



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

Aeronautical Study No.  
 2021-WTE-1926-OE

Issued Date: 11/29/2021

Lauren Kaapcke  
 North Bend Wind Project  
 3760 State Street, Suite 200  
 Suite 200  
 Santa Barbara, CA 93105

**\*\* 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 30  
 Location: Pierre, SD  
 Latitude: 44-23-03.63N NAD 83  
 Longitude: 99-39-22.82W  
 Heights: 1957 feet site elevation (SE)  
 625 feet above ground level (AGL)  
 2582 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 Airmen (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)
- 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 05/29/2023 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 December 29, 2021. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted to the Manager of the Rules and Regulations Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Washington, DC 20591, via email at [OEPetitions@faa.gov](mailto:OEPetitions@faa.gov), or via facsimile (202) 267-9328.

This determination becomes final on January 08, 2022 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. For any questions regarding your petition, please 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).

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact Lan Norris, at (404) 305-6645, or [Lan.norris@faa.gov](mailto:Lan.norris@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-WTE-1926-OE.

**Signature Control No: 482124683-502793525**

( DNH -WT )

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Case Description

Map(s)

## Additional information for ASN 2021-WTE-1926-OE

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](https://oeaaa.faa.gov/oeaaa/downloads/external/content/FAA_Acronyms.pdf).

### 1. PROPOSAL DESCRIPTION

Proposed are 78 wind turbines for a wind farm project previously studied and determined under Aeronautical Study Numbers (ASN) 2020-WTE-6722-OE through 2020-WTE-6778-OE. The proposed wind farm would be located approximately 9.72 NM to 17.18 NM southwest of the Airport Reference Point (ARP) for Highmore Municipal (9D0), Highmore, SD.

For the sake of efficiency, all of the wind turbines in this project that have similar impacts are included in this narrative.

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
2021-WTE-1897-OE	/	625	/	2531	/	44-24-14.09N	/	99-45-37.19W
2021-WTE-1898-OE	/	625	/	2537	/	44-24-29.75N	/	99-45-25.56W
2021-WTE-1899-OE	/	625	/	2549	/	44-24-47.14N	/	99-45-10.48W
2021-WTE-1900-OE	/	625	/	2555	/	44-24-58.11N	/	99-44-52.07W
2021-WTE-1901-OE	/	625	/	2576	/	44-24-56.24N	/	99-44-11.46W
2021-WTE-1902-OE	/	625	/	2574	/	44-25-09.31N	/	99-43-47.36W
2021-WTE-1903-OE	/	625	/	2576	/	44-25-22.58N	/	99-43-16.26W
2021-WTE-1904-OE	/	625	/	2595	/	44-25-22.22N	/	99-42-29.07W
2021-WTE-1905-OE	/	625	/	2609	/	44-25-48.13N	/	99-42-29.21W
2021-WTE-1906-OE	/	625	/	2615	/	44-26-04.17N	/	99-42-03.53W
2021-WTE-1907-OE	/	625	/	2601	/	44-26-14.09N	/	99-41-31.24W
2021-WTE-1908-OE	/	625	/	2590	/	44-26-45.55N	/	99-41-27.62W
2021-WTE-1909-OE	/	625	/	2597	/	44-26-12.67N	/	99-40-49.51W
2021-WTE-1910-OE	/	625	/	2601	/	44-26-36.34N	/	99-40-39.24W
2021-WTE-1911-OE	/	625	/	2623	/	44-26-59.00N	/	99-39-37.37W
2021-WTE-1912-OE	/	625	/	2652	/	44-27-22.62N	/	99-39-24.13W
2021-WTE-1913-OE	/	625	/	2641	/	44-27-34.24N	/	99-39-06.08W
2021-WTE-1914-OE	/	625	/	2641	/	44-27-02.27N	/	99-38-51.47W
2021-WTE-1915-OE	/	625	/	2635	/	44-27-05.00N	/	99-38-23.71W

2021-WTE-1916-OE	/	625	/	2613	/	44-26-13.94N	/	99-39-37.13W
2021-WTE-1917-OE	/	625	/	2602	/	44-26-14.67N	/	99-39-05.84W
2021-WTE-1918-OE	/	625	/	2614	/	44-26-11.16N	/	99-38-19.60W
2021-WTE-1919-OE	/	625	/	2593	/	44-25-47.95N	/	99-40-03.95W
2021-WTE-1920-OE	/	625	/	2607	/	44-25-39.69N	/	99-39-18.72W
2021-WTE-1921-OE	/	625	/	2610	/	44-25-45.84N	/	99-38-10.32W
2021-WTE-1922-OE	/	625	/	2586	/	44-24-59.88N	/	99-40-31.94W
2021-WTE-1923-OE	/	625	/	2606	/	44-25-09.31N	/	99-40-00.74W
2021-WTE-1924-OE	/	625	/	2603	/	44-24-47.29N	/	99-38-49.76W
2021-WTE-1925-OE	/	625	/	2584	/	44-24-05.15N	/	99-38-57.93W
2021-WTE-1926-OE	/	625	/	2582	/	44-23-03.63N	/	99-39-22.82W
2021-WTE-1927-OE	/	625	/	2591	/	44-22-46.04N	/	99-37-38.00W
2021-WTE-1928-OE	/	625	/	2601	/	44-23-03.23N	/	99-36-59.77W
2021-WTE-1929-OE	/	625	/	2559	/	44-21-43.65N	/	99-40-05.43W
2021-WTE-1930-OE	/	625	/	2583	/	44-21-52.04N	/	99-39-22.57W
2021-WTE-1931-OE	/	625	/	2585	/	44-22-11.49N	/	99-38-49.81W
2021-WTE-1932-OE	/	625	/	2603	/	44-22-21.17N	/	99-37-50.90W
2021-WTE-1933-OE	/	625	/	2603	/	44-21-39.61N	/	99-37-51.51W
2021-WTE-1934-OE	/	625	/	2618	/	44-22-10.77N	/	99-36-38.02W
2021-WTE-1935-OE	/	625	/	2638	/	44-22-11.27N	/	99-35-37.93W
2021-WTE-1936-OE	/	625	/	2646	/	44-22-14.52N	/	99-35-11.08W
2021-WTE-1937-OE	/	625	/	2655	/	44-22-19.08N	/	99-34-33.76W
2021-WTE-1938-OE	/	625	/	2660	/	44-22-20.39N	/	99-33-59.26W
2021-WTE-1939-OE	/	625	/	2701	/	44-21-43.59N	/	99-33-58.88W
2021-WTE-1940-OE	/	625	/	2584	/	44-20-25.80N	/	99-41-27.57W
2021-WTE-1941-OE	/	625	/	2634	/	44-19-39.92N	/	99-41-16.64W
2021-WTE-1942-OE	/	625	/	2635	/	44-19-39.65N	/	99-40-47.40W
2021-WTE-1943-OE	/	625	/	2635	/	44-19-48.56N	/	99-40-31.36W
2021-WTE-1944-OE	/	625	/	2633	/	44-19-48.09N	/	99-40-01.59W
2021-WTE-1945-OE	/	625	/	2654	/	44-20-03.83N	/	99-39-17.00W
2021-WTE-1946-OE	/	625	/	2644	/	44-20-25.97N	/	99-38-55.58W
2021-WTE-1947-OE	/	625	/	2643	/	44-20-26.32N	/	99-38-03.12W
2021-WTE-1948-OE	/	625	/	2630	/	44-21-01.05N	/	99-37-09.32W
2021-WTE-1949-OE	/	625	/	2624	/	44-21-23.72N	/	99-36-40.27W
2021-WTE-1950-OE	/	625	/	2704	/	44-19-36.66N	/	99-38-19.96W
2021-WTE-1951-OE	/	625	/	2701	/	44-19-49.25N	/	99-38-07.56W
2021-WTE-1952-OE	/	625	/	2712	/	44-19-35.42N	/	99-37-03.20W
2021-WTE-1953-OE	/	625	/	2716	/	44-19-33.27N	/	99-36-35.07W
2021-WTE-1954-OE	/	625	/	2695	/	44-19-51.49N	/	99-36-29.77W
2021-WTE-1955-OE	/	625	/	2677	/	44-20-09.09N	/	99-36-25.12W
2021-WTE-1956-OE	/	625	/	2666	/	44-20-26.56N	/	99-36-25.21W
2021-WTE-1957-OE	/	625	/	2665	/	44-20-37.87N	/	99-35-56.02W
2021-WTE-1958-OE	/	625	/	2681	/	44-20-50.81N	/	99-35-43.52W
2021-WTE-1959-OE	/	625	/	2668	/	44-21-01.78N	/	99-35-28.91W

2021-WTE-1960-OE / 625 / 2680 / 44-18-54.66N / 99-39-35.60W  
2021-WTE-1961-OE / 625 / 2680 / 44-18-54.41N / 99-38-57.55W  
2021-WTE-1962-OE / 625 / 2714 / 44-19-07.18N / 99-38-25.44W  
2021-WTE-1963-OE / 625 / 2704 / 44-18-41.87N / 99-38-16.92W  
2021-WTE-1964-OE / 625 / 2728 / 44-19-00.91N / 99-37-37.78W  
2021-WTE-1965-OE / 625 / 2675 / 44-18-22.87N / 99-39-37.47W  
2021-WTE-1966-OE / 625 / 2665 / 44-18-17.21N / 99-38-49.83W

2021-WTE-1967-OE / 625 / 2656 / 44-17-48.93N / 99-39-37.15W  
2021-WTE-1968-OE / 625 / 2578 / 44-25-22.14N / 99-41-48.48W  
2021-WTE-1969-OE / 625 / 2602 / 44-25-54.22N / 99-41-28.13W  
2021-WTE-1970-OE / 625 / 2605 / 44-25-19.63N / 99-39-35.11W  
2021-WTE-1971-OE / 625 / 2563 / 44-22-38.45N / 99-39-36.68W  
2021-WTE-1972-OE / 625 / 2596 / 44-20-35.11N / 99-40-18.46W  
2021-WTE-1973-OE / 625 / 2585 / 44-20-57.86N / 99-40-01.75W  
2021-WTE-1974-OE / 625 / 2659 / 44-21-00.55N / 99-36-24.43W

## 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 126 feet.

b. 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 would increase the Minimum Safe Altitude (MSA) for Highmore Municipal (9D0) Highmore, SD. The RNAV (GPS) RWY 13 and RNAV (GPS) RWY 31 would increase from 3600 feet AMSL to \_\_\_\_\_ feet AMSL.

3700 feet AMSL

2021-WTE-1897-OE  
2021-WTE-1906-OE  
2021-WTE-1907-OE  
2021-WTE-1910-OE  
2021-WTE-1911-OE  
2021-WTE-1912-OE  
2021-WTE-1913-OE  
2021-WTE-1914-OE  
2021-WTE-1915-OE  
2021-WTE-1916-OE

2021-WTE-1917-OE  
2021-WTE-1918-OE  
2021-WTE-1920-OE  
2021-WTE-1921-OE  
2021-WTE-1923-OE  
2021-WTE-1924-OE

2021-WTE-1928-OE  
2021-WTE-1932-OE  
2021-WTE-1933-OE  
2021-WTE-1934-OE

2021-WTE-1935-OE  
2021-WTE-1936-OE  
2021-WTE-1937-OE  
2021-WTE-1938-OE  
2021-WTE-1941-OE  
2021-WTE-1942-OE  
2021-WTE-1943-OE  
2021-WTE-1944-OE  
2021-WTE-1945-OE  
2021-WTE-1946-OE

2021-WTE-1947-OE  
2021-WTE-1948-OE  
2021-WTE-1949-OE  
2021-WTE-1954-OE  
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2021-WTE-1958-OE  
2021-WTE-1959-OE  
2021-WTE-1960-OE

2021-WTE-1961-OE  
2021-WTE-1965-OE  
2021-WTE-1966-OE  
2021-WTE-1967-OE  
2021-WTE-1969-OE  
2021-WTE-1970-OE  
2021-WTE-1974-OE

3800 feet AMSL  
2021-WTE-1939-OE  
2021-WTE-1950-OE  
2021-WTE-1951-OE  
2021-WTE-1952-OE  
2021-WTE-1953-OE  
2021-WTE-1962-OE  
2021-WTE-1963-OE  
2021-WTE-1964-OE

The following proposed turbines would increase the MSA for Miller Municipal (MKA) Miller, SD. The RNAV (GPS) RWY 15 and RNAV (GPS) RWY 33 would increase from 3600 feet AMSL to \_\_\_\_\_ feet AMSL.

3700 feet AMSL

2021-WTE-1935-OE  
2021-WTE-1936-OE  
2021-WTE-1937-OE  
2021-WTE-1938-OE

3800 feet AMSL  
2021-WTE-1939-OE

c. 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 Victor Airway 120 (V-120) from PIERRE (PIR) VORTAC, 100 radial to MITCHELL (MHE) VOR/DME from 3400 feet AMSL to \_\_\_\_\_ feet AMSL.

3700 feet AMSL  
2021-WTE-1941-OE  
2021-WTE-1942-OE  
2021-WTE-1943-OE  
2021-WTE-1960-OE  
2021-WTE-1961-OE  
2021-WTE-1965-OE  
2021-WTE-1966-OE  
2021-WTE-1967-OE

3800 feet AMSL  
2021-WTE-1962-OE  
2021-WTE-1963-OE  
2021-WTE-1964-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.

b. Section 77.29(a)(6); potential effect on ATC radar, direction finders, ATC tower line-of-sight visibility, and physical or electromagnetic effects on air navigation, communication facilities, and other surveillance systems. The turbines would be within the radar line of sight (RLOS) of the Gettysburg, SD (QJB) CARSR and may affect the quality and/or availability of the primary radar signals.

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

In order to facilitate the public comment process, all 78 studies were circularized under ASN 2021-WTE-1926-OE on 08/27/2021, to all known aviation interests and to non-aeronautical interests that may be affected by the



proposal. There was one comment submitted by the South Dakota Aeronautics Commission as a result of the circularization concluding on 10/03/2021. The comment(s) is summarized as follows:

Comments: South Dakota (SD) has limited radar coverage in most areas. This proposed windfarm appears to be adjacent to another farm with shorter turbines, the obvious confusion could easily lead to another fatal accident similar to the April 27, 2014 crash where an aircraft collided with one of the turbines in this other field resulting in the death of the 4 people on the plane.

There are rules that apply to obstructions in controlled airspace. These rules were created long before 600+ foot wind turbines were proposed. Current SD rules allow obstructions to be erected without, aeronautics commission approval, if they do not exceed the maximum heights. With no over whelming justification requiring the turbines to be erected in this airspace, I will oppose any proposal that makes it tougher to fly in the airspace the commission has authority over.

FAA Response: In accordance with FAA Order 7400.2, Par. 6-1-1, an aeronautical study must be conducted for all complete notices received by the FAA. As required, an extensive aeronautical study was conducted on this wind farm proposal which included an evaluation of the impact to Radar coverage, navigational facilities, IFR procedures and VFR operations. The study considered available traffic data within the vicinity of the wind farm and determined that there was not a significant volume of traffic. Therefore, the wind turbines are not considered to have a substantial adverse effect on VFR or IFR traffic. Flight operations conducted below the minimum safe altitudes specified in 14 CFR Part 91, such as agricultural, land surveys, law enforcement, etc., are not considered in determining the extent of adverse effect. Additionally, the FAA does not have land-use authority for privately owned/leased property and does not issue building permits. A determination issued by the FAA does not relieve the project sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body. Questions or comments regarding the justification for commercial land development projects, lease/purchase agreements, site selection, etc., should be directed to the private property owners, state, county and/or local city municipalities.

## 5. BASIS FOR DETERMINATION

a. IFR Effects - The aeronautical study identified an IFR effect(s) for 9D0, MKA airports and V-120. 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. 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 along V-120 is effected and is not routinely assigned by ATC. The proposed structures would have no other 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 traffic pattern airspace for any known public use or military airports. The aeronautical study identified no effect on any existing or proposed VFR arrival or departure operations. At 625 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.

c. RADAR Effects - The aeronautical study identified the proposed turbines as being within the RLOS of the Gettysburg, SD (QJB) CARSR as described above. The proposed turbines may affect the quality and/or availability of the QJB primary radar signals. There would be no effect on the secondary (Beacon) radar system. Impacts to radar only require a review by the responsible ATC facility and military services. Further study determined the structures would have no substantial adverse effect on military or air traffic operations at this time.

d. Charting and Cumulative Effects - 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.

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.

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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  
CFR, Code of Federal Regulations  
DME, Distance Measuring Equipment  
FAA, Federal Aviation Administration  
FUS, Fusion  
GPS, Global Positioning System  
IFR, Instrument Flight Rules  
LAT, Latitude  
LONG, Longitude

Min, Minimum  
MSL, Mean Sea Level  
MVA, Minimum Vectoring Altitude  
NA, Not Authorized  
NAS, National Airspace System  
NEH, No Effect Height  
NM, Nautical Mile  
NOTAM, Notice to Airmen  
NPF, Notice of Preliminary Findings  
OE, Obstruction Evaluation  
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace.  
RLOS, Radar Line of Sight  
SE, Site Elevation  
SM, Statute Miles  
TERPS, Terminal Instrument Procedures  
TPA; Traffic Pattern Airspace  
V, Victor Airway  
VFR, Visual Flight Rules  
WTW, Wind Turbine West

**Case Description for ASN 2021-WTE-1926-OE**

Wind Turbines as part of North Bend Wind Project

Sectional Map for ASN 2021-WTE-1926-OE

