024-WTE-891-OE / 599 / 2755 / 46-14-12.01N / 99-36-39.97W

2024-WTE-892-OE / 599 / 2707 / 46-14-08.35N / 99-35-19.52W
2024-WTE-893-OE / 599 / 2679 / 46-14-08.50N / 99-34-57.21W
2024-WTE-894-OE / 599 / 2665 / 46-13-30.79N / 99-34-24.50W
2024-WTE-895-OE / 599 / 2718 / 46-16-17.48N / 99-29-27.65W
2024-WTE-896-OE / 599 / 2757 / 46-16-43.28N / 99-29-31.15W
2024-WTE-897-OE / 599 / 2750 / 46-17-06.97N / 99-29-29.96W
2024-WTE-898-OE / 599 / 2765 / 46-19-24.06N / 99-40-23.61W
2024-WTE-899-OE / 599 / 2773 / 46-19-27.25N / 99-40-05.97W
2024-WTE-900-OE / 599 / 2763 / 46-19-42.87N / 99-39-03.07W
2024-WTE-901-OE / 599 / 2715 / 46-17-33.19N / 99-40-19.03W

2024-WTE-902-OE / 599 / 2725 / 46-17-43.65N / 99-40-08.96W
2024-WTE-903-OE / 599 / 2715 / 46-18-00.37N / 99-40-08.19W
2024-WTE-904-OE / 599 / 2787 / 46-15-46.97N / 99-42-35.58W
2024-WTE-905-OE / 599 / 2790 / 46-15-49.35N / 99-42-16.32W
2024-WTE-906-OE / 599 / 2785 / 46-15-52.71N / 99-41-56.74W
2024-WTE-907-OE / 599 / 2781 / 46-15-48.50N / 99-40-57.22W
2024-WTE-908-OE / 599 / 2784 / 46-15-58.17N / 99-40-43.79W
2024-WTE-909-OE / 599 / 2784 / 46-16-03.44N / 99-40-24.98W
2024-WTE-910-OE / 599 / 2723 / 46-16-14.21N / 99-40-05.49W
2024-WTE-911-OE / 599 / 2712 / 46-16-14.70N / 99-39-43.12W

2024-WTE-912-OE / 599 / 2629 / 46-16-20.97N / 99-35-37.39W
2024-WTE-913-OE / 599 / 2827 / 46-13-09.40N / 99-37-26.04W
2024-WTE-914-OE / 599 / 2804 / 46-12-39.11N / 99-36-54.20W
2024-WTE-915-OE / 599 / 2809 / 46-12-50.95N / 99-36-45.69W
2024-WTE-916-OE / 599 / 2864 / 46-12-50.65N / 99-35-57.99W
2024-WTE-917-OE / 599 / 2823 / 46-12-11.58N / 99-35-33.44W
2024-WTE-918-OE / 599 / 2791 / 46-12-19.36N / 99-35-20.55W
2024-WTE-919-OE / 599 / 2749 / 46-12-20.98N / 99-35-00.78W
2024-WTE-920-OE / 599 / 2749 / 46-12-24.53N / 99-34-38.61W
2024-WTE-921-OE / 599 / 2751 / 46-12-48.50N / 99-34-25.28W

2024-WTE-922-OE / 599 / 2680 / 46-16-16.57N / 99-39-22.49W
2024-WTE-923-OE / 599 / 2827 / 46-13-15.45N / 99-37-02.58W
2024-WTE-924-OE / 599 / 2821 / 46-12-43.36N / 99-36-16.39W

2. TITLE 14 CFR PART 77 - OBSTRUCTION STANDARDS EXCEEDED

a. Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. The proposals would all exceed this standard by 100 feet.

b. Section 77.17(a)(2): A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 NM miles of the established reference point of 6L5, and that height increases in the proportion of 100 feet for each additional NM from the airport up to a maximum of 499 feet. The following would exceed by:

2024-WTE-829-OE	119 feet
2024-WTE-830-OE	152 feet
2024-WTE-831-OE	155 feet
2024-WTE-832-OE	169 feet
2024-WTE-833-OE	186 feet
2024-WTE-834-OE	181 feet
2024-WTE-835-OE	172 feet
2024-WTE-836-OE	171 feet
2024-WTE-837-OE	153 feet
2024-WTE-838-OE	144 feet
2024-WTE-839-OE	181 feet
2024-WTE-840-OE	175 feet
2024-WTE-841-OE	182 feet
2024-WTE-842-OE	194 feet
2024-WTE-843-OE	231 feet
2024-WTE-844-OE	239 feet
2024-WTE-845-OE	251 feet
2024-WTE-846-OE	247 feet
2024-WTE-847-OE	251 feet
2024-WTE-848-OE	244 feet
2024-WTE-849-OE	223 feet
2024-WTE-850-OE	310 feet
2024-WTE-851-OE	311 feet
2024-WTE-852-OE	308 feet
2024-WTE-853-OE	307 feet
2024-WTE-854-OE	291 feet
2024-WTE-855-OE	276 feet
2024-WTE-856-OE	238 feet
2024-WTE-857-OE	226 feet
2024-WTE-858-OE	202 feet
2024-WTE-859-OE	266 feet
2024-WTE-860-OE	287 feet
2024-WTE-861-OE	298 feet
2024-WTE-862-OE	310 feet
2024-WTE-863-OE	347 feet
2024-WTE-864-OE	344 feet
2024-WTE-865-OE	399 feet
2024-WTE-866-OE	380 feet

2024-WTE-867-OE	392 feet
2024-WTE-868-OE	383 feet
2024-WTE-869-OE	365 feet
2024-WTE-870-OE	346 feet
2024-WTE-871-OE	333 feet
2024-WTE-872-OE	261 feet
2024-WTE-873-OE	217 feet
2024-WTE-874-OE	198 feet
2024-WTE-875-OE	180 feet
2024-WTE-876-OE	173 feet
2024-WTE-877-OE	118 feet
2024-WTE-878-OE	384 feet
2024-WTE-879-OE	399 feet
2024-WTE-880-OE	399 feet
2024-WTE-881-OE	399 feet
2024-WTE-882-OE	399 feet
2024-WTE-883-OE	399 feet
2024-WTE-884-OE	376 feet
2024-WTE-885-OE	378 feet
2024-WTE-886-OE	386 feet
2024-WTE-887-OE	318 feet
2024-WTE-888-OE	319 feet
2024-WTE-889-OE	350 feet
2024-WTE-890-OE	372 feet
2024-WTE-891-OE	392 feet
2024-WTE-892-OE	399 feet
2024-WTE-893-OE	399 feet
2024-WTE-894-OE	399 feet
2024-WTE-895-OE	399 feet
2024-WTE-896-OE	399 feet
2024-WTE-897-OE	399 feet
2024-WTE-908-OE	112 feet
2024-WTE-909-OE	131 feet
2024-WTE-910-OE	150 feet
2024-WTE-911-OE	175 feet
2024-WTE-912-OE	387 feet
2024-WTE-913-OE	304 feet
2024-WTE-914-OE	309 feet
2024-WTE-915-OE	328 feet
2024-WTE-916-OE	372 feet
2024-WTE-917-OE	344 feet
2024-WTE-918-OE	364 feet
2024-WTE-919-OE	379 feet
2024-WTE-920-OE	398 feet

2024-WTE-921-OE 399 feet
2024-WTE-922-OE 197 feet
2024-WTE-923-OE 333 feet
2024-WTE-924-OE 347 feet
2024-WTE-926-OE 134 feet
2024-WTE-927-OE 144 feet
2024-WTE-928-OE 150 feet
2024-WTE-929-OE 150 feet

c. Section 77.17 (a)(3): A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

The following proposed turbines increase the Linton Municipal (7L2) Linton, ND. RNAV (GPS) RWY 27 ORIG-C, Minimum Safe Altitude (MSA) from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-898-OE
2024-WTE-899-OE
2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE

2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE

2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines increase the Linton Municipal (7L2) Linton ND. RNAV (GPS) RWY 9 ORIG-C, MSA from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE
2024-WTE-837-OE
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-878-OE

2024-WTE-879-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-892-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE

2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The following proposed turbines penetrate the Wishek Municipal (6L5) Wishek, ND., RWY 32 (PLAN on FILE) 40:1 departure surface by _____ feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES RWY 32, STD with a minimum climb gradient increase from an anticipated 200 to _____ feet per NM to _____ feet AMSL.

ASN	penetration in feet	feet per/NM	to feet AMSL
2024-WTE-847-OE	7	204	2900
2024-WTE-850-OE	56	222	2900
2024-WTE-851-OE	58	233	2900
2024-WTE-852-OE	89	232	2900
2024-WTE-853-OE	65	223	2900
2024-WTE-854-OE	31	222	2900
2024-WTE-862-OE	4	201	3000
2024-WTE-863-OE	76	234	2900
2024-WTE-864-OE	65	231	2900
2024-WTE-865-OE	13	295	2900
2024-WTE-866-OE	162	294	2900
2024-WTE-867-OE	211	306	3000
2024-WTE-868-OE	223	309	3000
2024-WTE-869-OE	220	303	3100
2024-WTE-870-OE	180	278	3000
2024-WTE-871-OE	150	262	3100
2024-WTE-872-OE	67	226	3100
2024-WTE-878-OE	40	224	3000
2024-WTE-879-OE	64	244	3000
2024-WTE-880-OE	85	264	2900
2024-WTE-881-OE	136	320	2900
2024-WTE-882-OE	234	418	2900
2024-WTE-883-OE	215	377	3000
2024-WTE-884-OE	157	298	3000
2024-WTE-885-OE	20	212	3000
2024-WTE-886-OE	14	208	3000
2024-WTE-887-OE	12	209	3000
2024-WTE-891-OE	24	214	3000
2024-WTE-892-OE	56	237	3000
2024-WTE-893-OE	61	245	2900
2024-WTE-896-OE	31	224	3000

2024-WTE-897-OE	17	211	3000
2024-WTE-912-OE	214	331	2900

The following proposed turbines would increase the Wishek Municipal Airport (6L5) Wishek, ND. minimum altitudes for the RNAV (GPS) RWY 14 (PROPOSED), LNAV MDA from an anticipated 2560 feet AMSL to as much as 2920 feet AMSL and the CAT A/B circling MDA from an anticipated 2560/2600 feet AMSL to as much as 2920 feet AMSL.

2024-WTE-855-OE
2024-WTE-856-OE
2024-WTE-857-OE
2024-WTE-858-OE

The following proposed turbines would increase the Minimum Vectoring Altitude (MVA) for Bismarck TRACON (BIS) Bismarck, ND., BIS_MVA_FUS3_2023 and BIS_MVA_FUS5_2023, Sector E from 3700 feet AMSL to 3800 feet AMSL.

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

d. Section 77.17(a)(4): A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.

The following proposed turbines would Increase the Minimum Obstruction Clearance Altitude (MOCA) along V15 from BISMARK (BIS) VORTAC, 117 degree radial to ABERDEEN (ABR) VORTAC from 3700 feet AMSL to as much as 3900 feet AMSL.

Increase to 3800 feet AMSL
2024-WTE-859-OE
2024-WTE-860-OE
2024-WTE-861-OE
2024-WTE-862-OE
2024-WTE-890-OE
2024-WTE-891-OE

Increase to 3900 feet AMSL
2024-WTE-889-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-913-OE

2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-919-OE
2024-WTE-920-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

3. TITLE 14 CFR PART 77 - EFFECT ON AERONAUTICAL OPERATIONS

a. Section 77.29 (a)(1): impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At a height greater than 499 feet AGL, the proposed wind farm would extend into airspace normally used for VFR en route flight and may be located within 2 statute miles (SM) of potential VFR Routes as defined by FAA Order 7400.2, Section 6-3-8. The turbines within 2 SM of a VFR Route would have an adverse effect upon VFR air navigation. Further study was required to determine whether the proposed structures would have a substantial adverse effect on VFR operations.

4. TITLE 14 CFR PART 77 - FURTHER STUDY AND PUBLIC COMMENTS

In order to facilitate the public comment process, all 103 studies were circularized under ASN 2024-WTE-853-OE on 04/09/2024, to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. There was one comment received as a result of the circularization concluding on 05/16/2024. The comment(s) is summarized as follows:

Comments: We had Badger Wind, LLC remove 5 wind turbines from their plans in 2021 because they would interfere with our plans to add instrument approach to our airport in the future. I would like them to remove this wind turbine T-32 from their plans. It is to close to our airport. They have the whole country side to develop wind turbines, I do not understand why they want to place wind turbines this close to town and this close to an airport. Please do not allow them to place a tower this close to our airport.

FAA Response: The FAA study indicates that this turbine does not impact future airport plans other than the PLAN on FILE: Obstacle penetrates RWY 32 40:1 departure surface by 65 feet requiring TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES, RWY 32, STD with a minimum climb gradient increase from anticipated 200 to 223 feet per NM to 2900 feet AMSL. The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. Additionally, the total IFR traffic counts for the 6L5 airport for the period of 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity.. Therefore, the proposed wind farm would not have a substantial adverse effect on IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Divion responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is a proposed TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) ruway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt ruway that would be an A(NP) runway, which is a utility ruway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.

5. BASIS FOR DETERMINATION

a. IFR EFFECTS

The aeronautical study identified an IFR effect(s) for 7L2, 6L5, BIS and V15. MSAs are the minimum obstacle clearance altitudes within a specified distance from the navigation facilities upon which procedures are predicated. MSA altitudes are designed for emergency use only and are not routinely used by pilots or by air traffic control. Consequently, MSAs are not circulated for public comment as they are not considered a factor in determining the extent of adverse effect.

MVAs are solely used by ATC, not published for public use and therefore are not circulated for public comment. A review by the controlling facility determined that increasing the altitude in the sector would ensure the required obstacle clearance is maintained and therefore would not have a substantial adverse effect on air traffic operations.

MOCAs assure obstacle clearance over the entire route segment to which they apply and assure navigational signal coverage within 22 NM of the associated VOR navigational facility. For that portion of the route

segment beyond 22 NM from the VOR, where the MOCA is lower than the MEA and there are no plans to lower the MEA to the MOCA, a structure that affects only the MOCA would not be considered to have substantial adverse effect. Other situations require study as ATC may assign altitudes down to the MOCA under certain conditions. Further study revealed that only the MOCA is effected in this area and that the MOCA is not routinely assigned by ATC.

The increase to the 6L5 Runway 32 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. The total IFR traffic counts for 6L5 f from 6/1/2023 through 6/1/2024 were 3 IFR Operations (1 CAT A and 2 CAT B operations), which does not meet the threshold of a significant volume of aircraft activity. Therefore, the proposed wind farm would not have a substantial adverse effect on any IFR operations for 6L5. On the Circularization letter that was issued on 4/9/2024, there were impacts listed for the 6L5 airport for CAT C and CAT D operations, however, after further coordination and validation with the FAA Airports Division responsible for 6L5, it was confirmed that that 6L5 does not support CAT C nor D operations. RWY 05/23 is proposed as a TURF runway A(V), which is a utility runway with a visual approach intended for CAT A/B operations. Runway 14/32 is currently an A(V) runway, but is proposed to be increased in size from a 3460'X60' asphalt runway to a 3700'X75' asphalt runway that would be an A(NP) runway, which is a utility runway with a Non-Precision approach intended for CAT A/B. Approach Category A- Speed less than 91 knots, Category B- Speed 91 knots or more but less than 121 knots.
The proposed structures would have no effect on any other existing or proposed arrival, departure, or en route IFR operations or procedures.

b. VFR EFFECTS
The aeronautical study identified no effect on any existing or proposed VFR arrival or departure operations. The proposals would be located beyond the normal traffic pattern airspace for 6L5 and any other public use or military airport. At 599 feet AGL, the structures would be located within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm.

In accordance with FAA Order 7400.2, the proposed wind farm would not affect a significant volume of aircraft and therefore, it is determined they will not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

c. RADAR EFFECTS
The aeronautical study identified no effect on ATC radar, direction finders, ATC tower line-of-sight visibility, air navigation, communication facilities, and other surveillance systems for any known public-use or military airports.

d. CUMULATIVE EFFECT
The cumulative impact of the proposed structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any substantial adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposals affect the capacity of any known existing or planned public-use or military airport.

6. DETERMINATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation providing the conditions set forth in this determination are met.

7. CONDITIONS

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, sixty (60) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-859-OE
2024-WTE-869-OE
2024-WTE-870-OE
2024-WTE-871-OE
2024-WTE-872-OE
2024-WTE-889-OE
2024-WTE-890-OE
2024-WTE-891-OE
2024-WTE-898-OE
2024-WTE-899-OE

2024-WTE-900-OE
2024-WTE-901-OE
2024-WTE-902-OE
2024-WTE-903-OE
2024-WTE-904-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE

2024-WTE-913-OE
2024-WTE-914-OE
2024-WTE-915-OE
2024-WTE-916-OE
2024-WTE-917-OE
2024-WTE-918-OE
2024-WTE-921-OE
2024-WTE-923-OE
2024-WTE-924-OE

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, ten (10) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2024-WTE-825-OE
2024-WTE-826-OE
2024-WTE-827-OE
2024-WTE-836-OE

2024-WTE-837-OE
2024-WTE-838-OE
2024-WTE-839-OE
2024-WTE-840-OE
2024-WTE-847-OE
2024-WTE-849-OE
2024-WTE-850-OE
2024-WTE-851-OE
2024-WTE-852-OE
2024-WTE-853-OE
2024-WTE-854-OE
2024-WTE-855-OE
2024-WTE-856-OE
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2024-WTE-863-OE
2024-WTE-864-OE
2024-WTE-865-OE
2024-WTE-866-OE
2024-WTE-867-OE
2024-WTE-868-OE
2024-WTE-878-OE
2024-WTE-879-OE
2024-WTE-880-OE
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2024-WTE-887-OE
2024-WTE-892-OE
2024-WTE-893-OE
2024-WTE-896-OE
2024-WTE-897-OE
2024-WTE-905-OE
2024-WTE-906-OE
2024-WTE-907-OE
2024-WTE-908-OE
2024-WTE-909-OE
2024-WTE-910-OE
2024-WTE-911-OE
2024-WTE-919-OE
2024-WTE-920-OE

Additionally, within five days after each project structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (https://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

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ACRONYMS & ABBREVIATIONS
AGL, Above Ground Level
AMSL, Above Mean Sea Level
ARP, Airport Reference Point
ARSR, Air Route Surveillance Radar
ARTCC, Air Route Traffic Control Center
ASN, Aeronautical Study Number
ASR, Airport Surveillance Radar
ATC, Air Traffic Control
ATCT, Air Traffic Control Tower
CARSR, Common Air Route Surveillance Radar
CAT, Category
CFR, Code of Federal Regulations
CG, Climb Gradient
DA, Decision Altitude
DME, Distance Measuring Equipment
FAA, Federal Aviation Administration
FUS, Fusion
GPS, Global Positioning System
IAF, Initial Approach Fix
IAP, Instrument Approach Procedure
ICA, Initial Climb Area
IFR, Instrument Flight Rules
INT, Intersection
LAT, Latitude
LNAV, Lateral Navigation
LOC, Localizer
LONG, Longitude
LP, Localizer Performance
LPV, Localizer Performance with Vertical Guidance
MDA, Minimum Descent Altitude
MEA, Minimum En route Altitude
MET, Meteorological Evaluation Tower
MIA, Minimum IFR Altitude
Min, Minimum
MOCA, Minimum Obstruction Clearance Altitude
MSA, Minimum Safe Altitude
MSL, Mean Sea Level
MVA, Minimum Vectoring Altitude
NA, Not Authorized
NAS, National Airspace System

NAVAID, Navigational Aid
NDB, Non-Directional Radio Beacon
NEH, No Effect Height
NM, Nautical Mile
NOTAM, Notice to Airmen
NPF, Notice of Preliminary Findings
OCS, Obstacle Clearance Surface
OE, Obstruction Evaluation
OEG, Obstruction Evaluation Group
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace.
P-NOTAM, Permanent Notice to Airmen
RLOS, Radar Line of Sight
RNAV, Area Navigation
RNP, Required Navigation Performance
RWY, Runway
S-, Straight-in
SE, Site Elevation
S-LOC, Straight-in Localizer
SM, Statute Miles
Std., Standard
TAA, Terminal Arrival Area
TACAN, Tactical Air Navigation System
TERPS, Terminal Instrument Procedures
TPA, Traffic Pattern Airspace
TRACON, Terminal Radar Approach Control
V, Victor Airway
VFR, Visual Flight Rules
VHF, Very High Frequency
VOR, VHF Omnidirectional Radio Range System
VORTAC, VOR/TACAN System
WTE, Wind Turbine East
WTW, Wind Turbine West


2265
Wishek
junkyard
2283
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2043 *L-34
122.9
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