



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

Aeronautical Study No.  
2022-WTW-9607-OE

Issued Date: 12/12/2023

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Boulder, CO 80301

**\*\* NOTICE OF PRELIMINARY FINDINGS \*\***

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 3
Location:	Green Forest, AR
Latitude:	36-17-39.06N NAD 83
Longitude:	93-26-03.69W
Heights:	1968 feet site elevation (SE) 698 feet above ground level (AGL) 2666 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

To pursue a favorable determination at the originally submitted height, further study would be necessary. Further study may include distribution to the public for comment, and may extend the study period up to 120 days. The outcome cannot be predicted prior to public circularization.

If you would like the FAA to conduct further study, you must make the request within 60 days from the date of issuance of this letter.

See Attachment for Additional information.

NOTE: PENDING RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE, THE STRUCTURE IS PRESUMED TO BE A HAZARD TO AIR NAVIGATION. THIS LETTER DOES NOT AUTHORIZE CONSTRUCTION OF THE STRUCTURE EVEN AT A REDUCED HEIGHT. ANY RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE MUST BE COMMUNICATED TO THE FAA SO THAT A FAVORABLE DETERMINATION CAN SUBSEQUENTLY BE ISSUED.

IF MORE THAN 60 DAYS FROM THE DATE OF THIS LETTER HAS ELAPSED WITHOUT ATTEMPTED RESOLUTION, IT WILL BE NECESSARY FOR YOU TO REACTIVATE THE STUDY BY FILING A NEW FAA FORM 7460-1, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION.

If we can be of further assistance, please contact our office at (847) 294-7576, or [Wayne.Reynolds@faa.gov](mailto:Wayne.Reynolds@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2022-WTW-9607-OE.

**Signature Control No: 561552843-606966812**

(NPF -WT )

Buck Reynolds  
Specialist

Attachment(s)  
Additional Information  
Map(s)

## Additional information for ASN 2022-WTW-9607-OE

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 46 wind turbines for a project that lies approximately 9.27 NM to 13.95 NM west of the airport reference point (ARP) of the Boone County Airport (HRO), Harrison, AR..

For the sake of efficiency, all of the wind turbines in this project that have similar impacts are included in this narrative. All 46 of the 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
2022-WTW-9606-OE	/	698	/	2635	/	36-17-43.52N	/	93-26-21.13W
2022-WTW-9607-OE	/	698	/	2666	/	36-17-39.06N	/	93-26-03.69W
2022-WTW-9609-OE	/	698	/	2673	/	36-17-07.95N	/	93-25-56.52W
2022-WTW-9611-OE	/	698	/	2636	/	36-16-39.77N	/	93-25-44.09W
2022-WTW-9616-OE	/	698	/	2611	/	36-17-01.02N	/	93-21-32.58W
2022-WTW-9617-OE	/	698	/	2692	/	36-16-24.35N	/	93-25-19.93W
2022-WTW-9618-OE	/	698	/	2682	/	36-16-13.20N	/	93-25-05.33W
2022-WTW-9619-OE	/	698	/	2583	/	36-16-18.58N	/	93-23-05.20W
2022-WTW-9620-OE	/	698	/	2543	/	36-16-39.99N	/	93-22-06.54W
2022-WTW-9621-OE	/	698	/	2609	/	36-16-27.00N	/	93-21-51.56W
2022-WTW-9622-OE	/	698	/	2663	/	36-16-27.79N	/	93-21-33.00W
2022-WTW-9624-OE	/	698	/	2669	/	36-16-10.42N	/	93-21-20.88W
2022-WTW-9627-OE	/	698	/	2681	/	36-15-55.43N	/	93-23-22.18W
2022-WTW-9628-OE	/	698	/	2664	/	36-15-47.03N	/	93-23-05.77W
2022-WTW-9630-OE	/	698	/	2662	/	36-15-36.36N	/	93-22-33.47W
2022-WTW-9632-OE	/	698	/	2658	/	36-15-38.79N	/	93-22-01.75W
2022-WTW-9633-OE	/	698	/	2520	/	36-15-47.32N	/	93-21-44.94W
2022-WTW-9634-OE	/	698	/	2679	/	36-15-50.77N	/	93-21-28.58W
2022-WTW-9636-OE	/	698	/	2714	/	36-15-20.85N	/	93-24-55.13W
2022-WTW-9638-OE	/	698	/	2707	/	36-15-18.34N	/	93-23-42.50W
2022-WTW-9639-OE	/	698	/	2702	/	36-15-21.67N	/	93-23-25.40W
2022-WTW-9640-OE	/	698	/	2555	/	36-15-34.37N	/	93-21-07.50W
2022-WTW-9641-OE	/	698	/	2621	/	36-14-16.85N	/	93-24-27.26W
2022-WTW-9642-OE	/	698	/	2639	/	36-14-16.20N	/	93-24-10.16W
2022-WTW-9643-OE	/	698	/	2628	/	36-14-22.32N	/	93-23-51.87W
2022-WTW-9645-OE	/	698	/	2680	/	36-13-01.39N	/	93-23-31.67W
2022-WTW-9646-OE	/	698	/	2720	/	36-12-46.73N	/	93-23-22.25W
2023-WTW-12672-OE	/	698	/	2627	/	36-17-44.43N	/	93-25-48.35W

2023-WTW-12673-OE	/	698	/	2569	/	36-16-45.49N	/	93-24-46.78W
2023-WTW-12674-OE	/	698	/	2550	/	36-16-46.32N	/	93-24-32.57W
2023-WTW-12675-OE	/	698	/	2531	/	36-16-44.44N	/	93-24-18.39W
2023-WTW-12676-OE	/	698	/	2554	/	36-16-29.17N	/	93-21-12.03W
2023-WTW-12677-OE	/	698	/	2707	/	36-15-45.51N	/	93-24-48.61W
2023-WTW-12678-OE	/	698	/	2640	/	36-16-03.54N	/	93-23-35.03W
2023-WTW-12679-OE	/	698	/	2623	/	36-15-39.70N	/	93-22-46.12W
2023-WTW-12680-OE	/	698	/	2729	/	36-15-33.21N	/	93-22-15.31W
2023-WTW-12681-OE	/	698	/	2690	/	36-15-51.33N	/	93-21-14.96W
2023-WTW-12682-OE	/	698	/	2639	/	36-15-21.51N	/	93-24-31.58W
2023-WTW-12683-OE	/	698	/	2598	/	36-13-28.23N	/	93-23-55.99W
2023-WTW-12686-OE	/	698	/	2675	/	36-14-38.59N	/	93-23-21.43W
2023-WTW-12687-OE	/	698	/	2720	/	36-12-35.91N	/	93-22-40.46W
2023-WTW-12688-OE	/	698	/	2752	/	36-12-56.15N	/	93-21-40.82W
2023-WTW-12689-OE	/	698	/	2732	/	36-13-06.59N	/	93-21-18.97W
2023-WTW-12690-OE	/	698	/	2720	/	36-12-58.73N	/	93-20-57.33W
2023-WTW-12691-OE	/	698	/	2582	/	36-13-31.50N	/	93-20-41.68W
2023-WTW-12692-OE	/	698	/	2567	/	36-14-05.50N	/	93-20-34.72W

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. All proposed wind turbines would exceed this standard by 199 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 CASSVILLE MUNI (94K) CASSVILLE, MO. RNAV (GPS) RWY 27 Orig-B increase Terminal Arrival Areas (TAA) Straight-In Area 178 degree radial clockwise to the 358 degree radial Minimum Descent Altitude (MDA) from 3600 feet AMS to as much as 3800 feet AMSL. NEH 2600 feet AMSL.

Increase to 3700 feet AMSL

- 2023-WTW-12672-OE
- 2023-WTW-12678-OE
- 2023-WTW-12679-OE
- 2023-WTW-12681-OE
- 2023-WTW-12682-OE
- 2023-WTW-12686-OE

Increase to 3800 feet AMSL

- 2023-WTW-12677-OE
- 2023-WTW-12680-OE
- 2023-WTW-12689-OE

The following proposed turbines would increase the Minimum Safe Altitude (MSA) for the Carroll County (4M1) Berryville, AR. RNAV (GPS) RWY 7 AMDT 1A RNAV (GPS) RWY 25 AMDT 1A increase MSA from 3700 feet AMSL to 3800 feet AMSL. NEH 2700 feet AMSL.

2022-WTW-9636-OE  
2022-WTW-9638-OE  
2022-WTW-9639-OE  
2022-WTW-9646-OE  
2023-WTW-12677-OE  
2023-WTW-12680-OE  
2023-WTW-12687-OE  
2023-WTW-12688-OE  
2023-WTW-12689-OE  
2023-WTW-12690-OE

The following proposed turbines would increase the Minimum Safe Altitude (MSA) for the Boone County (HRO) Harrison, AR. ILS or LOC RWY 36 AMDT 1 increase MSA from 3700 feet AMSL to 3800 feet AMSL. NEH 2700 feet AMSL.

2022-WTW-9636-OE  
2022-WTW-9638-OE  
2022-WTW-9639-OE  
2022-WTW-9646-OE  
2023-WTW-12677-OE  
2023-WTW-12680-OE  
2023-WTW-12687-OE  
2023-WTW-12688-OE  
2023-WTW-12689-OE  
2023-WTW-12690-OE

The following proposed turbines would increase the missed approach for the Boone County (HRO) Harrison AR. ILS or LOC RWY 36 AMDT 1; climb to 1900 feet AMSL then climbing left turn to 3800 feet AMSL; an increase from 3700 feet AMSL direct HRO VOR/DME and hold. Continue climb-in-hold to 3800 feet AMSL; an increase from 3700 feet AMSL. NEH 2700 feet AMSL.

2022-WTW-9638-OE  
2022-WTW-9639-OE

The following proposed turbines would increase the Minimum Safe Altitude (MSA) for the Branson (BBG) Branson, MO. ILS or LOC RWY 32 ORIG RNAV (GPS) RWY 14 ORIG B RNAV (GPS) RWY 32 ORIG B increase MSA from 3700 feet AMSL to 3800 feet AMSL. NEH 2700 feet AMSL.

2022-WTW-9636-OE  
2022-WTW-9638-OE  
2022-WTW-9639-OE  
2022-WTW-9646-OE  
2023-WTW-12677-OE  
2023-WTW-12680-OE  
2023-WTW-12687-OE

2023-WTW-12688-OE  
2023-WTW-12689-OE  
2023-WTW-12690-OE

The following proposed turbines would increase the Minimum Safe Altitude (MSA) for the Branson West Muni-Emerson Field (FWB) Branson West, MO. RNAV (GPS) RWY 3 AMDT 1A and RNAV (GPS) RWY 21 AMDT 1A increase MSA from 3500 feet AMSL to as much as 3800 feet AMSL. NEH 2500 feet AMSL.

Increase to 3600 feet AMSL

2022-WTW-9619-OE  
2022-WTW-9620-OE  
2022-WTW-9633-OE  
2022-WTW-9640-OE  
2023-WTW-12673-OE  
2023-WTW-12674-OE  
2023-WTW-12675-OE  
2023-WTW-12676-OE  
2023-WTW-12683-OE  
2023-WTW-12691-OE

2023-WTW-12692-OE

Increase to 3700 feet AMSL

2022-WTW-9606-OE  
2022-WTW-9607-OE  
2022-WTW-9609-OE  
2022-WTW-9611-OE  
2022-WTW-9616-OE  
2022-WTW-9617-OE  
2022-WTW-9618-OE  
2022-WTW-9621-OE  
2022-WTW-9622-OE  
2022-WTW-9624-OE

2022-WTW-9627-OE  
2022-WTW-9628-OE  
2022-WTW-9630-OE  
2022-WTW-9632-OE  
2022-WTW-9634-OE  
2022-WTW-9641-OE  
2022-WTW-9642-OE  
2022-WTW-9643-OE  
2022-WTW-9645-OE  
2023-WTW-12672-OE

2023-WTW-12678-OE  
2023-WTW-12679-OE  
2023-WTW-12681-OE  
2023-WTW-12682-OE

2023-WTW-12686-OE

Increase to 3800 feet AMSL

2022-WTW-9636-OE

2022-WTW-9638-OE

2022-WTW-9639-OE

2022-WTW-9646-OE

2023-WTW-12677-OE

2023-WTW-12680-OE

2023-WTW-12687-OE

2023-WTW-12688-OE

2023-WTW-12689-OE

2023-WTW-12690-OE

The following structures increase the Minimum Vectoring Altitude (MVA) at Fort Smith ATCT/TRACON (FSM) Fort Smith, AR.. FSM\_FUS3\_2022 MVA increase FSM Sector I from 3500 feet AMSL to as much as 3800 feet AMSL. NEH 2549 feet AMSL.

Increase to 3600 feet AMSL

2022-WTW-9606-OE

2022-WTW-9611-OE

2022-WTW-9616-OE

2022-WTW-9619-OE

2022-WTW-9640-OE

2022-WTW-9641-OE

2022-WTW-9642-OE

2022-WTW-9643-OE

2023-WTW-12672-OE

2023-WTW-12673-OE

2023-WTW-12674-OE

2023-WTW-12676-OE

2023-WTW-12678-OE

2023-WTW-12679-OE

2023-WTW-12682-OE

2023-WTW-12683-OE

2023-WTW-12691-OE

2023-WTW-12692-OE

Increase to 3700 feet AMSL

2022-WTW-9607-OE

2022-WTW-9609-OE

2022-WTW-9617-OE

2022-WTW-9618-OE

2022-WTW-9622-OE

2022-WTW-9624-OE

2022-WTW-9627-OE

2022-WTW-9628-OE

2022-WTW-9630-OE

2022-WTW-9632-OE

2022-WTW-9634-OE

2022-WTW-9636-OE

2022-WTW-9638-OE

2022-WTW-9639-OE

2022-WTW-9645-OE

2022-WTW-9646-OE

2023-WTW-12677-OE

2023-WTW-12680-OE

2023-WTW-12681-OE

2023-WTW-12686-OE

2023-WTW-12687-OE

2023-WTW-12689-OE

2023-WTW-12690-OE

Increase to 3800 feet AMSL

2023-WTW-12688-OE

The following structures increase the Minimum Vectoring Altitude (MVA) at Springfield ATCT/TRACON (SGF) Springfield, MO. SGF\_MVA\_FUS3\_2023 increase SGF Sector G from 3500 feet AMSL to as much as 3800 feet AMSL. NEH 2549 feet AMSL.

Increase to 3600 feet AMSL

2022-WTW-9606-OE

2022-WTW-9611-OE

2022-WTW-9616-OE

2022-WTW-9619-OE

2022-WTW-9640-OE

2022-WTW-9641-OE

2022-WTW-9642-OE

2022-WTW-9643-OE

2023-WTW-12672-OE

2023-WTW-12673-OE

2023-WTW-12674-OE

2023-WTW-12676-OE

2023-WTW-12678-OE

2023-WTW-12679-OE

2023-WTW-12682-OE

2023-WTW-12683-OE

2023-WTW-12691-OE

2023-WTW-12692-OE

Increase to 3700 feet AMSL

2022-WTW-9607-OE

2022-WTW-9609-OE

2022-WTW-9617-OE



2022-WTW-9618-OE  
2022-WTW-9622-OE  
2022-WTW-9624-OE  
2022-WTW-9627-OE  
2022-WTW-9628-OE  
2022-WTW-9630-OE  
2022-WTW-9632-OE

2022-WTW-9634-OE  
2022-WTW-9636-OE  
2022-WTW-9638-OE  
2022-WTW-9639-OE  
2023-WTW-12677-OE  
2023-WTW-12680-OE  
2023-WTW-12681-OE  
2023-WTW-12686-OE  
2023-WTW-12687-OE  
2023-WTW-12689-OE

2023-WTW-12690-OE

Increase to 3800 feet AMSL

2023-WTW-12688-OE

The following structures increase the Minimum Vectoring Altitude (MVA) at Springfield ATCT/TRACON (SGF) Springfield, MO. SGF\_MVA\_FUS5\_2023 MVA increase SGF Sector G from 3500 feet AMSL to 3800 feet AMSL. NEH 2549 feet AMSL.

Increase to 3600 feet AMSL

2022-WTW-9606-OE  
2022-WTW-9611-OE  
2022-WTW-9616-OE  
2022-WTW-9619-OE  
2022-WTW-9640-OE  
2022-WTW-9641-OE  
2022-WTW-9642-OE  
2022-WTW-9643-OE  
2023-WTW-12672-OE  
2023-WTW-12673-OE

2023-WTW-12674-OE  
2023-WTW-12676-OE  
2023-WTW-12678-OE  
2023-WTW-12679-OE  
2023-WTW-12682-OE  
2023-WTW-12683-OE  
2023-WTW-12691-OE  
2023-WTW-12692-OE

Increase to 3700 feet AMSL

- 2022-WTW-9607-OE
- 2022-WTW-9609-OE
- 2022-WTW-9617-OE
- 2022-WTW-9618-OE
- 2022-WTW-9622-OE
- 2022-WTW-9624-OE
- 2022-WTW-9627-OE
- 2022-WTW-9628-OE
- 2022-WTW-9630-OE
- 2022-WTW-9632-OE

- 2022-WTW-9634-OE
- 2022-WTW-9636-OE
- 2022-WTW-9638-OE
- 2022-WTW-9639-OE
- 2023-WTW-12677-OE
- 2023-WTW-12680-OE
- 2023-WTW-12681-OE
- 2023-WTW-12686-OE
- 2023-WTW-12687-OE
- 2023-WTW-12689-OE

2023-WTW-12690-OE

Increase to 3800 feet AMSL

2023-WTW-12688-OE

The following structures increase the Minimum Vectoring Altitude (MVA) at Springfield ATCT/TRACON (SGF) Springfield, MO. SGF\_MVA\_FUS5\_2021 MVA increase SGF Sector I from 3200 feet AMSL to as much as ~~3700~~ feet AMSL. NEH 2249 feet AMSL.

Increase to 3500 feet AMSL

- 2022-WTW-9620-OE
- 2022-WTW-9633-OE

Increase to 3600 feet AMSL

- 2022-WTW-9606-OE
- 2022-WTW-9616-OE
- 2022-WTW-9619-OE
- 2022-WTW-9621-OE
- 2022-WTW-9640-OE

Increase to 3700 feet AMSL

- 2022-WTW-9622-OE
- 2022-WTW-9624-OE
- 2022-WTW-9630-OE
- 2022-WTW-9632-OE
- 2022-WTW-9634-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 V140 HARRISON (HRO) VORTAC 261 degree Radial to FIX GREEM from 3500 feet AMSL to 3700 feet AMSL, and FIX GREEM 261 degree Radial to FIX SPRAY from 3500 feet AMSL to as much as 3800 feet AMSL. NEH 2500 feet AMSL.

Increase to 3600 feet AMSL

2022-WTW-9619-OE

2022-WTW-9620-OE

2022-WTW-9633-OE

2022-WTW-9640-OE

2023-WTW-12673-OE

2023-WTW-12674-OE

2023-WTW-12675-OE

2023-WTW-12676-OE

Increase to 3700 feet AMSL

2022-WTW-9606-OE

2022-WTW-9607-OE

2022-WTW-9609-OE

2022-WTW-9611-OE

2022-WTW-9616-OE

2022-WTW-9617-OE

2022-WTW-9618-OE

2022-WTW-9621-OE

2022-WTW-9622-OE

2022-WTW-9624-OE

2022-WTW-9627-OE

2022-WTW-9628-OE

2022-WTW-9630-OE

2022-WTW-9632-OE

2022-WTW-9634-OE

2022-WTW-9641-OE

2022-WTW-9642-OE

2022-WTW-9643-OE

2023-WTW-12672-OE

2023-WTW-12678-OE

2023-WTW-12679-OE

2023-WTW-12681-OE

2023-WTW-12682-OE

2023-WTW-12686-OE

Increase to 3800 feet AMSL

2022-WTW-9636-OE  
2022-WTW-9638-OE  
2022-WTW-9639-OE  
2023-WTW-12677-OE  
2023-WTW-12680-OE

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

a. Section 77.29 (a)(1): the 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 is required to determine whether the structures would affect a significant volume of VFR en route traffic. NEH = 499 feet AGL.

b. Section 77.29(a)(6): 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 FAA found that all 46 proposed wind turbines would be within Radar Line of Sight (RLOS) of the Fayetteville, AR (FYV) ASR-9 radar facility. Since they are visible to the ASR-9, they could cause unwanted primary-only returns (clutter) and primary-only target drops, all in the immediate area of the turbines. Additionally, tracked primary-only targets could diverge from the aircraft path and follow the wind turbines, when aircraft are over or near the wind farm.

The following turbines would have a physical and/or electromagnetic radiation effect upon the HRO (Boone County) VOR/DME due to the prediction of excessive course error. A degradation of service can be expected. Preliminary review math modeling analysis conducted determined predicted impacts would not be acceptable to long term planned NAS use. The FAA National Airspace System (NAS) transition the Performance Based Navigation (PBN) using Global Positioning System (GPS). The VOR infrastructure in CONUS is being repurposed to provide a conventional backup navigation service during potential GPS outages. This backup infrastructure is known as the VOR Minimum Operating Network or MON. The agency is retaining long term need of the HRO VOR facility as part of the MON critical infrastructure. Provision: A NEH of 591' AGL for each structure would minimize proposal impact(s) to an acceptable level commensurate with the previous approved termination(s). There is a risk to the VOR service in all areas around the VOR affecting all Victor Airways for this facility. If the turbines are not lowered to the NEH, then a reimbursable agreement is required to be entered upon by the proponent with the FAA in order to mitigate the anticipated NAS facility/service impacts. Please contact the NAS Planning and Integration, Airport Planner in the CSA Planning & Requirements (P&R) group. Airport Planner. Miguel Negrete; Lead Planner (NM, OK, AR, West TX); (817) 222-4619 Miguel.Negrete@faa.gov.

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2022-WTW-9624-OE  
2022-WTW-9633-OE  
2022-WTW-9634-OE

2022-WTW-9640-OE  
2022-WTW-12676-OE  
2022-WTW-12681-OE

#### 4. SUBSTANTIAL ADVERSE EFFECT

The following turbines would have a physical and/or electromagnetic radiation effect upon the HRO (Boone County) VOR/DME due to the prediction of excessive course error. A degradation of service can be expected. Preliminary review math modeling analysis conducted determined predicted impacts would not be acceptable to long term planned NAS use. The FAA National Airspace System (NAS) transition the Performance Based Navigation (PBN) using Global Positioning System (GPS). The VOR infrastructure in CONUS is being repurposed to provide a conventional backup navigation service during potential GPS outages. This backup infrastructure is known as the VOR Minimum Operating Network or MON. The agency is retaining long term need of the HRO VOR facility as part of the MON critical infrastructure. Provision: A NEH of 591' AGL for each structure would minimize proposal impact(s) to an acceptable level commensurate with the previous approved termination(s). There is a risk to the VOR service in all areas around the VOR affecting all Victor Airways for this facility. If the turbines are not lowered to the NEH, then a reimbursable agreement is required to be entered upon by the proponent with the FAA in order to mitigate the anticipated NAS facility/service impacts. Please contact the NAS Planning and Integration, Airport Planner in the CSA Planning & Requirements (P&R) group. Airport Planner. Miguel Negrete; Lead Planner (NM, OK, AR, West TX); (817) 222-4619 Miguel.Negrete@faa.gov.

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2022-WTW-12681-OE

#### 5. SPONSOR ACTIONS

To pursue the possibility of receiving a favorable determination at the originally requested height, further study would be necessary. Further study may include coordination with the affected air traffic control facilities and/or a 37 day public comment period. The outcome cannot be predicted prior to the completion of further study. If you have questions regarding this Notice of Preliminary Findings, you may contact Buck Reynolds via email at (Wayne.Reynolds@faa.gov).

A REQUEST FOR FURTHER STUDY MUST BE MADE WITHIN 60 DAYS FROM THE DATE OF ISSUANCE OF THIS LETTER.

#### 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 Arriyal 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 2022-WTW-9607-OE

