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

PART 2 OF 3

Aeronautical Study No.
2018-WTE-5636-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 38
Location:	Bloomfield, OH
Latitude:	41-05-26.97N NAD 83
Longitude:	82-55-38.50W
Heights:	970 feet site elevation (SE) 656 feet above ground level (AGL) 1626 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5636-OE.

Signature Control No: 368323633-410543275

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5636-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

- a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

- b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

- c. The impact on all planned public-use airports and aeronautical facilities: None.

- d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
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2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

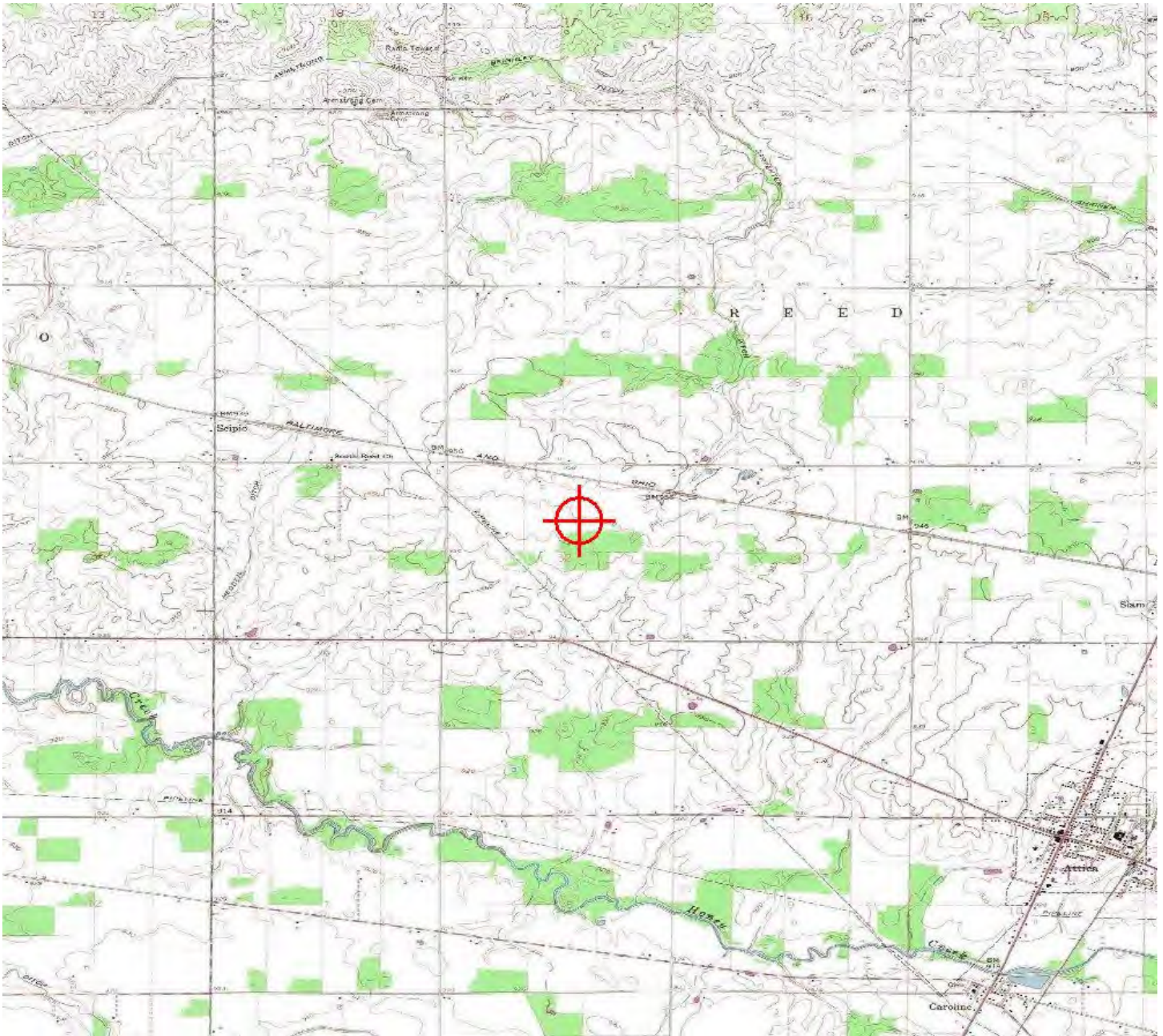
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5637-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 39
Location:	Bloomfield, OH
Latitude:	41-06-49.69N NAD 83
Longitude:	82-56-54.68W
Heights:	930 feet site elevation (SE) 656 feet above ground level (AGL) 1586 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5637-OE.

Signature Control No: 368323634-410543261

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5637-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

- a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

- b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.
- c. The impact on all planned public-use airports and aeronautical facilities: None.
- d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

2018-WTE-5677-OE

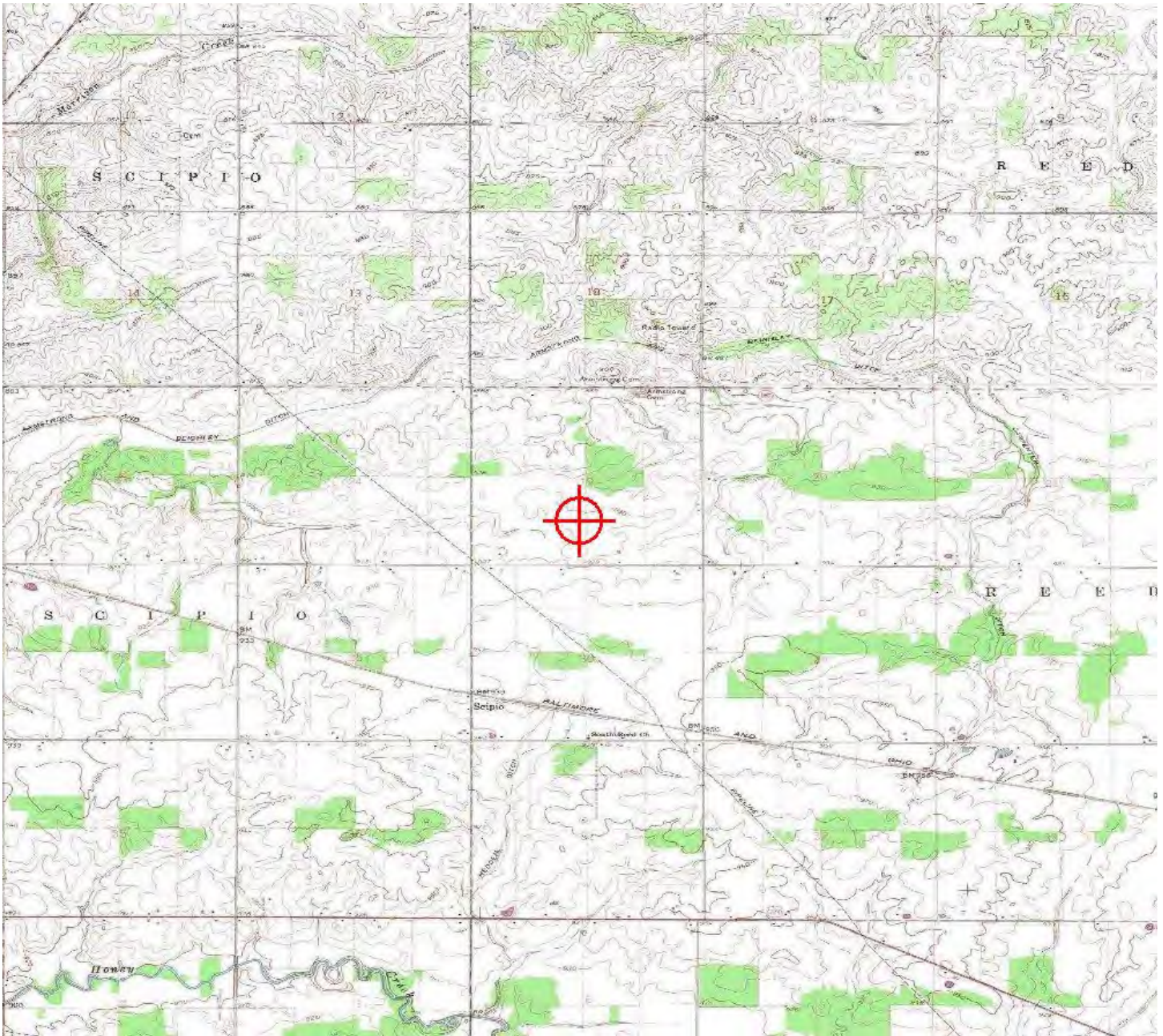
2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation

TOPO Map for ASN 2018-WTE-5637-OE







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

Aeronautical Study No.
2018-WTE-5638-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 40
Location:	Bloomfield, OH
Latitude:	41-00-37.58N NAD 83
Longitude:	83-04-46.55W
Heights:	897 feet site elevation (SE) 656 feet above ground level (AGL) 1553 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5638-OE.

Signature Control No: 368323635-410543441

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5638-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

2018-WTE-5677-OE

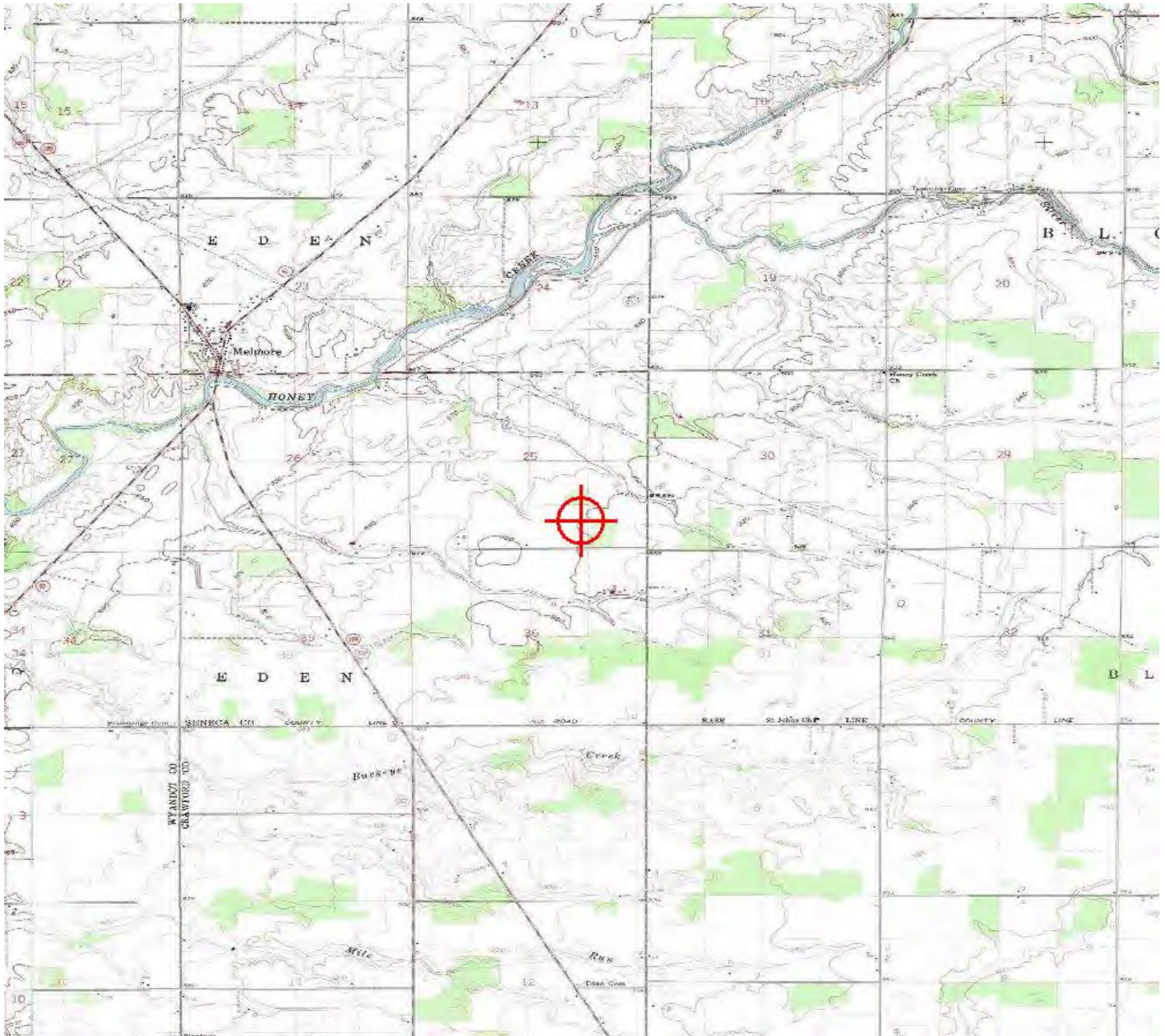
2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation

TOPO Map for ASN 2018-WTE-5638-OE







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

Aeronautical Study No.
2018-WTE-5639-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 41
Location:	Bloomfield, OH
Latitude:	41-01-30.88N NAD 83
Longitude:	83-04-16.35W
Heights:	893 feet site elevation (SE) 656 feet above ground level (AGL) 1549 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5639-OE.

Signature Control No: 368323636-410543442

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5639-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

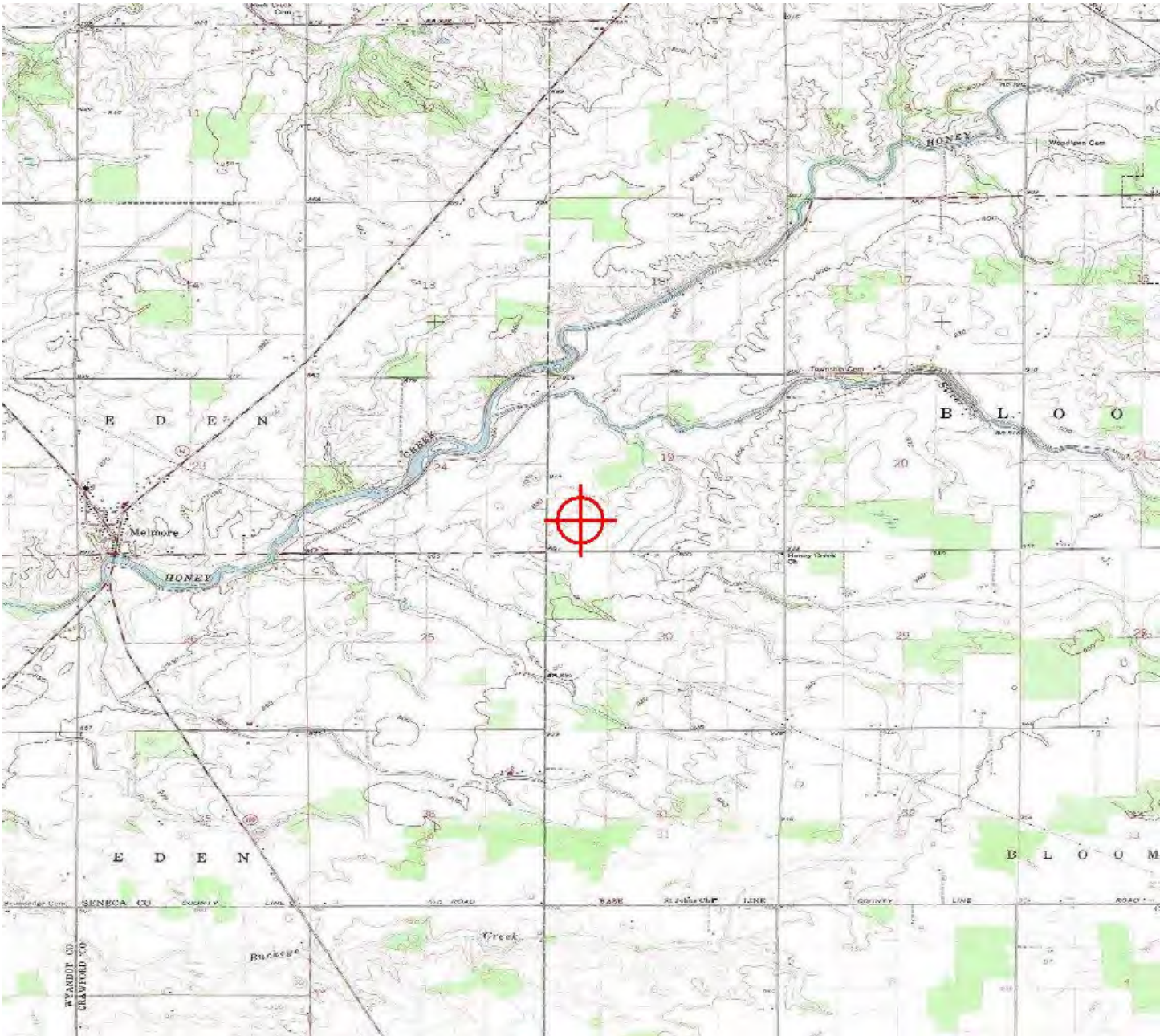
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5640-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 42
Location:	Bloomfield, OH
Latitude:	41-02-04.08N NAD 83
Longitude:	83-08-46.00W
Heights:	819 feet site elevation (SE) 656 feet above ground level (AGL) 1475 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5640-OE.

Signature Control No: 368323637-410543444

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5640-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
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 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
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2018-WTE-5638-OE
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2018-WTE-5652-OE
2018-WTE-5653-OE
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2018-WTE-5655-OE
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2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
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2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

2018-WTE-5677-OE

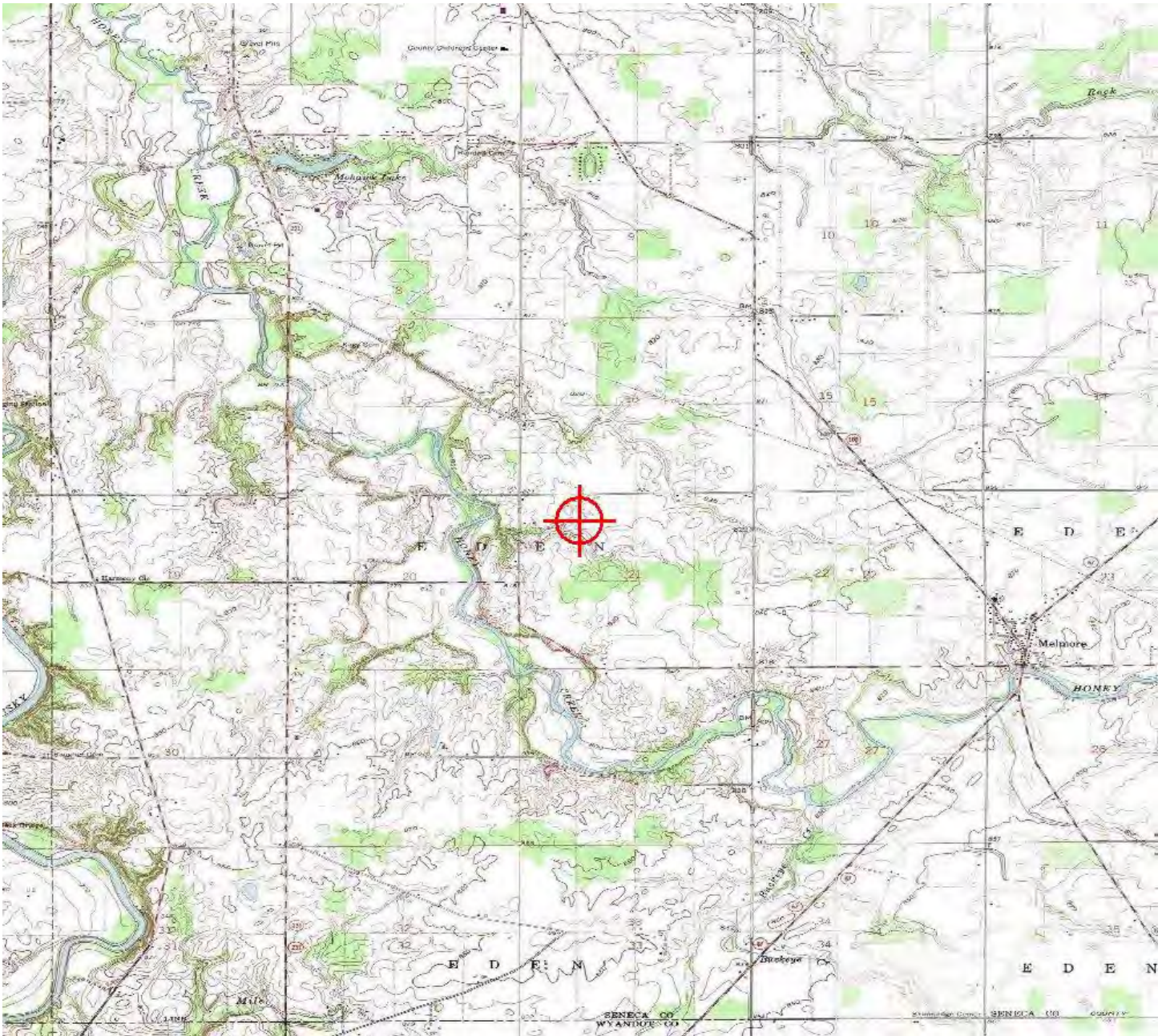
2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation

TOPO Map for ASN 2018-WTE-5640-OE







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

Aeronautical Study No.
2018-WTE-5641-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 43
Location:	Bloomfield, OH
Latitude:	41-05-56.44N NAD 83
Longitude:	82-55-45.00W
Heights:	940 feet site elevation (SE) 656 feet above ground level (AGL) 1596 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5641-OE.

Signature Control No: 368323638-410543456

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5641-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
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2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
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2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

2018-WTE-5677-OE

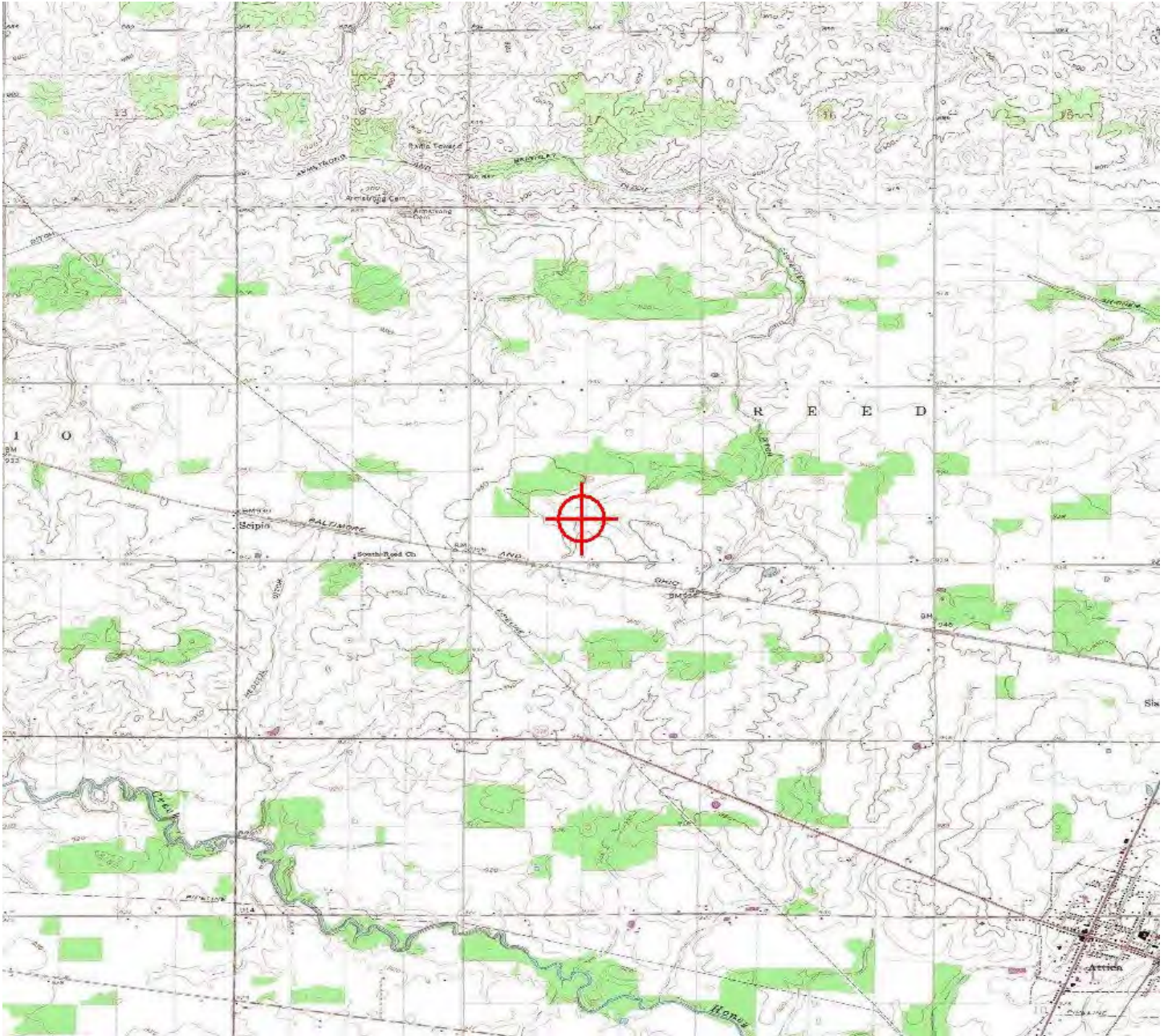
2018-WTE-5678-OE

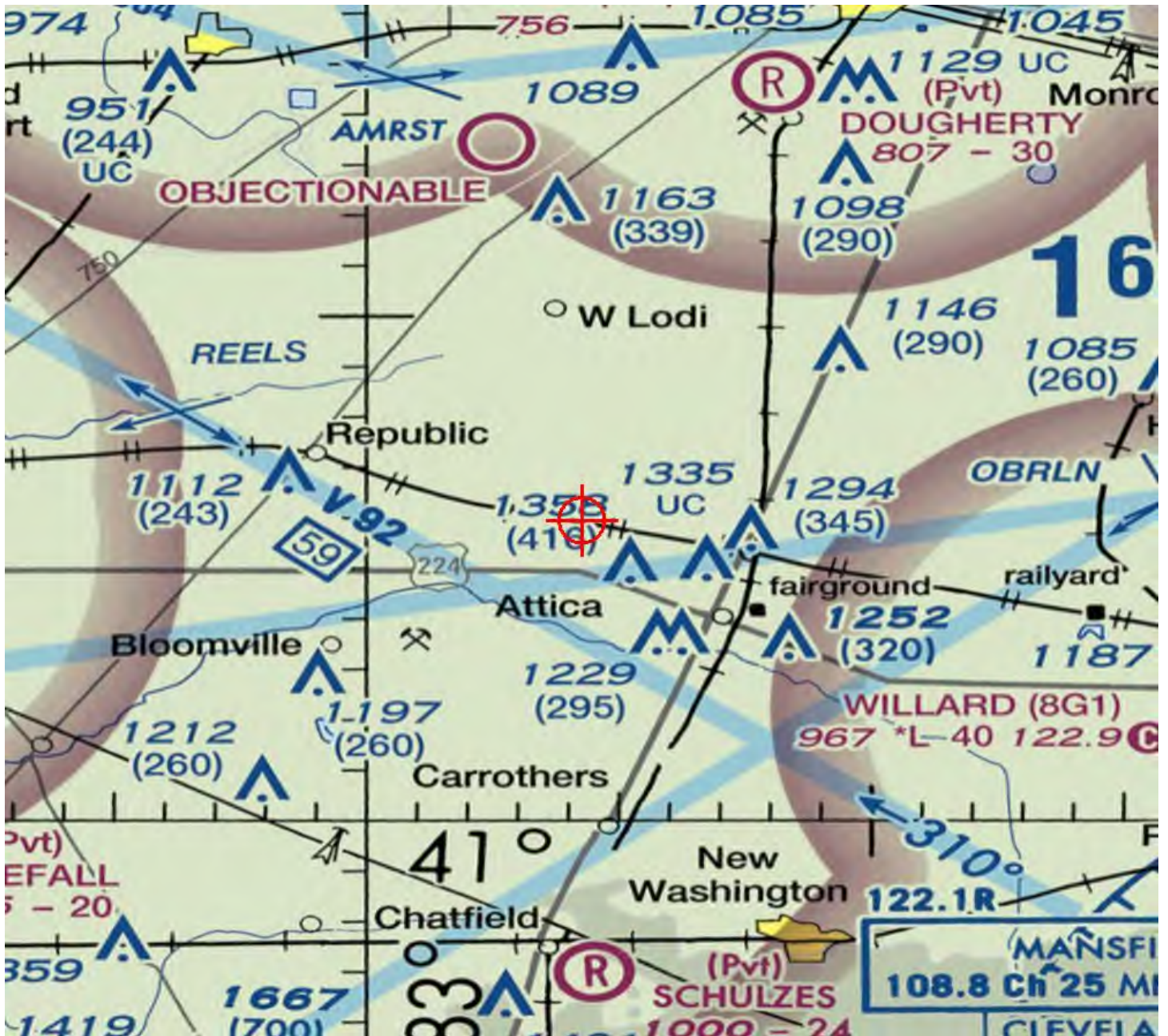
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation

TOPO Map for ASN 2018-WTE-5641-OE







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

Aeronautical Study No.
2018-WTE-5642-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 44
Location:	Bloomfield, OH
Latitude:	41-00-55.49N NAD 83
Longitude:	83-03-51.57W
Heights:	914 feet site elevation (SE) 656 feet above ground level (AGL) 1570 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5642-OE.

Signature Control No: 368323639-410545275

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5642-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

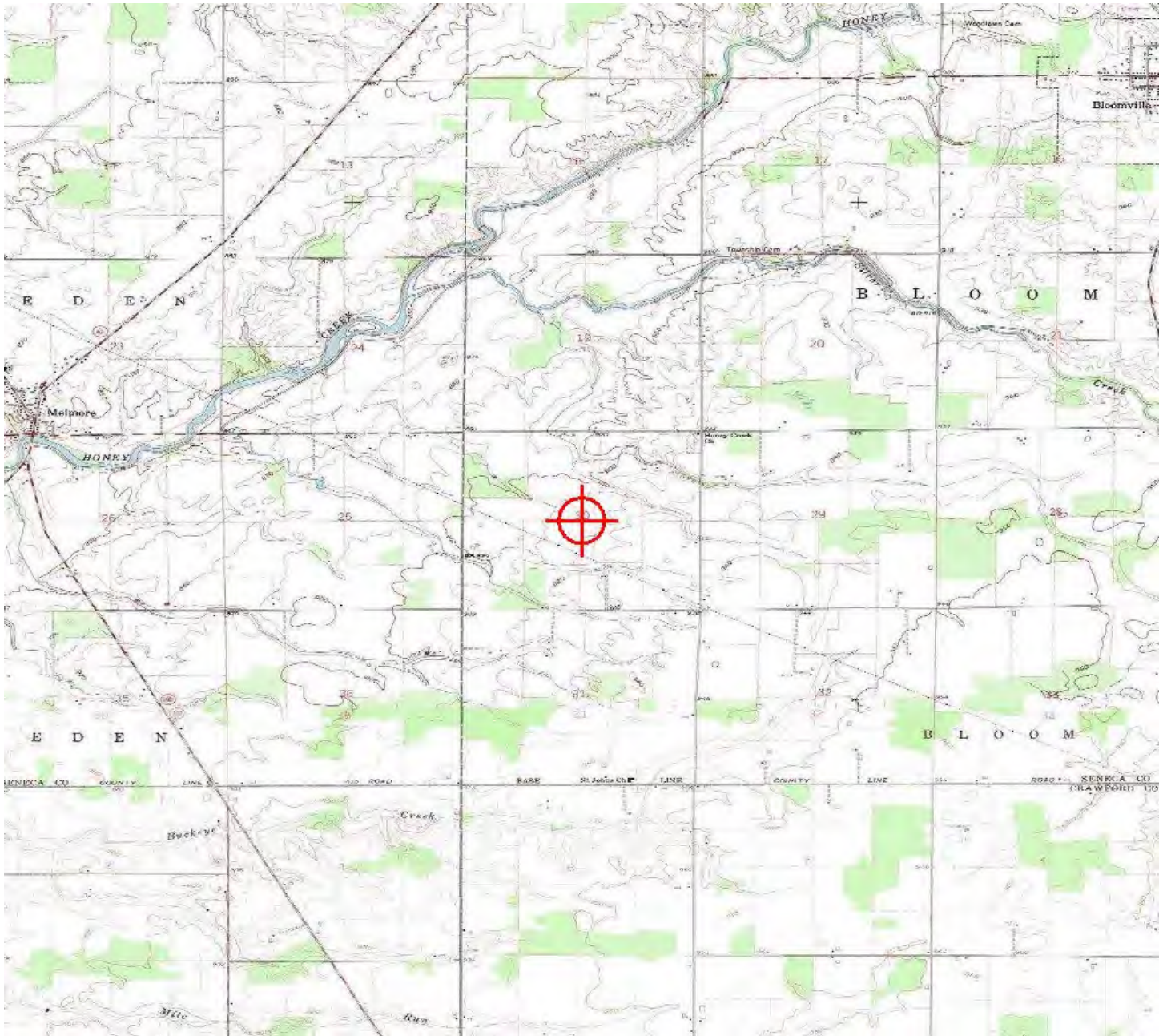
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5643-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 45
Location:	Bloomfield, OH
Latitude:	41-03-47.67N NAD 83
Longitude:	83-03-04.25W
Heights:	906 feet site elevation (SE) 656 feet above ground level (AGL) 1562 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5643-OE.

Signature Control No: 368323640-410543457

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5643-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

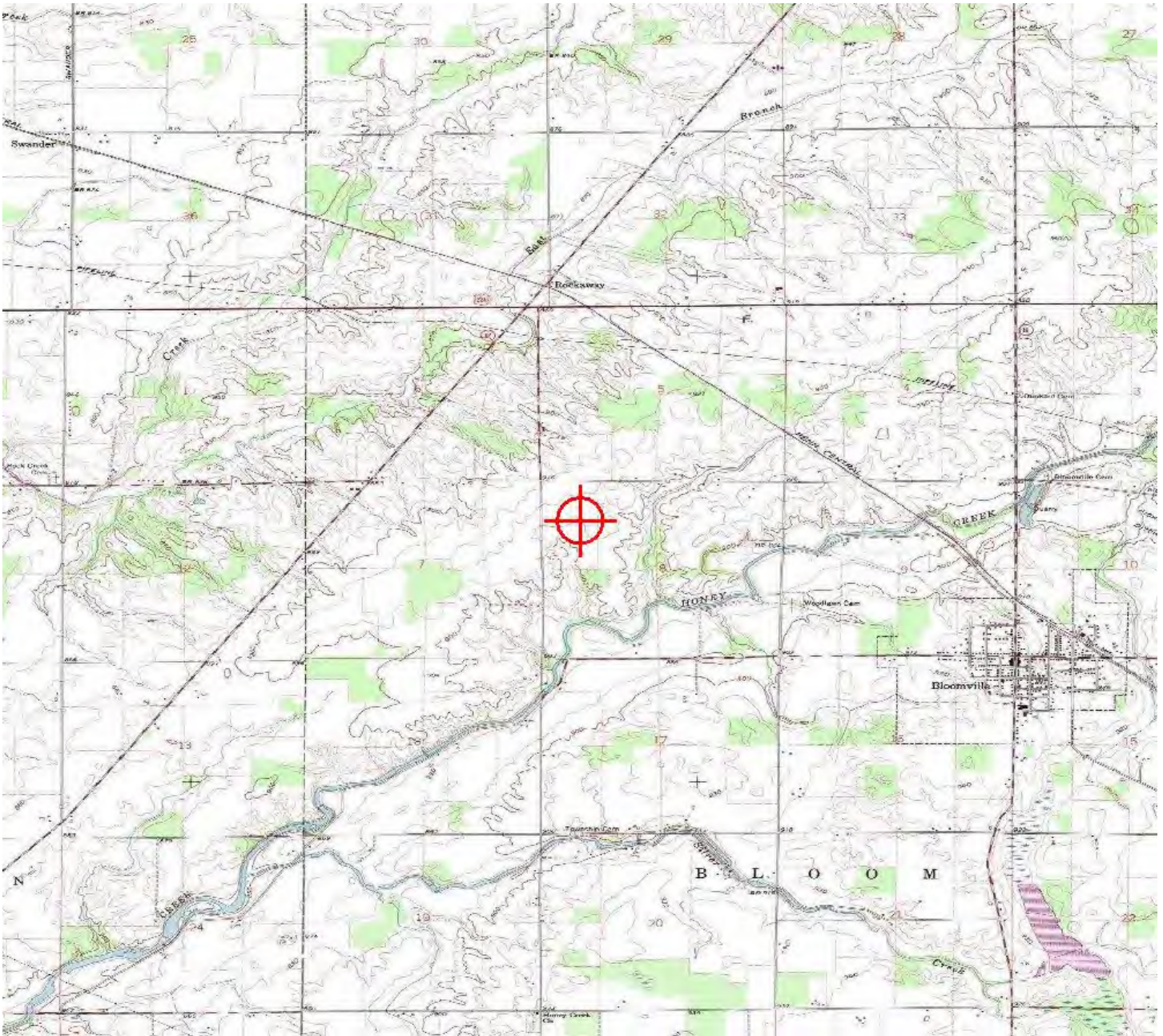
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5644-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 46
Location:	Bloomfield, OH
Latitude:	41-00-41.52N NAD 83
Longitude:	83-05-27.33W
Heights:	882 feet site elevation (SE) 656 feet above ground level (AGL) 1538 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5644-OE.

Signature Control No: 368323641-410543461

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5644-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
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2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
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2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
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2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
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2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation

A topographic map of the Melphre area in Eden, NY. The map shows Honey Creek flowing through the center, with Melphre located on its banks. A red target symbol is placed in the center of the map. The map includes contour lines, a grid, and labels for various features like Buckeye Creek and Buckeye Hill. The text 'EDEN' is visible in the lower center, and 'SUNNY CO' is visible in the lower right. The map also shows the 'WARDEN CO' and 'CLAYTON CO' boundaries.





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

Aeronautical Study No.
2018-WTE-5645-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 47
Location:	Bloomfield, OH
Latitude:	41-00-09.20N NAD 83
Longitude:	83-04-41.34W
Heights:	904 feet site elevation (SE) 656 feet above ground level (AGL) 1560 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5645-OE.

Signature Control No: 368323642-410543463

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5645-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

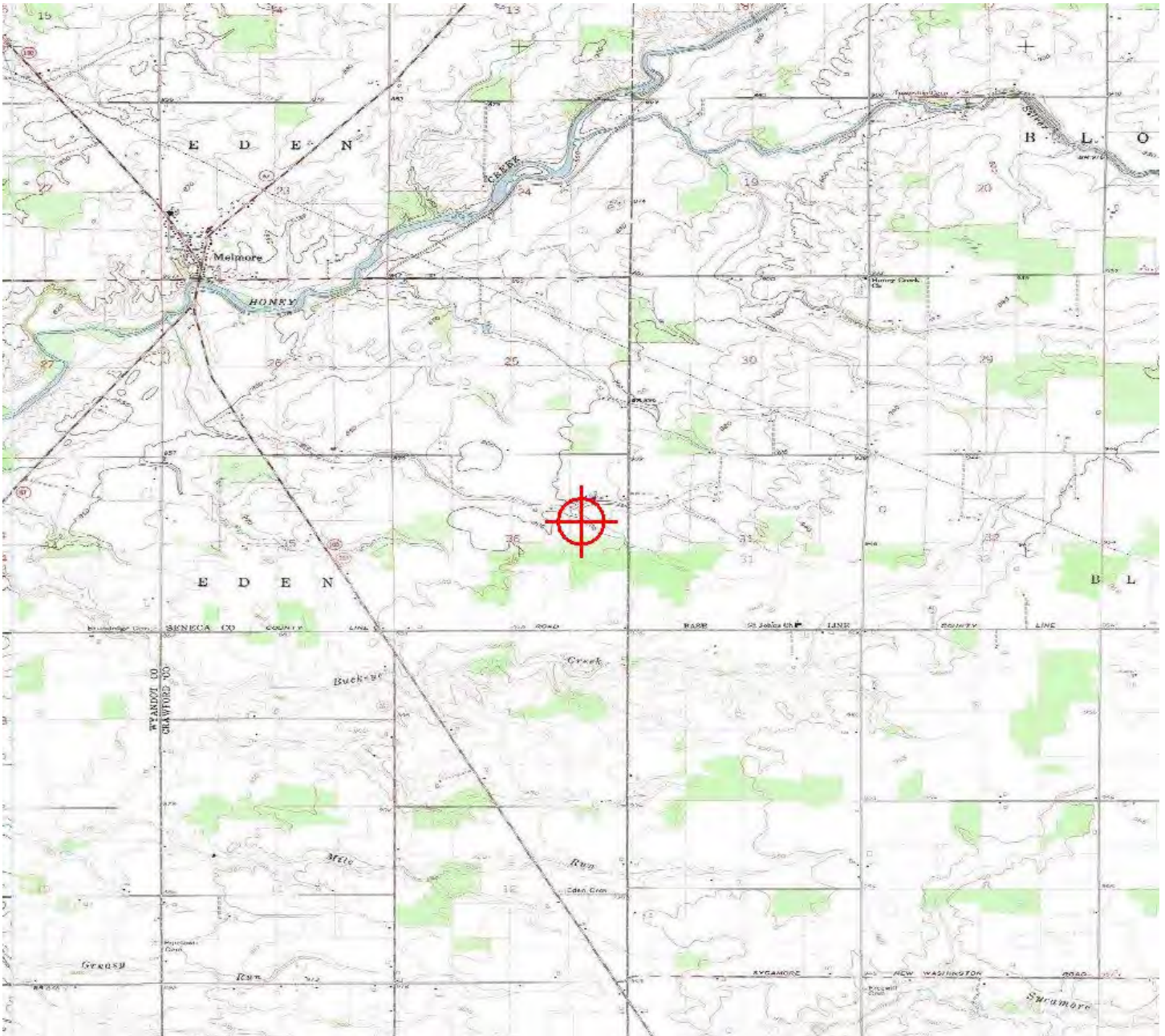
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation





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

Aeronautical Study No.
2018-WTE-5646-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 48
Location:	Bloomfield, OH
Latitude:	41-01-04.87N NAD 83
Longitude:	83-04-58.05W
Heights:	878 feet site elevation (SE) 656 feet above ground level (AGL) 1534 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5646-OE.

Signature Control No: 368323643-410543464

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5646-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

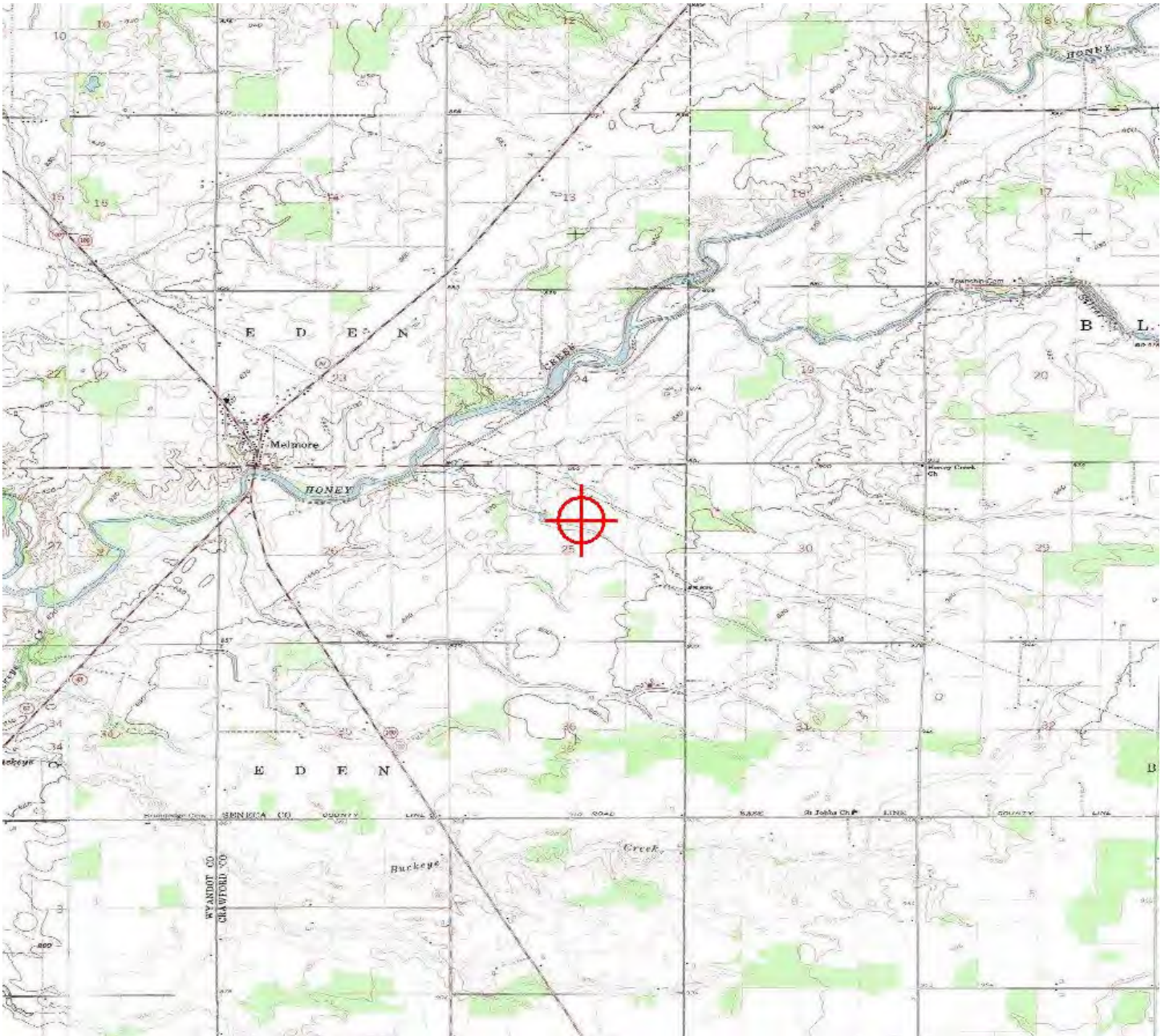
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation





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

Aeronautical Study No.
2018-WTE-5647-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 49
Location:	Bloomfield, OH
Latitude:	41-02-46.62N NAD 83
Longitude:	83-06-01.81W
Heights:	858 feet site elevation (SE) 656 feet above ground level (AGL) 1514 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5647-OE.

Signature Control No: 368323644-410543467

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5647-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
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2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
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2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

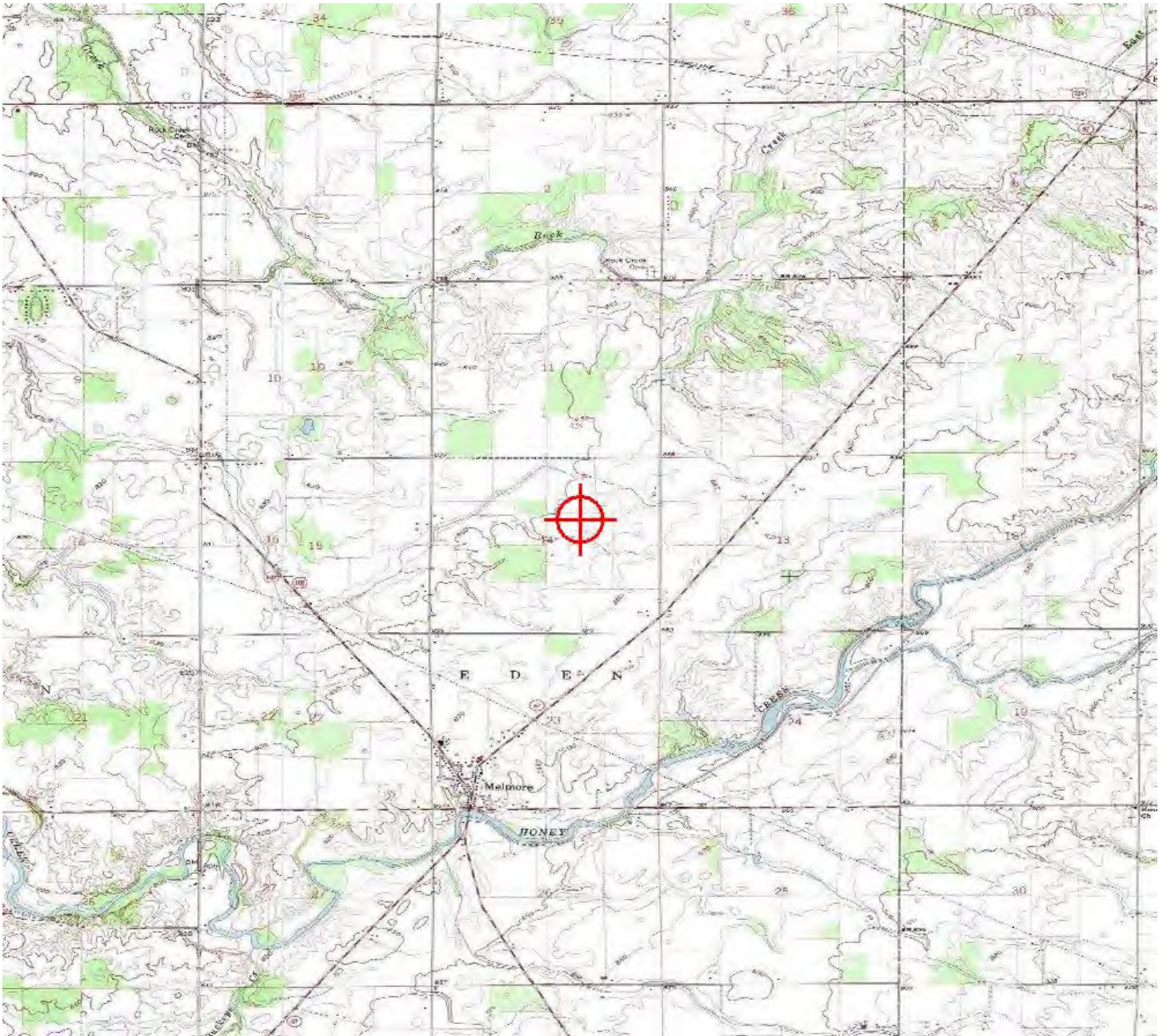
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5648-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 50
Location:	Bloomfield, OH
Latitude:	41-03-13.58N NAD 83
Longitude:	83-03-43.64W
Heights:	899 feet site elevation (SE) 656 feet above ground level (AGL) 1555 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5648-OE.

Signature Control No: 368323645-410543470

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5648-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
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2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
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2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
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2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
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2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

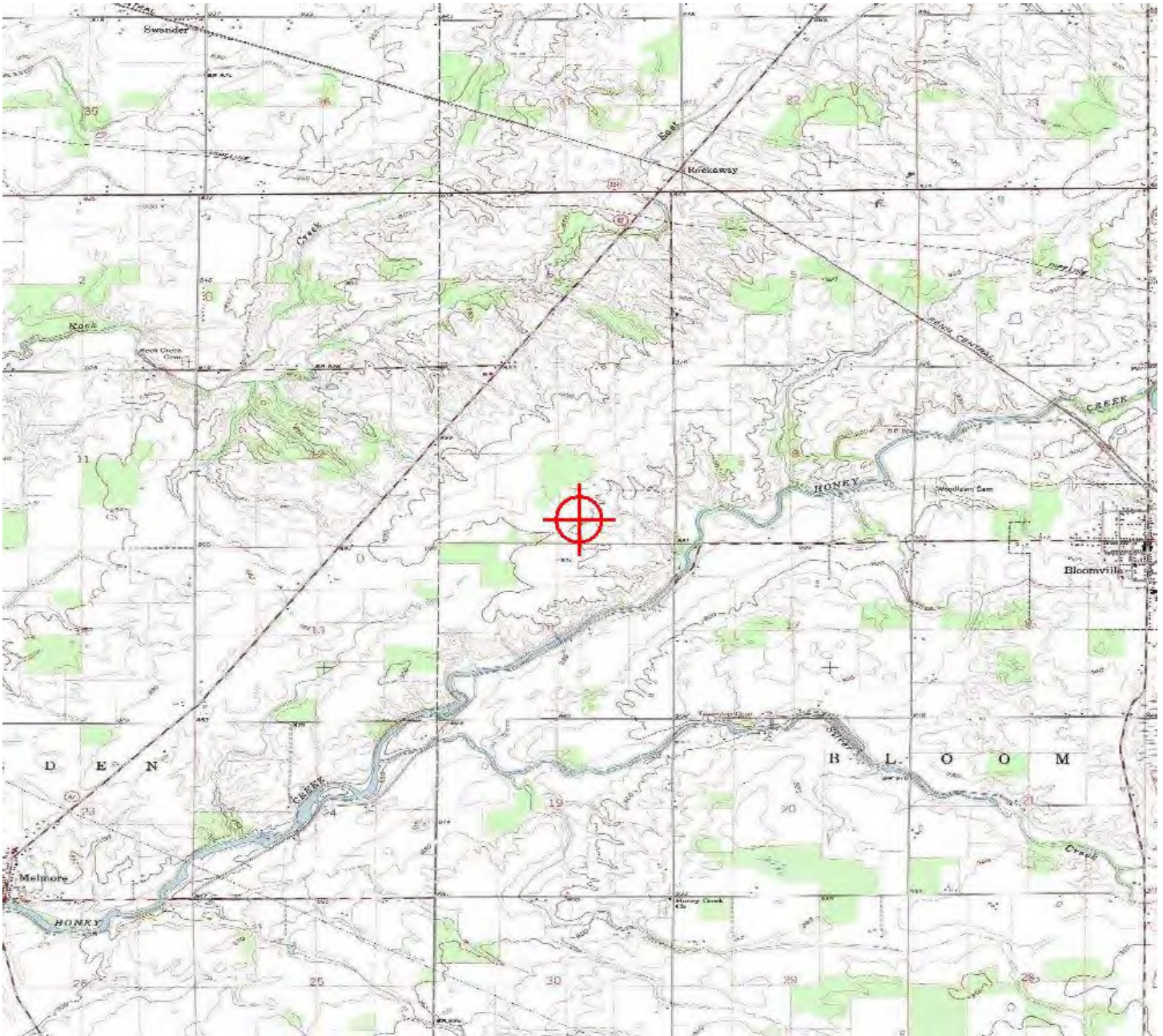
2018-WTE-5677-OE

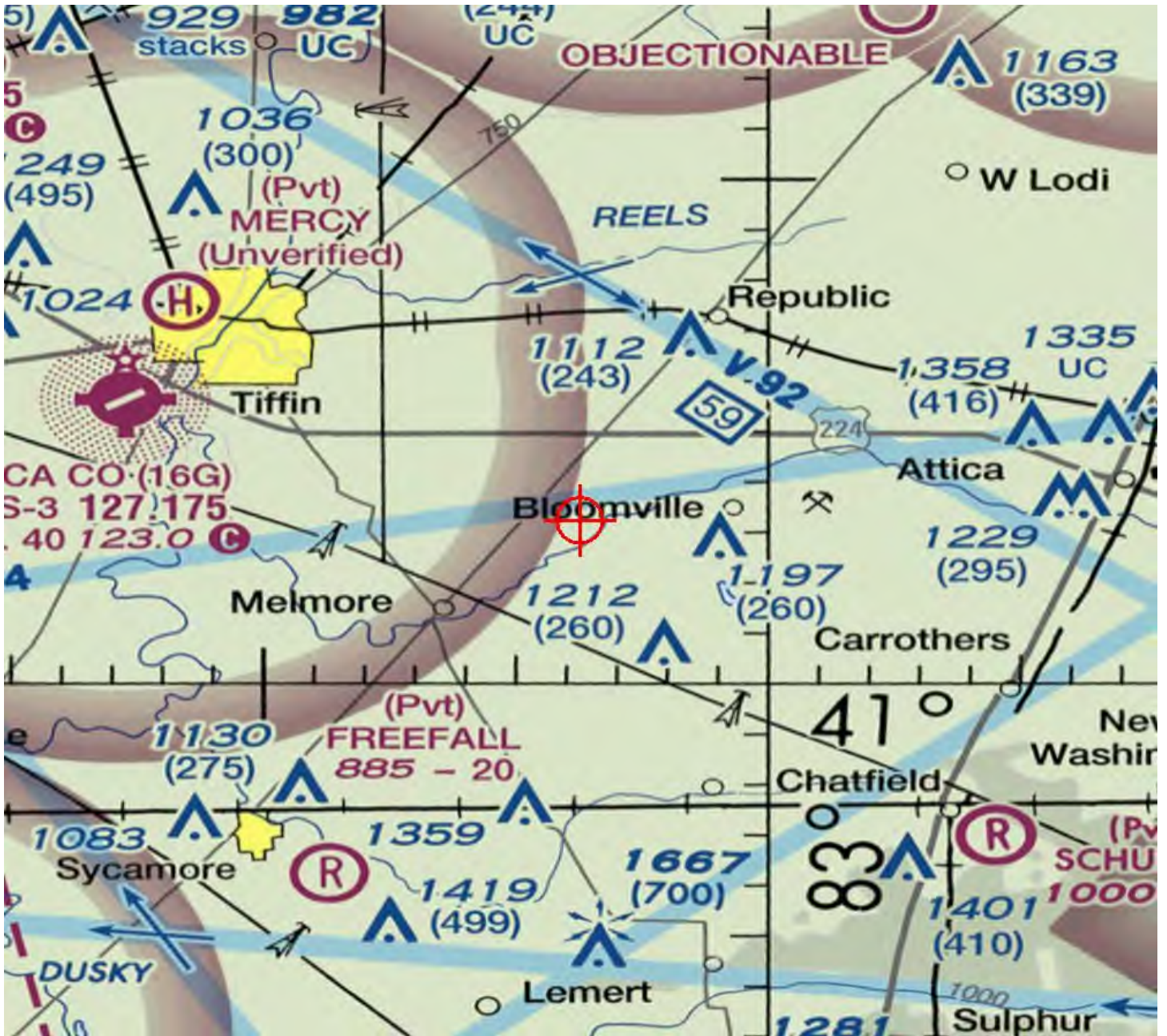
2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5649-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 51
Location:	Bloomfield, OH
Latitude:	41-02-19.86N NAD 83
Longitude:	83-08-45.50W
Heights:	827 feet site elevation (SE) 656 feet above ground level (AGL) 1483 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5649-OE.

Signature Control No: 368323646-410543471

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5649-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
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2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
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2018-WTE-5664-OE
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2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

2018-WTE-5677-OE

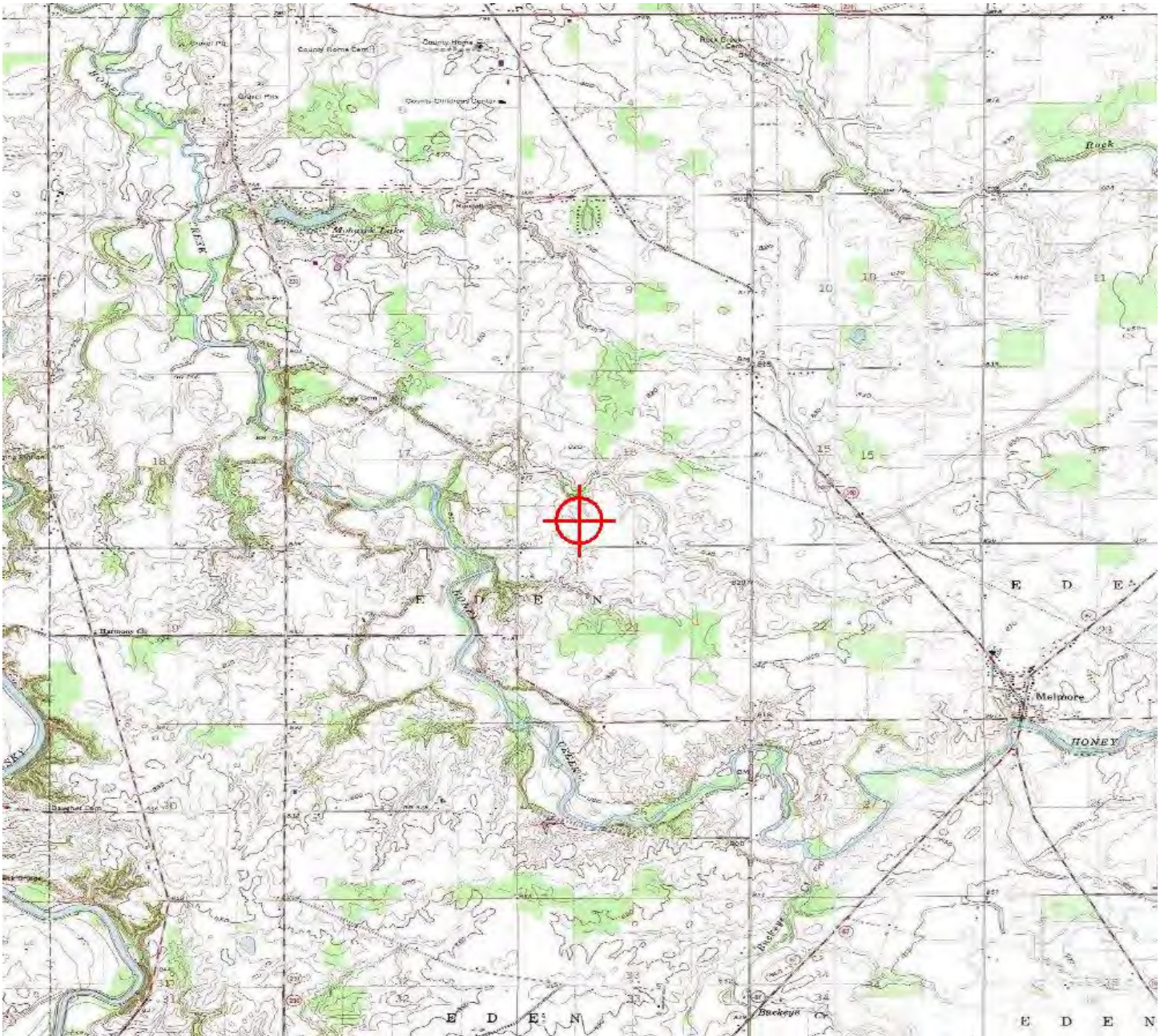
2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation

TOPO Map for ASN 2018-WTE-5649-OE







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

Aeronautical Study No.
2018-WTE-5650-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 52
Location:	Bloomfield, OH
Latitude:	41-01-08.94N NAD 83
Longitude:	83-03-49.19W
Heights:	897 feet site elevation (SE) 656 feet above ground level (AGL) 1553 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5650-OE.

Signature Control No: 368323647-410543475

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5650-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

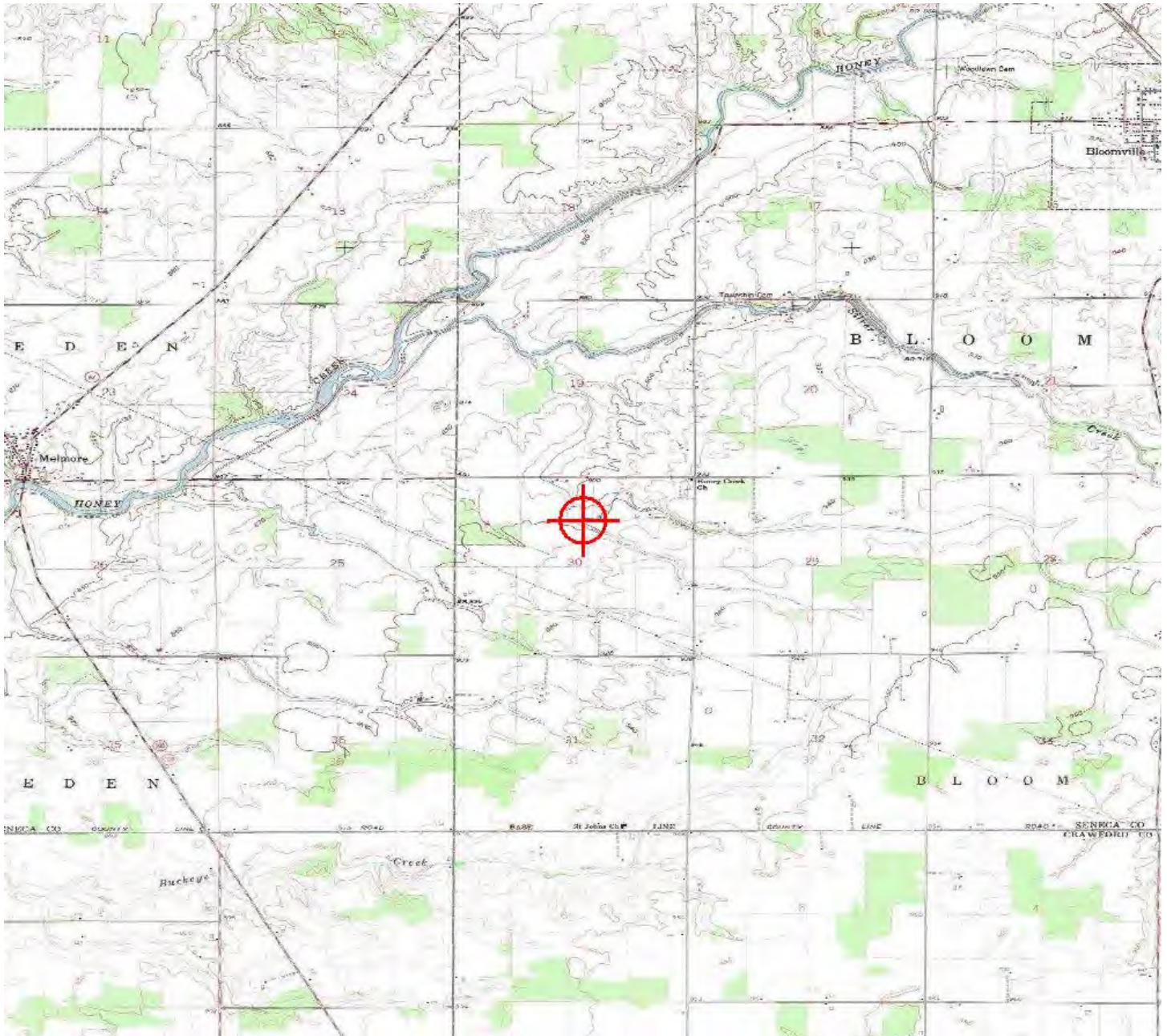
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5651-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 53
Location:	Bloomfield, OH
Latitude:	41-02-01.56N NAD 83
Longitude:	83-08-30.21W
Heights:	830 feet site elevation (SE) 656 feet above ground level (AGL) 1486 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5651-OE.

Signature Control No: 368323648-410543476

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5651-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN Exceeds Willard Airport (8G1) A(2) by (feet)

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

2018-WTE-5677-OE

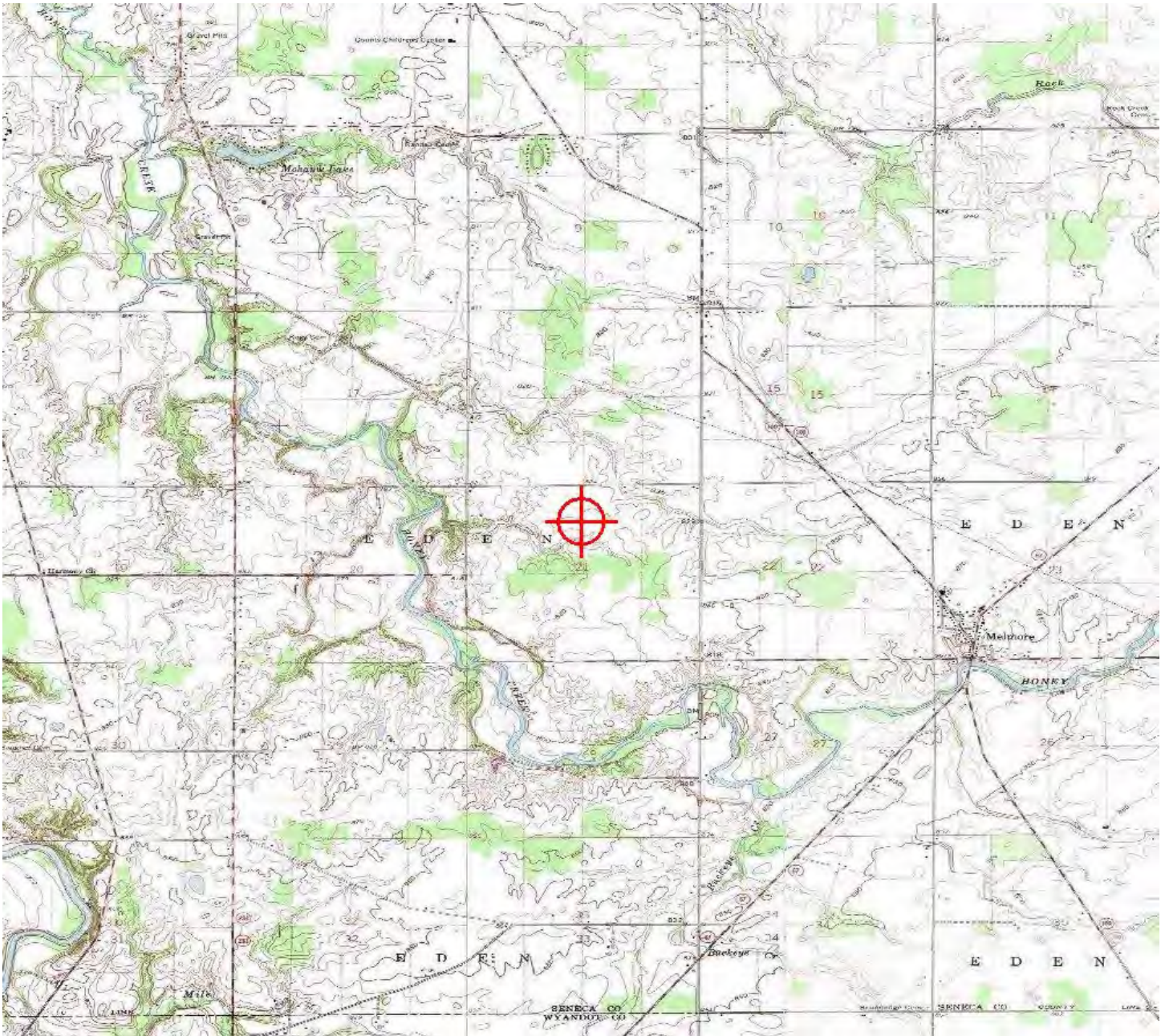
2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation

TOPO Map for ASN 2018-WTE-5651-OE







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

Aeronautical Study No.
2018-WTE-5652-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 54
Location:	Bloomfield, OH
Latitude:	41-00-58.75N NAD 83
Longitude:	83-04-44.02W
Heights:	883 feet site elevation (SE) 656 feet above ground level (AGL) 1539 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5652-OE.

Signature Control No: 368323649-410543477

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5652-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
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 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

- a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

- b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

- c. The impact on all planned public-use airports and aeronautical facilities: None.

- d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
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2018-WTE-5666-OE
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2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

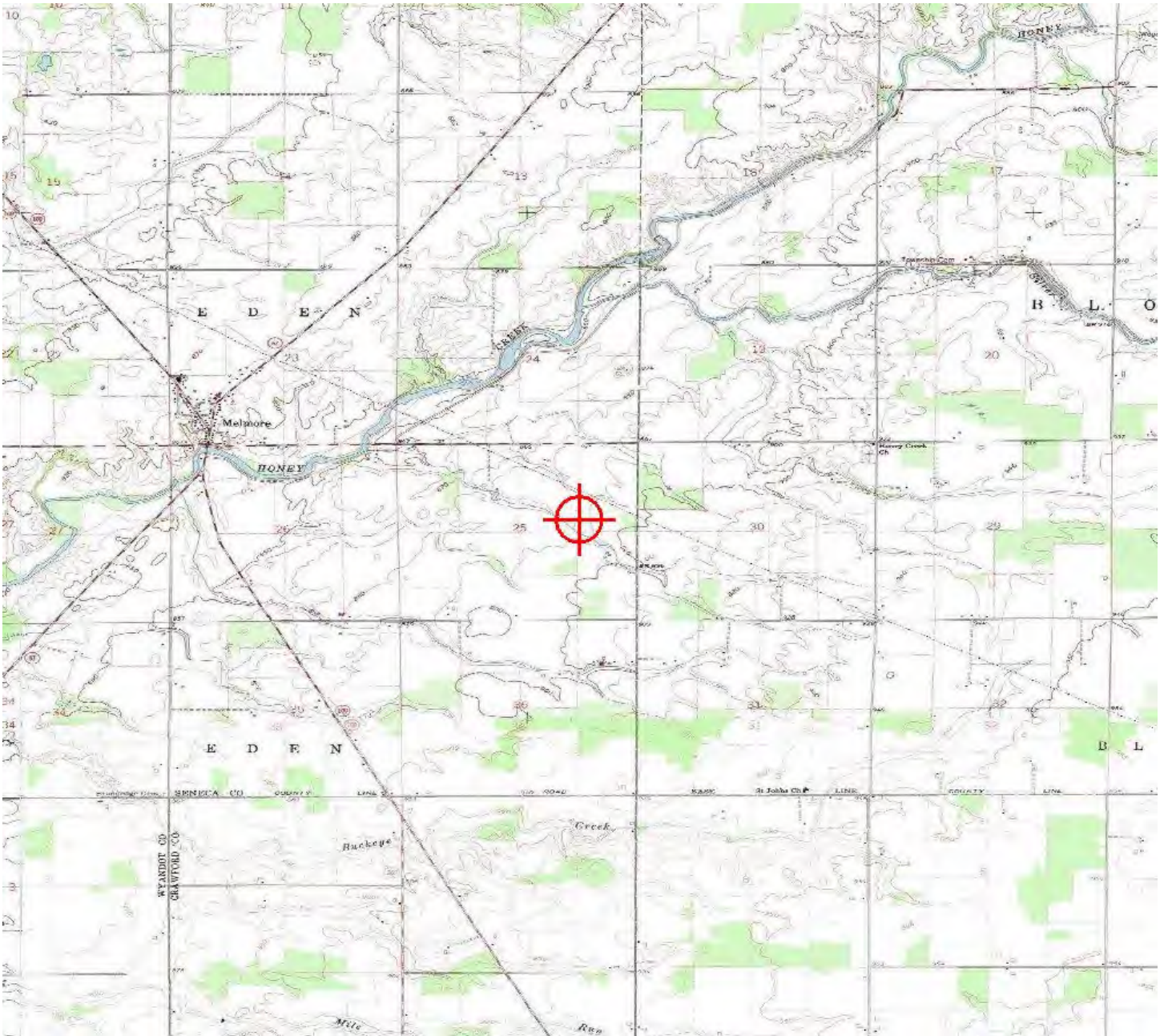
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation





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

Aeronautical Study No.
2018-WTE-5653-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 55
Location:	Bloomfield, OH
Latitude:	41-01-46.08N NAD 83
Longitude:	83-04-16.45W
Heights:	874 feet site elevation (SE) 656 feet above ground level (AGL) 1530 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5653-OE.

Signature Control No: 368323650-410543481

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5653-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
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 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
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2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
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2018-WTE-5647-OE
2018-WTE-5648-OE
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2018-WTE-5666-OE
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2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

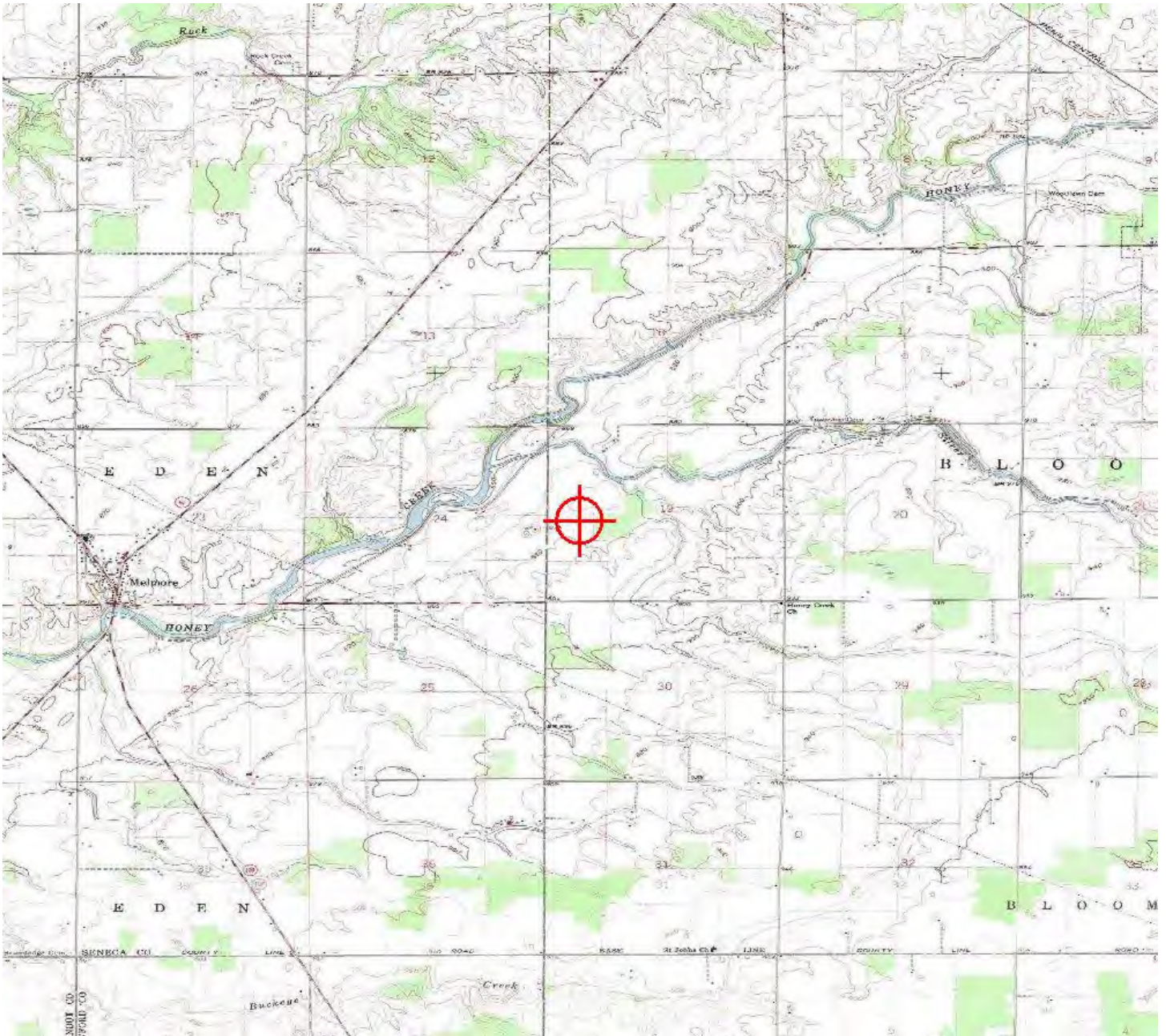
2018-WTE-5677-OE

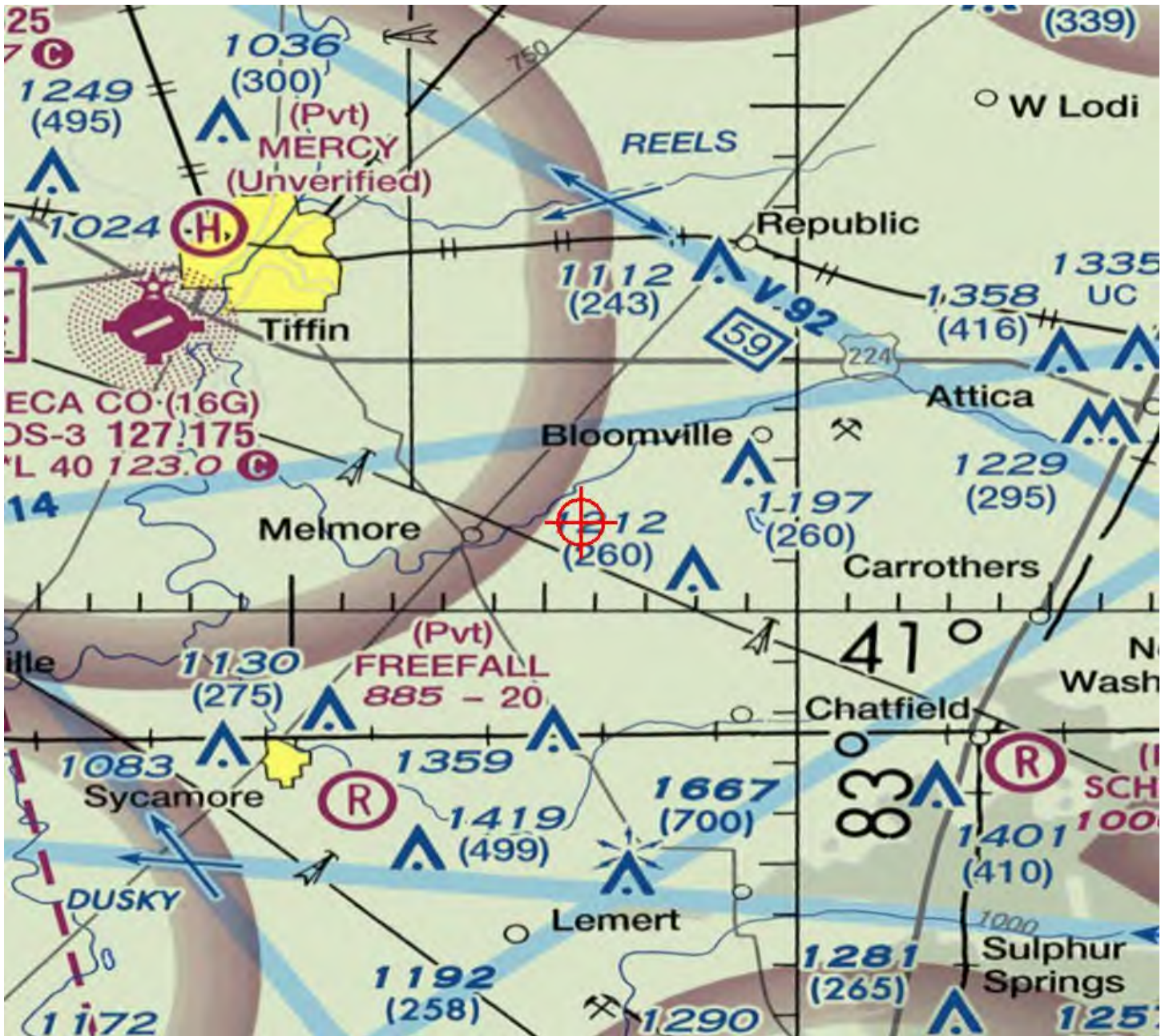
2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5654-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 56
Location:	Bloomfield, OH
Latitude:	41-02-27.12N NAD 83
Longitude:	83-02-15.65W
Heights:	924 feet site elevation (SE) 656 feet above ground level (AGL) 1580 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5654-OE.

Signature Control No: 368323651-410543485

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5654-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

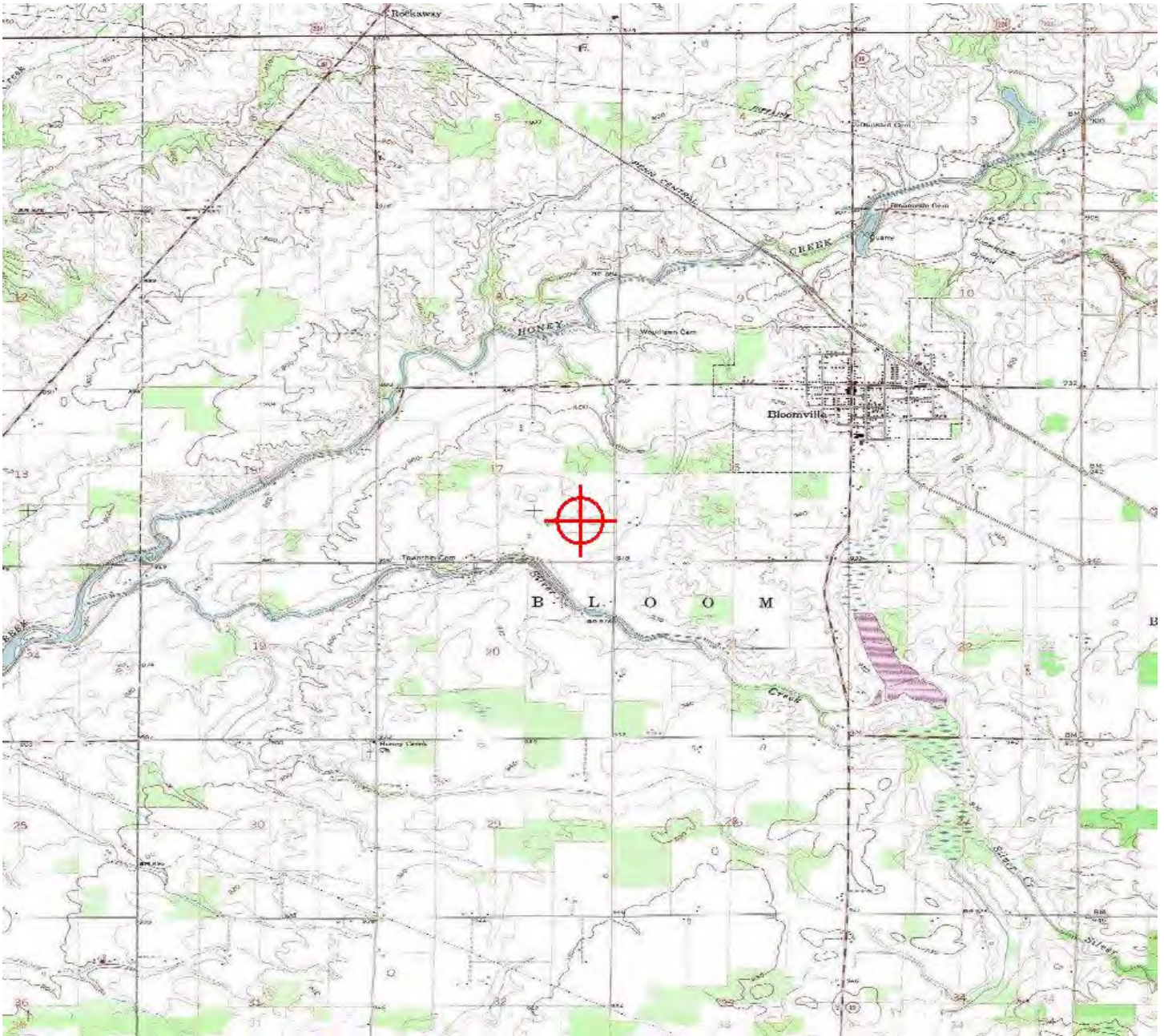
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation





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

Aeronautical Study No.
2018-WTE-5655-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 57
Location:	Bloomfield, OH
Latitude:	41-02-51.35N NAD 83
Longitude:	83-01-37.82W
Heights:	918 feet site elevation (SE) 656 feet above ground level (AGL) 1574 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5655-OE.

Signature Control No: 368323652-410543486

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5655-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

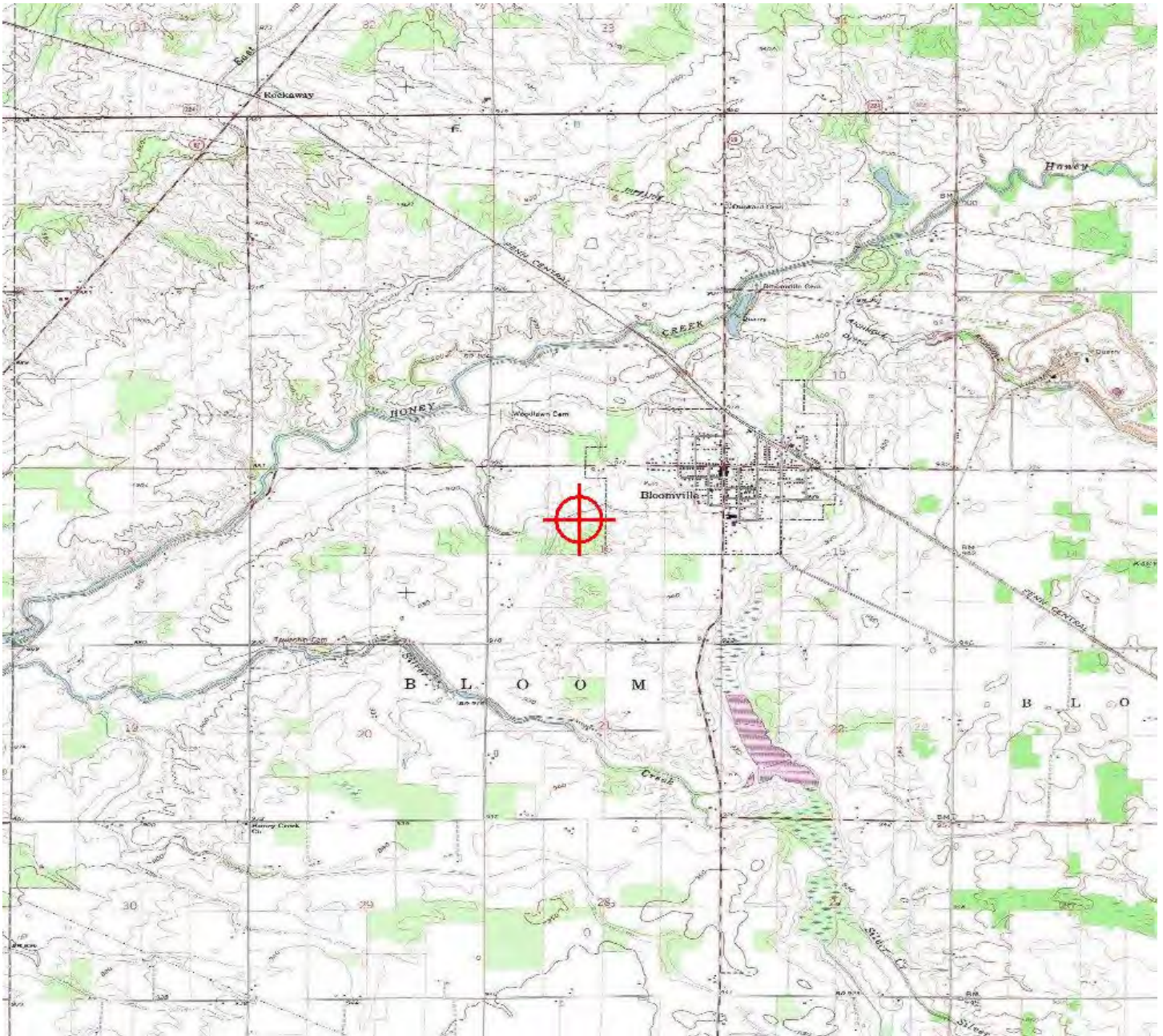
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation





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

Aeronautical Study No.
2018-WTE-5656-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 58
Location:	Bloomfield, OH
Latitude:	41-06-45.40N NAD 83
Longitude:	82-56-35.99W
Heights:	922 feet site elevation (SE) 656 feet above ground level (AGL) 1578 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5656-OE.

Signature Control No: 368323653-410543487

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5656-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G>. It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

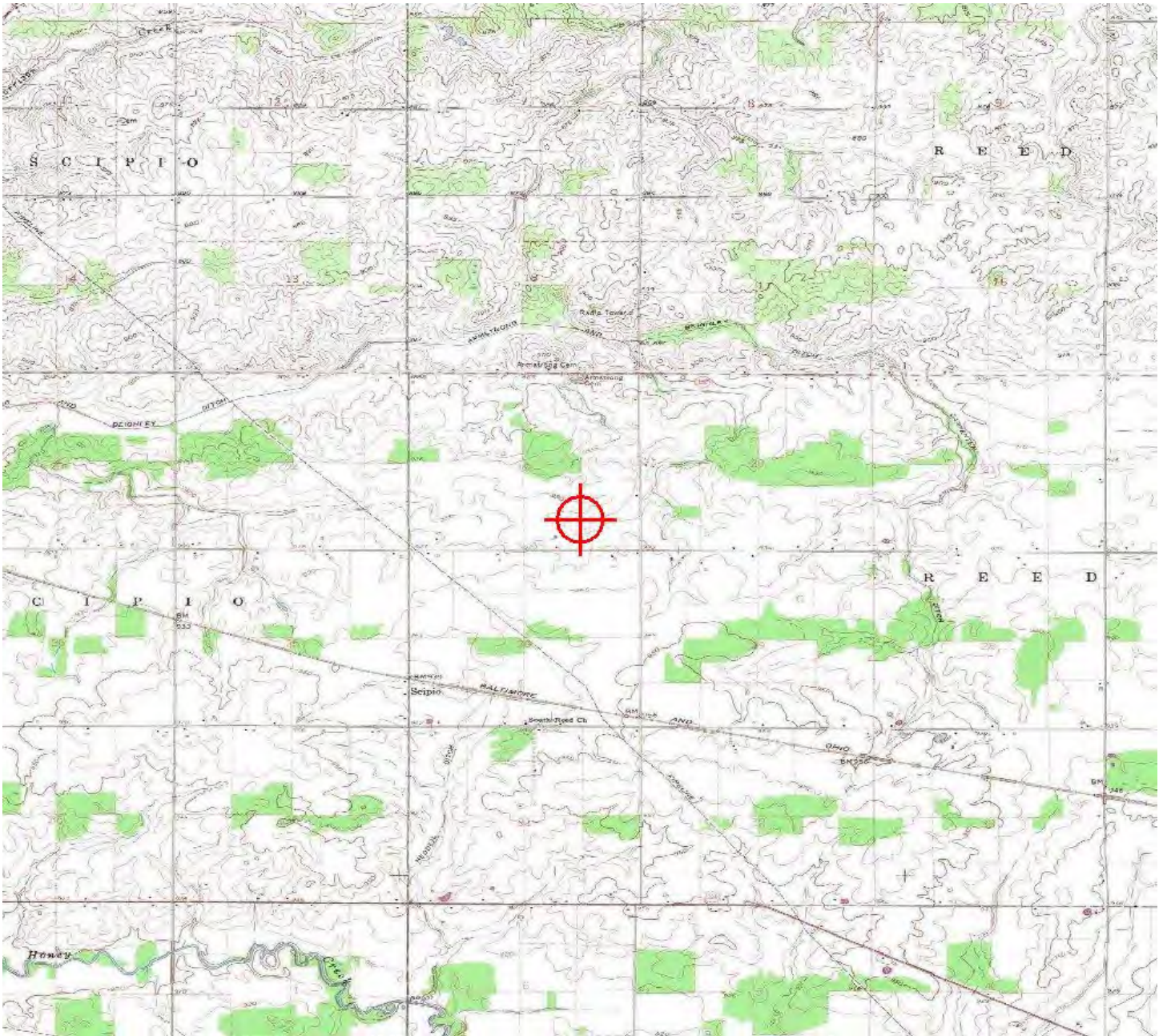
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5657-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 59
Location:	Bloomfield, OH
Latitude:	41-01-37.31N NAD 83
Longitude:	83-03-37.41W
Heights:	900 feet site elevation (SE) 656 feet above ground level (AGL) 1556 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5657-OE.

Signature Control No: 368323654-410543490

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5657-OE

Abbreviations

AGL - above ground level

AMSL - above mean sea level

RWY - runway

VFR - visual flight rules

IFR - instrument flight rules

NM - nautical mile

ASN- Aeronautical Study Number

CAT - category aircraft

MDA - minimum descent altitude

DA - decision altitude

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

- a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

- b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

- c. The impact on all planned public-use airports and aeronautical facilities: None.

- d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
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2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

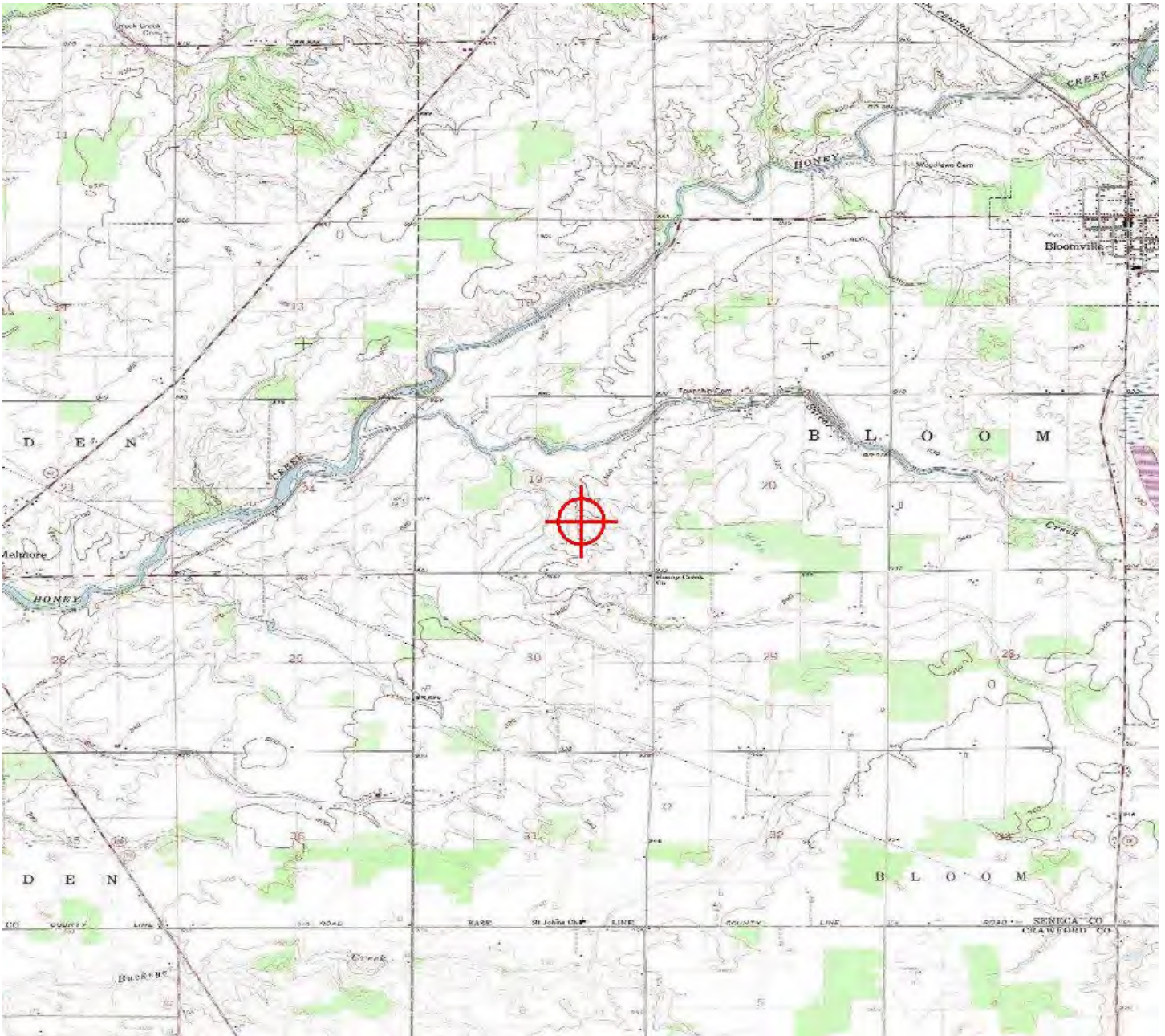
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation





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

Aeronautical Study No.
2018-WTE-5658-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 60
Location:	Bloomfield, OH
Latitude:	41-01-59.27N NAD 83
Longitude:	83-03-53.95W
Heights:	874 feet site elevation (SE)
	656 feet above ground level (AGL)
	1530 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5658-OE.

Signature Control No: 368323655-410543491

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5658-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

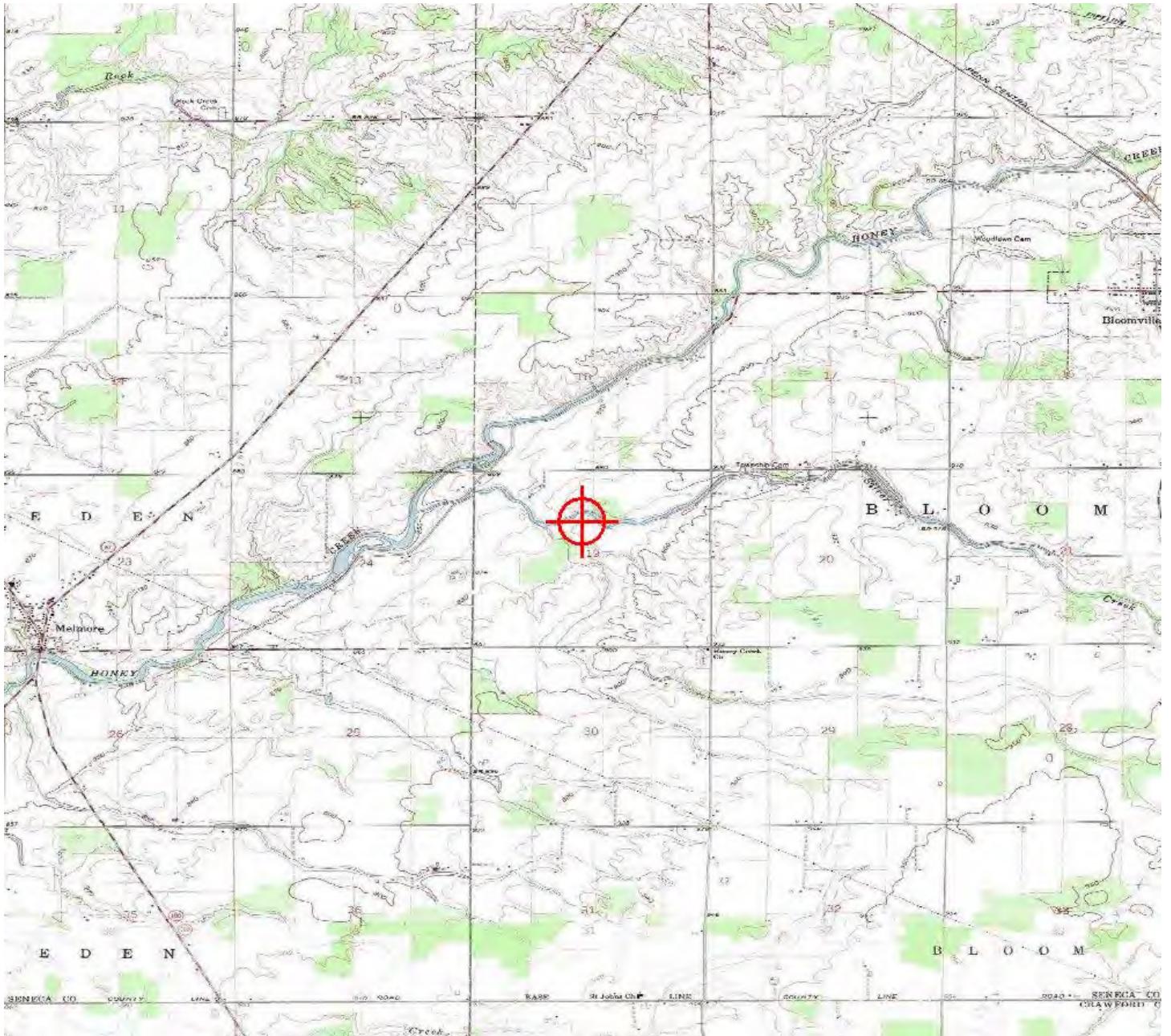
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation





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

Aeronautical Study No.
2018-WTE-5659-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 61
Location:	Bloomfield, OH
Latitude:	41-01-55.67N NAD 83
Longitude:	83-03-34.27W
Heights:	884 feet site elevation (SE) 656 feet above ground level (AGL) 1540 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5659-OE.

Signature Control No: 368323656-410543510

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5659-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
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2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
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2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

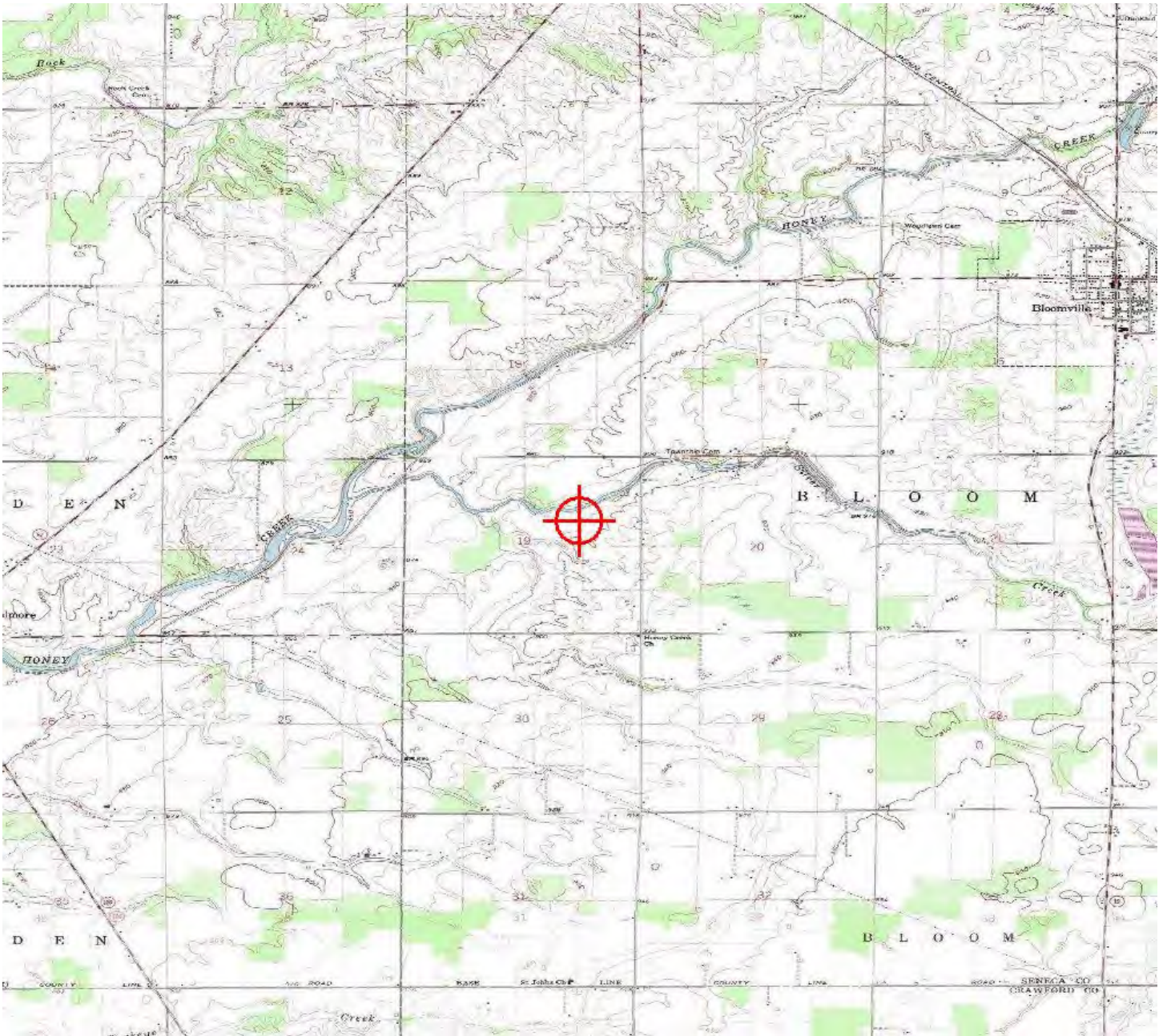
2018-WTE-5677-OE

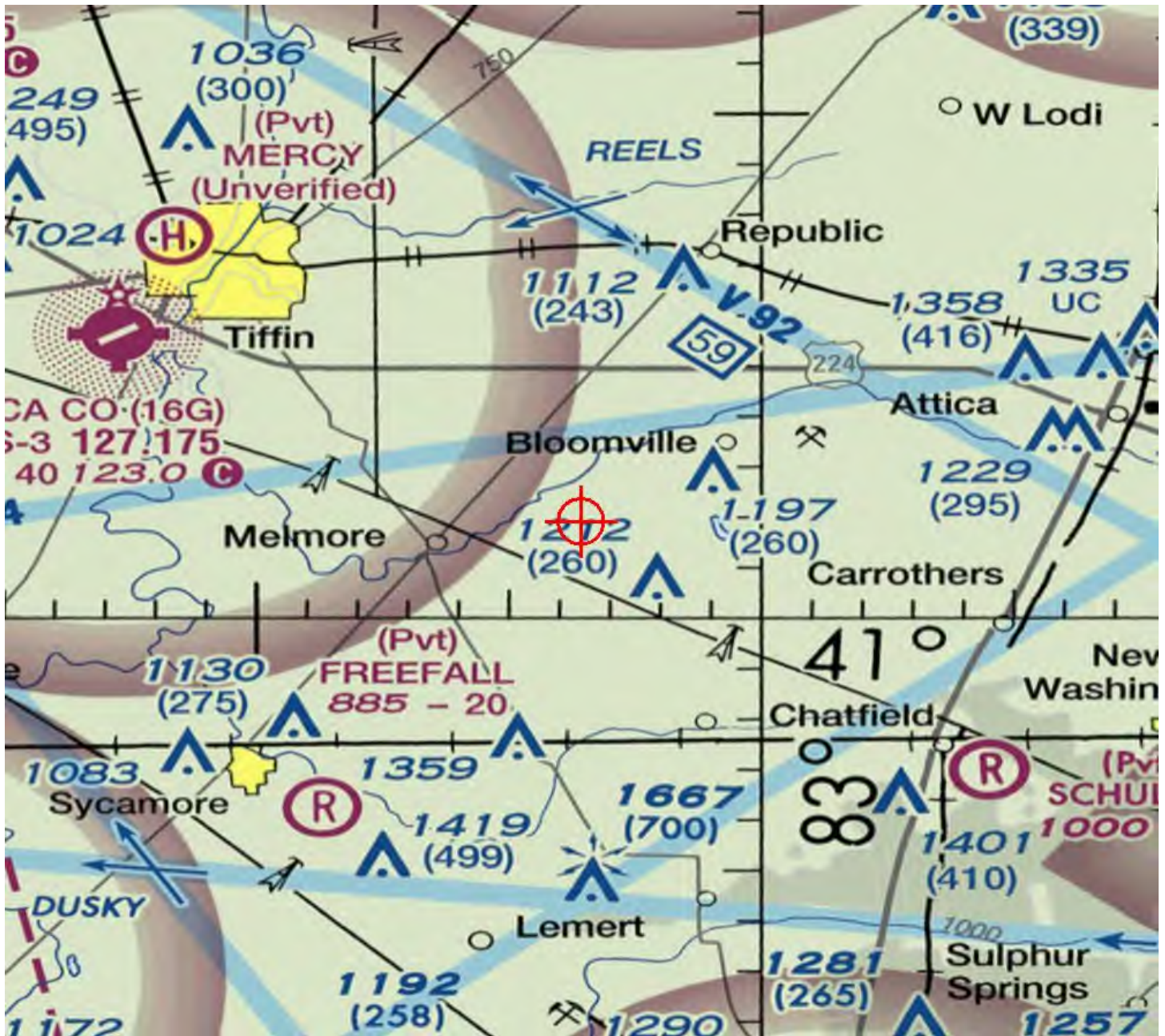
2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5660-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 63
Location:	Bloomfield, OH
Latitude:	41-05-26.13N NAD 83
Longitude:	82-58-52.48W
Heights:	943 feet site elevation (SE) 656 feet above ground level (AGL) 1599 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5660-OE.

Signature Control No: 368323657-410543514

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5660-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

- a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

- b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

- c. The impact on all planned public-use airports and aeronautical facilities: None.

- d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

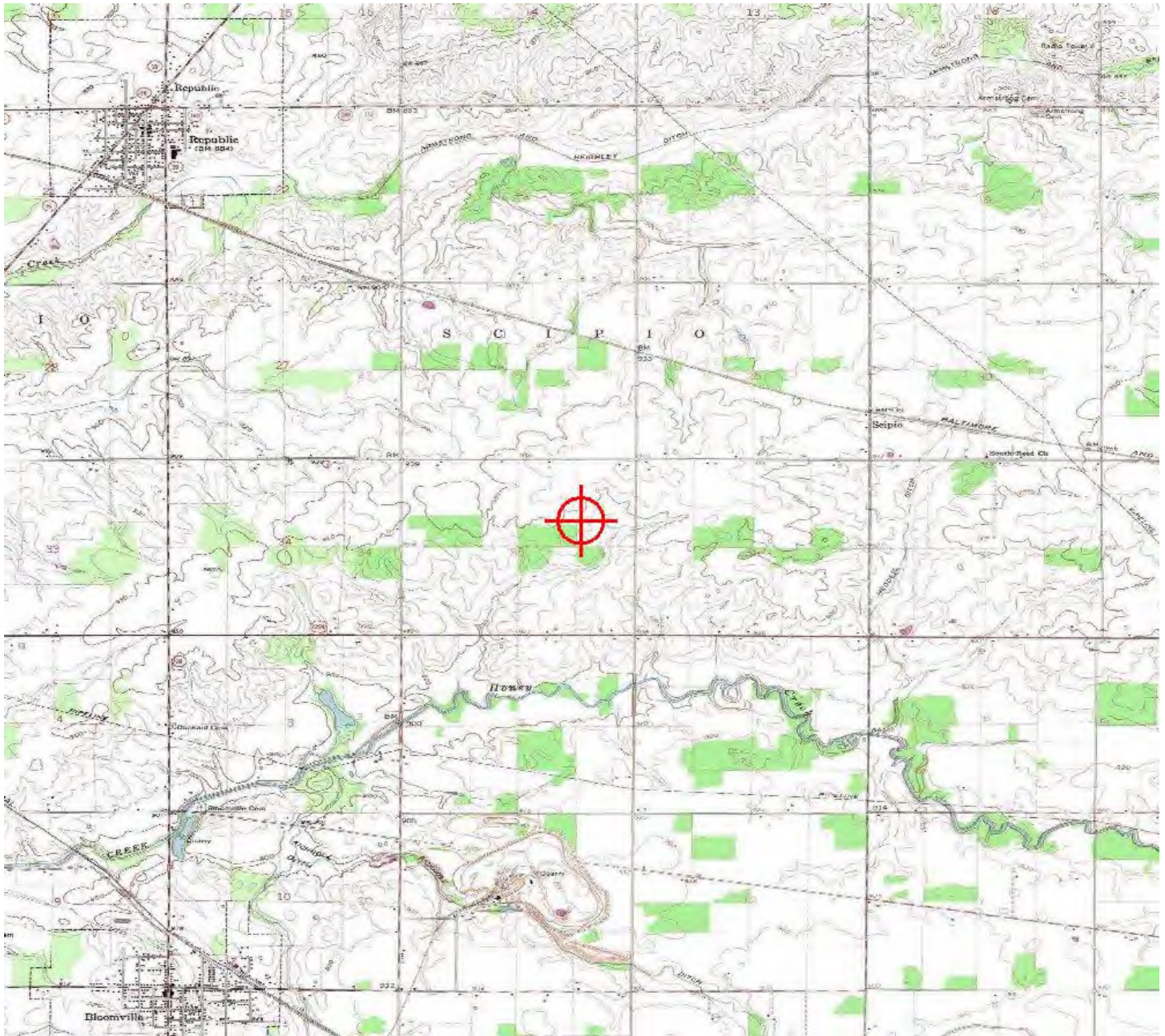
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation





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

Aeronautical Study No.
2018-WTE-5661-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 64
Location:	Bloomfield, OH
Latitude:	41-04-38.12N NAD 83
Longitude:	82-58-19.15W
Heights:	899 feet site elevation (SE) 656 feet above ground level (AGL) 1555 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5661-OE.

Signature Control No: 368323658-410543526

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5661-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

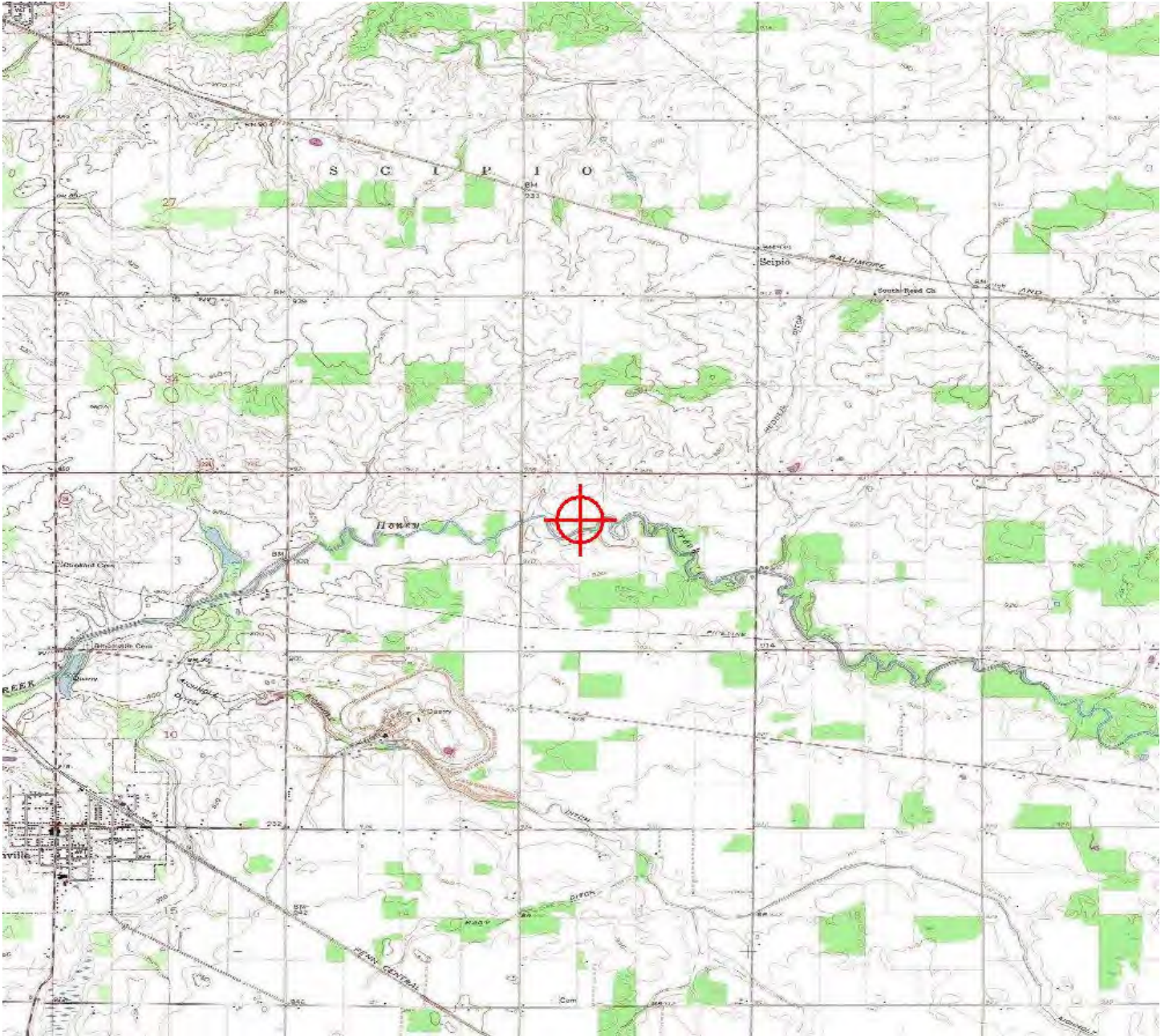
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation





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

Aeronautical Study No.
2018-WTE-5662-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 65
Location:	Bloomfield, OH
Latitude:	41-03-42.15N NAD 83
Longitude:	83-03-58.24W
Heights:	903 feet site elevation (SE)
	656 feet above ground level (AGL)
	1559 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5662-OE.

Signature Control No: 368323659-410543533

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5662-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

- a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

- b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

- c. The impact on all planned public-use airports and aeronautical facilities: None.

- d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

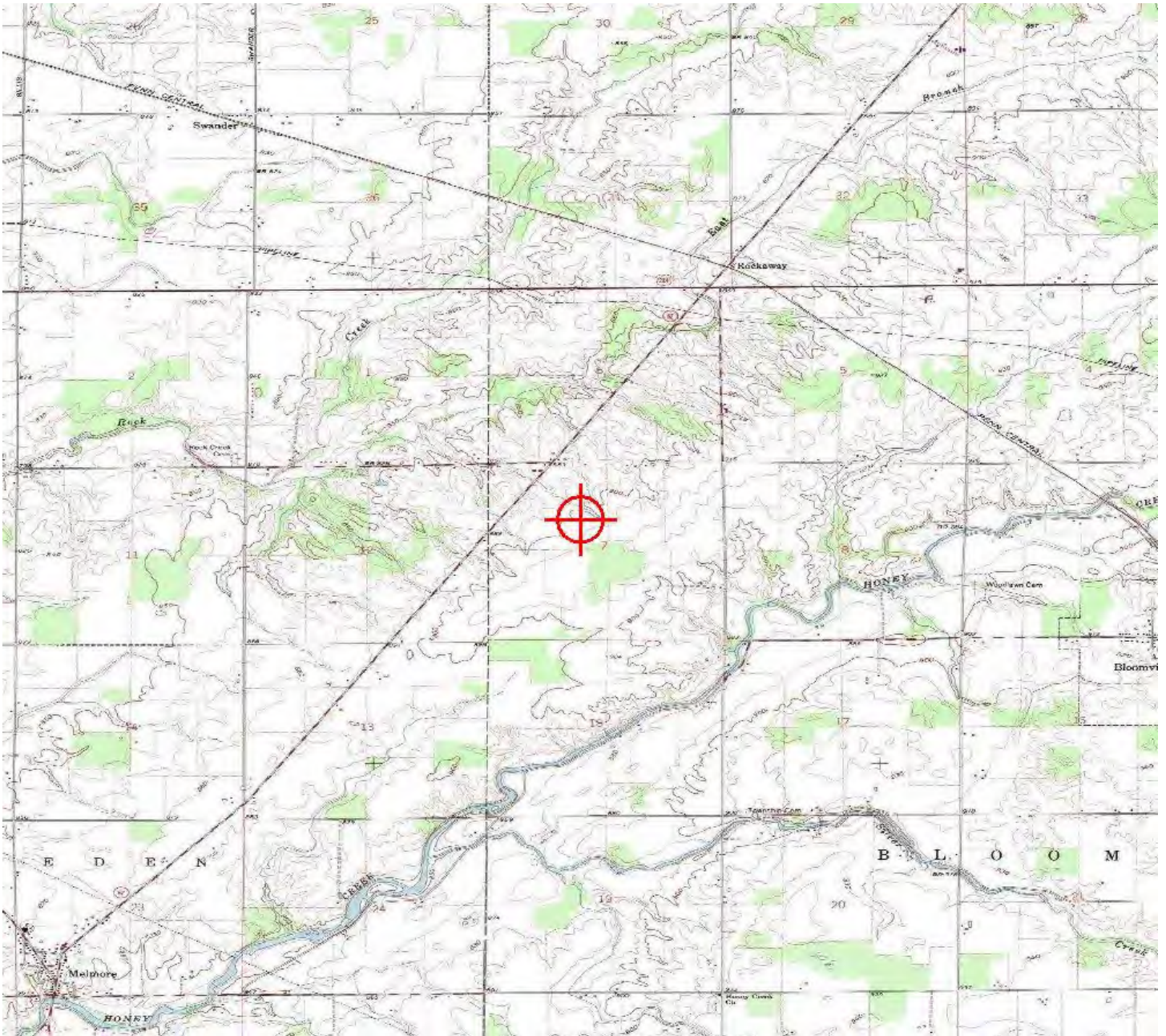
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5663-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 66
Location:	Bloomfield, OH
Latitude:	41-02-52.13N NAD 83
Longitude:	83-04-44.53W
Heights:	895 feet site elevation (SE) 656 feet above ground level (AGL) 1551 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5663-OE.

Signature Control No: 368323660-410543536

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5663-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
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2018-WTE-5667-OE
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2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
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2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
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2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
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2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
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2018-WTE-5664-OE
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2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

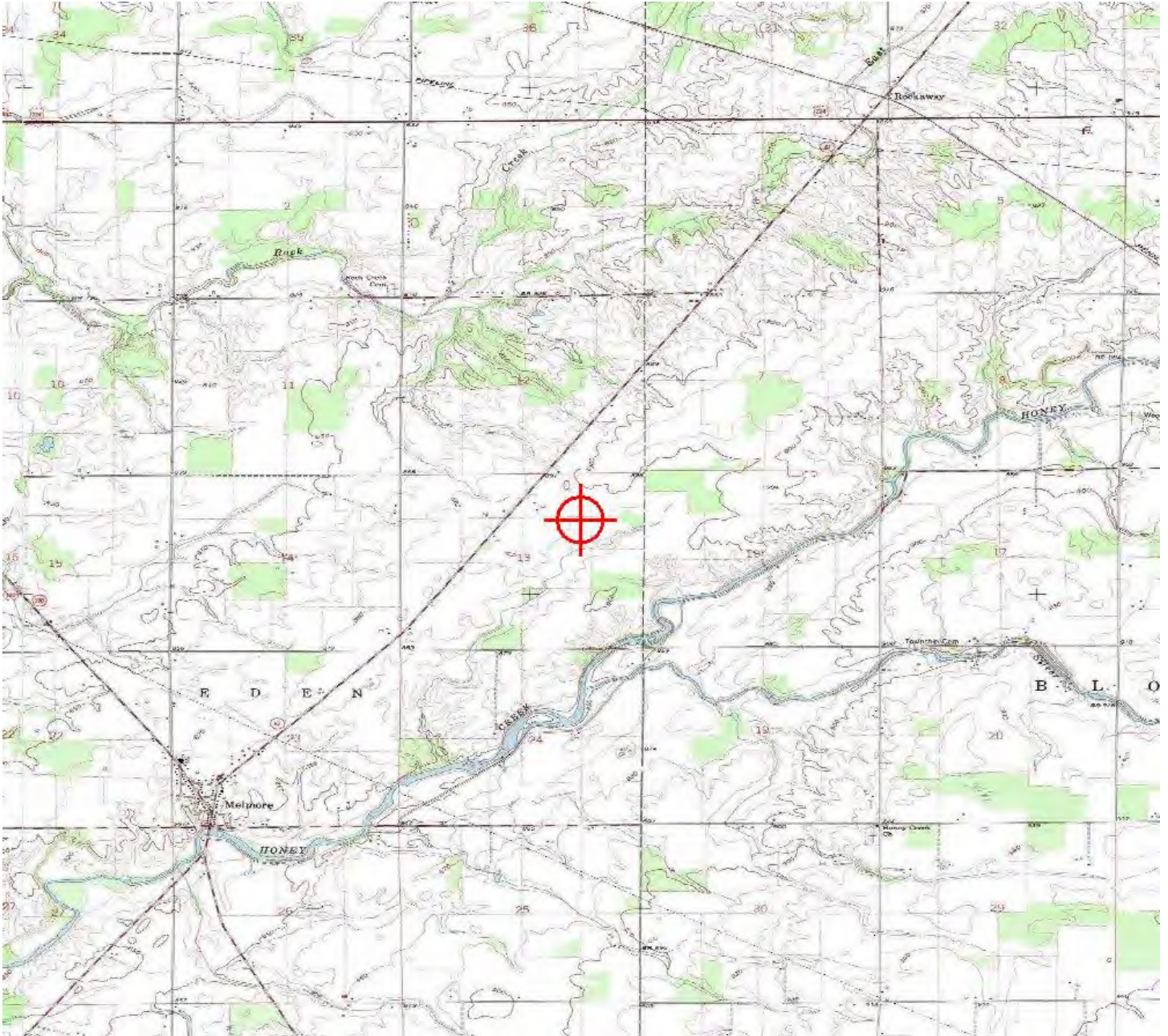
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation





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

Aeronautical Study No.
2018-WTE-5664-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 67
Location:	Bloomfield, OH
Latitude:	41-03-14.62N NAD 83
Longitude:	83-04-03.93W
Heights:	902 feet site elevation (SE) 656 feet above ground level (AGL) 1558 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5664-OE.

Signature Control No: 368323661-410543544

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5664-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

- a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

- b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

- c. The impact on all planned public-use airports and aeronautical facilities: None.

- d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
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2018-WTE-5664-OE
2018-WTE-5665-OE
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2018-WTE-5671-OE
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2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

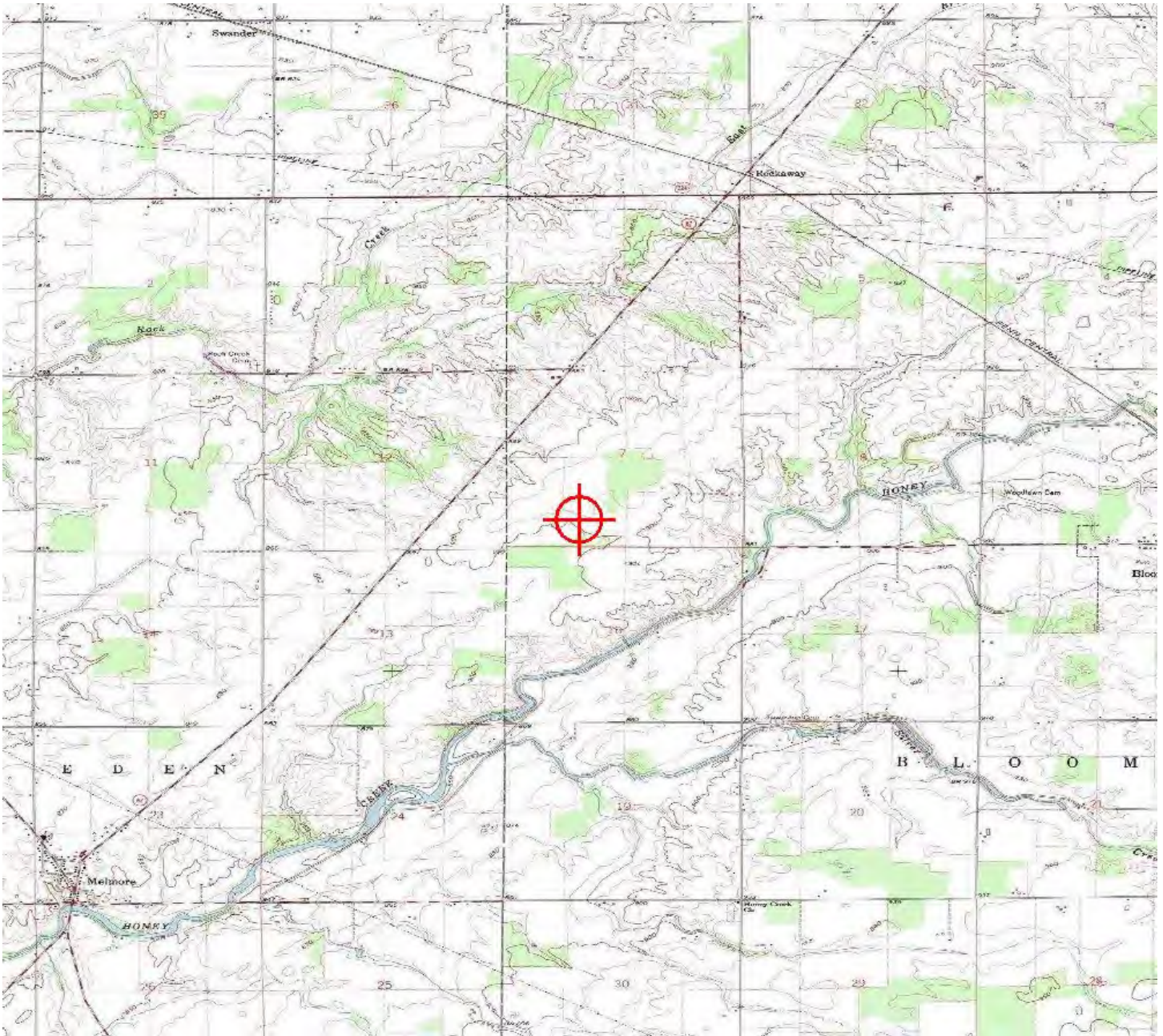
2018-WTE-5677-OE

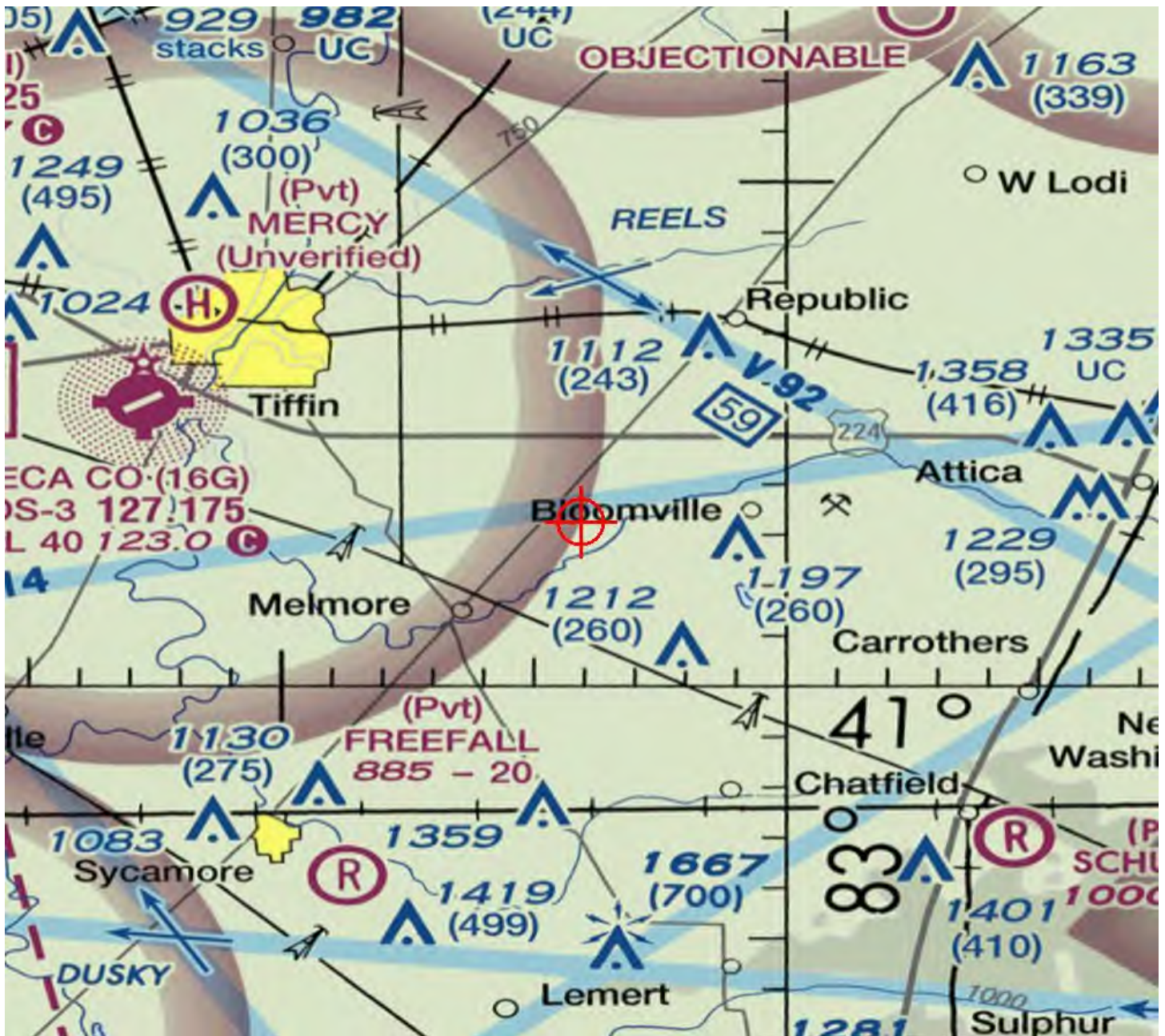
2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5665-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 68
Location:	Bloomfield, OH
Latitude:	41-03-09.18N NAD 83
Longitude:	83-05-14.91W
Heights:	877 feet site elevation (SE) 656 feet above ground level (AGL) 1533 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5665-OE.

Signature Control No: 368323662-410543546

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5665-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation

A topographic map of the Edinburg, Texas area, showing the Rio Grande, Honey Creek, and surrounding terrain. A red bullseye symbol is placed on the map, indicating a specific location. The map includes contour lines, elevation markers, and place names like Edinburg, Melmore, and Rockaway.





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

Aeronautical Study No.
2018-WTE-5666-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 69
Location:	Bloomfield, OH
Latitude:	41-03-04.10N NAD 83
Longitude:	83-05-54.18W
Heights:	853 feet site elevation (SE) 656 feet above ground level (AGL) 1509 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5666-OE.

Signature Control No: 368323663-410543548

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5666-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

- a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

- b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

- c. The impact on all planned public-use airports and aeronautical facilities: None.

- d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
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2018-WTE-5657-OE
2018-WTE-5658-OE
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2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

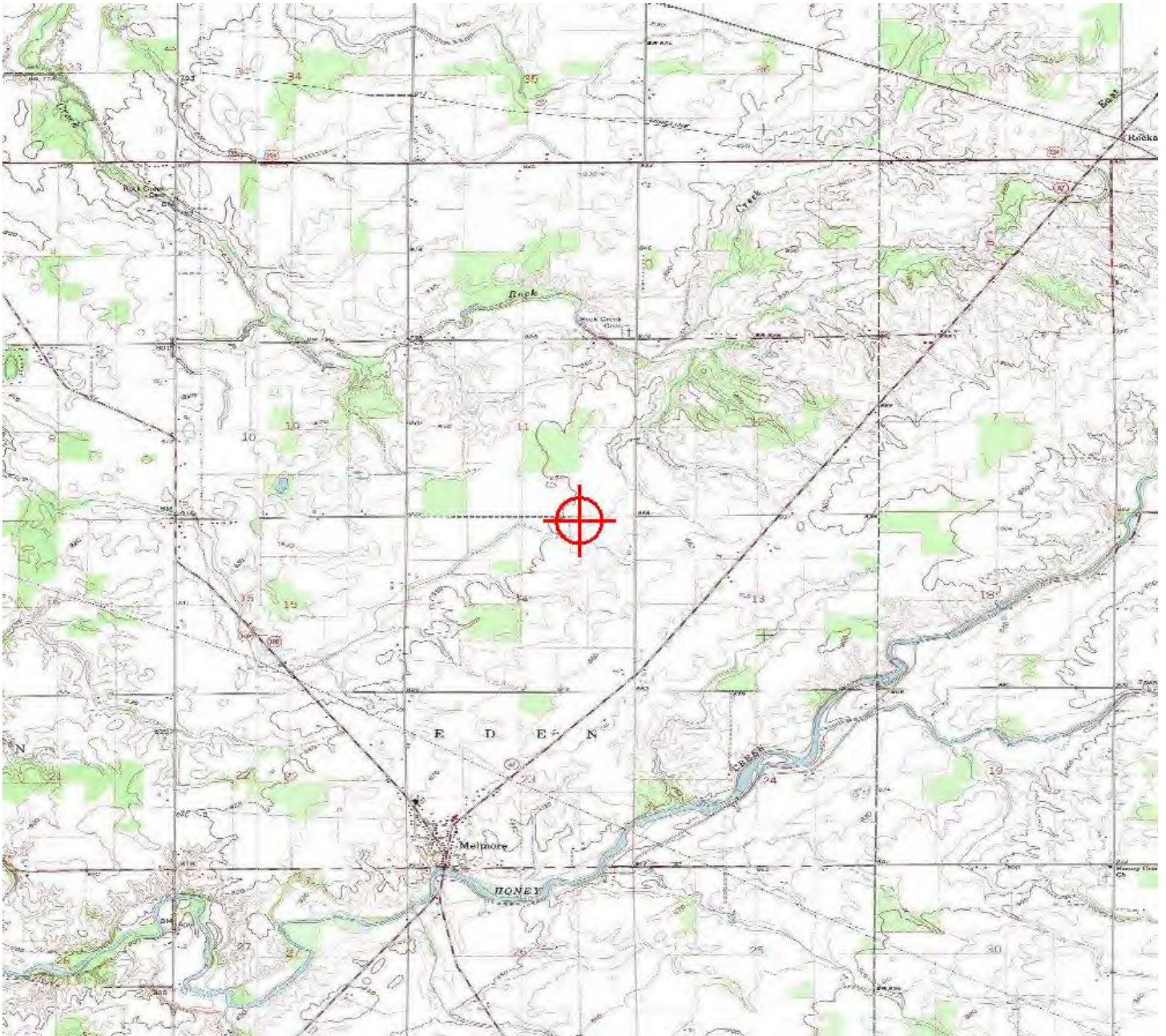
2018-WTE-5677-OE

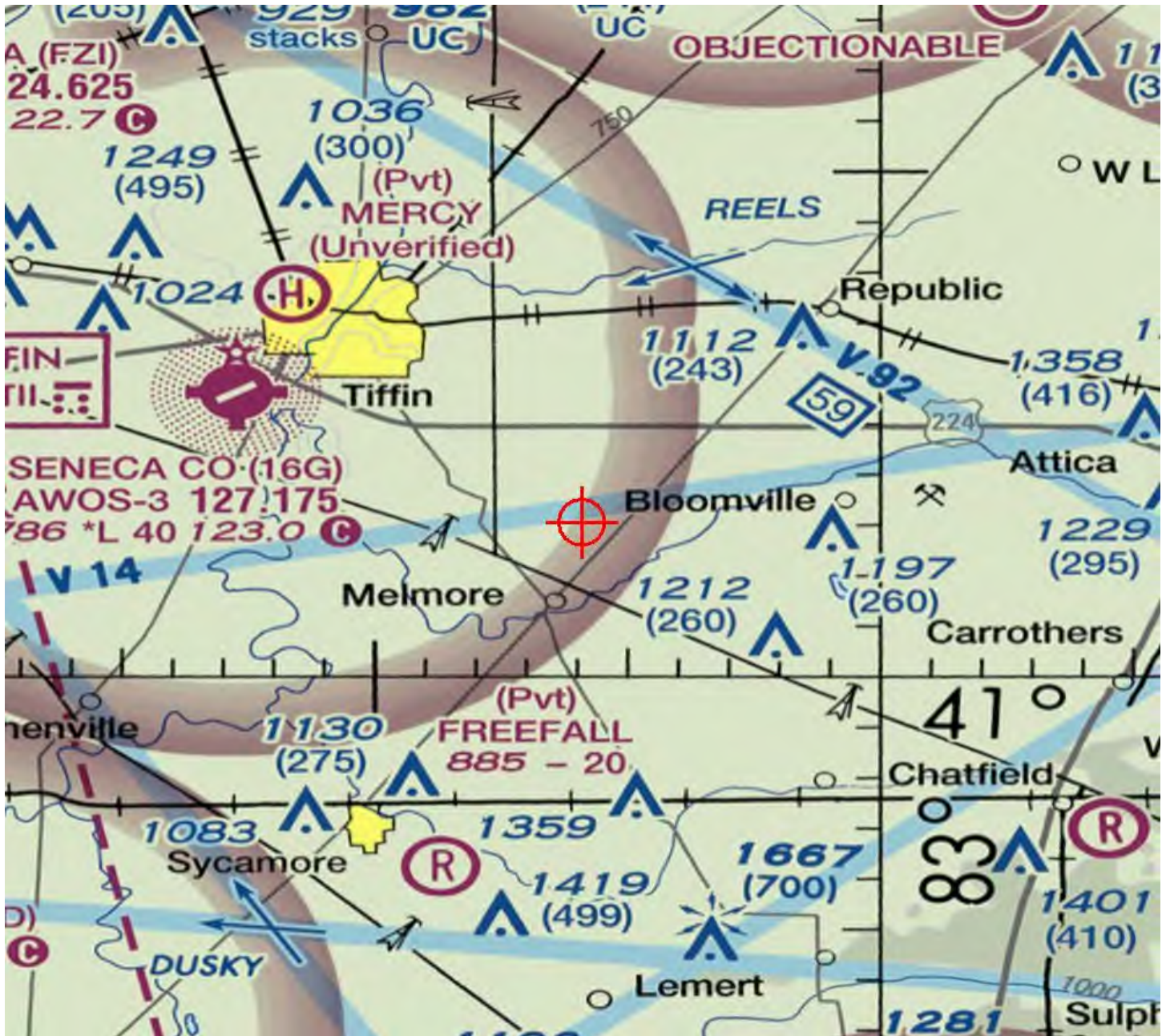
2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5667-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 72
Location:	Bloomfield, OH
Latitude:	41-06-19.48N NAD 83
Longitude:	82-52-27.56W
Heights:	912 feet site elevation (SE) 656 feet above ground level (AGL) 1568 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5667-OE.

Signature Control No: 368323664-410543553

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5667-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
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2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
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2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

- a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

- b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

- c. The impact on all planned public-use airports and aeronautical facilities: None.

- d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
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2018-WTE-5646-OE
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2018-WTE-5675-OE
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2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

2018-WTE-5677-OE

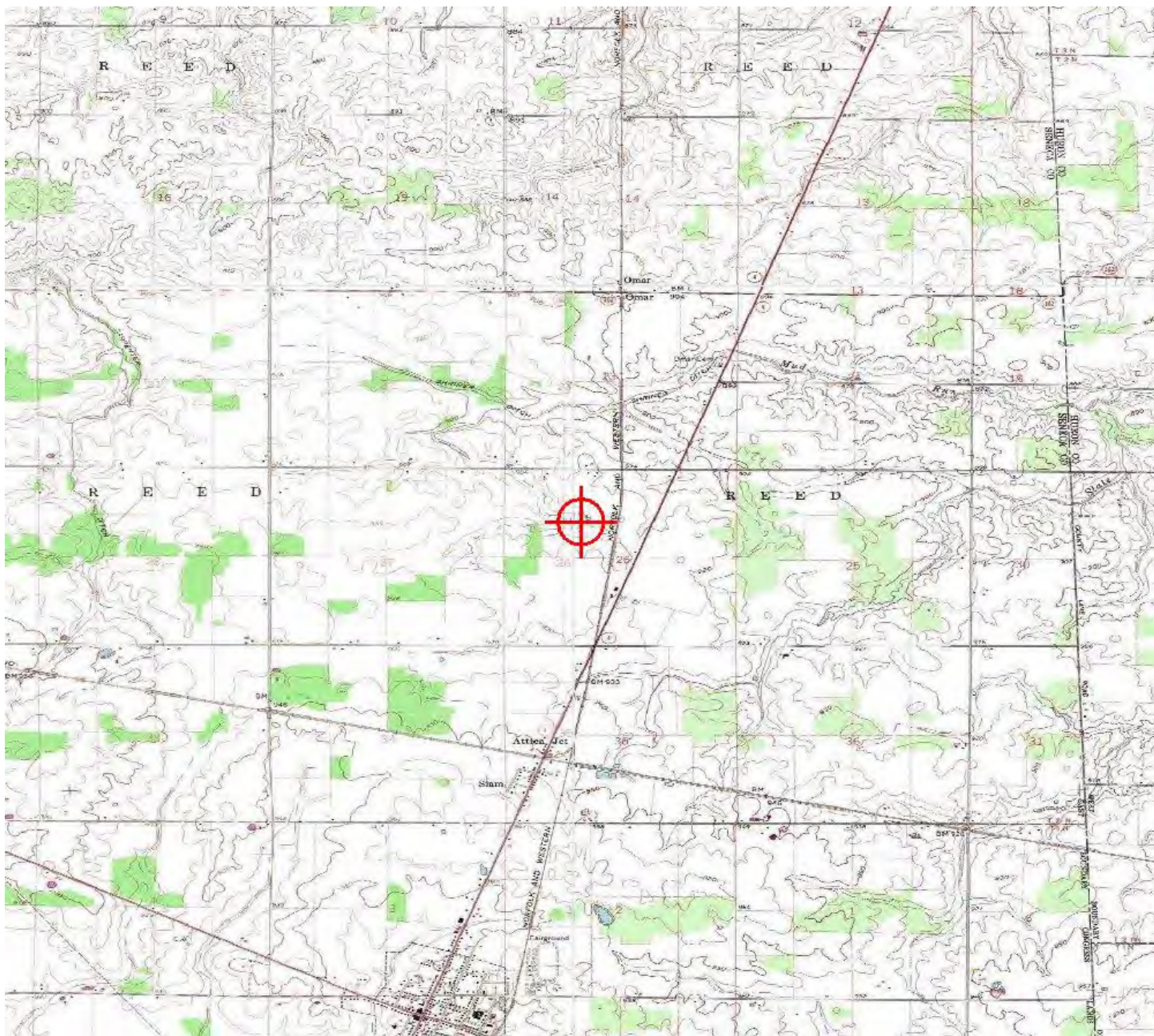
2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation

TOPO Map for ASN 2018-WTE-5667-OE





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

Aeronautical Study No.
2018-WTE-5668-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 73
Location:	Bloomfield, OH
Latitude:	41-03-35.06N NAD 83
Longitude:	82-51-19.40W
Heights:	934 feet site elevation (SE) 656 feet above ground level (AGL) 1590 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5668-OE.

Signature Control No: 368323665-410545266

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5668-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
-----	--

2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

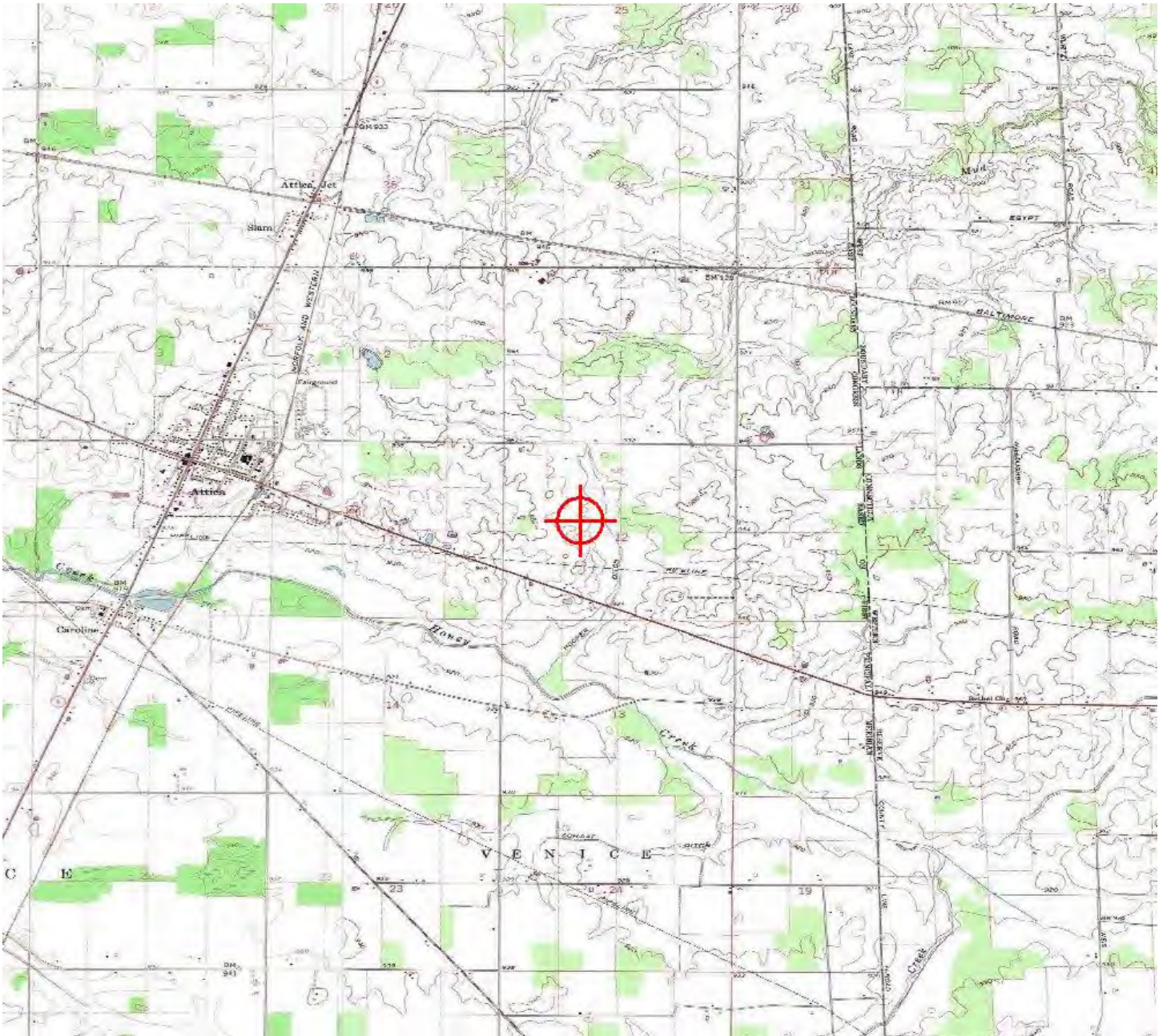
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5669-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 74
Location:	Bloomfield, OH
Latitude:	40-59-55.98N NAD 83
Longitude:	83-03-38.45W
Heights:	939 feet site elevation (SE) 656 feet above ground level (AGL) 1595 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5669-OE.

Signature Control No: 368323666-410543560

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5669-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

- a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

- b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

- c. The impact on all planned public-use airports and aeronautical facilities: None.

- d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

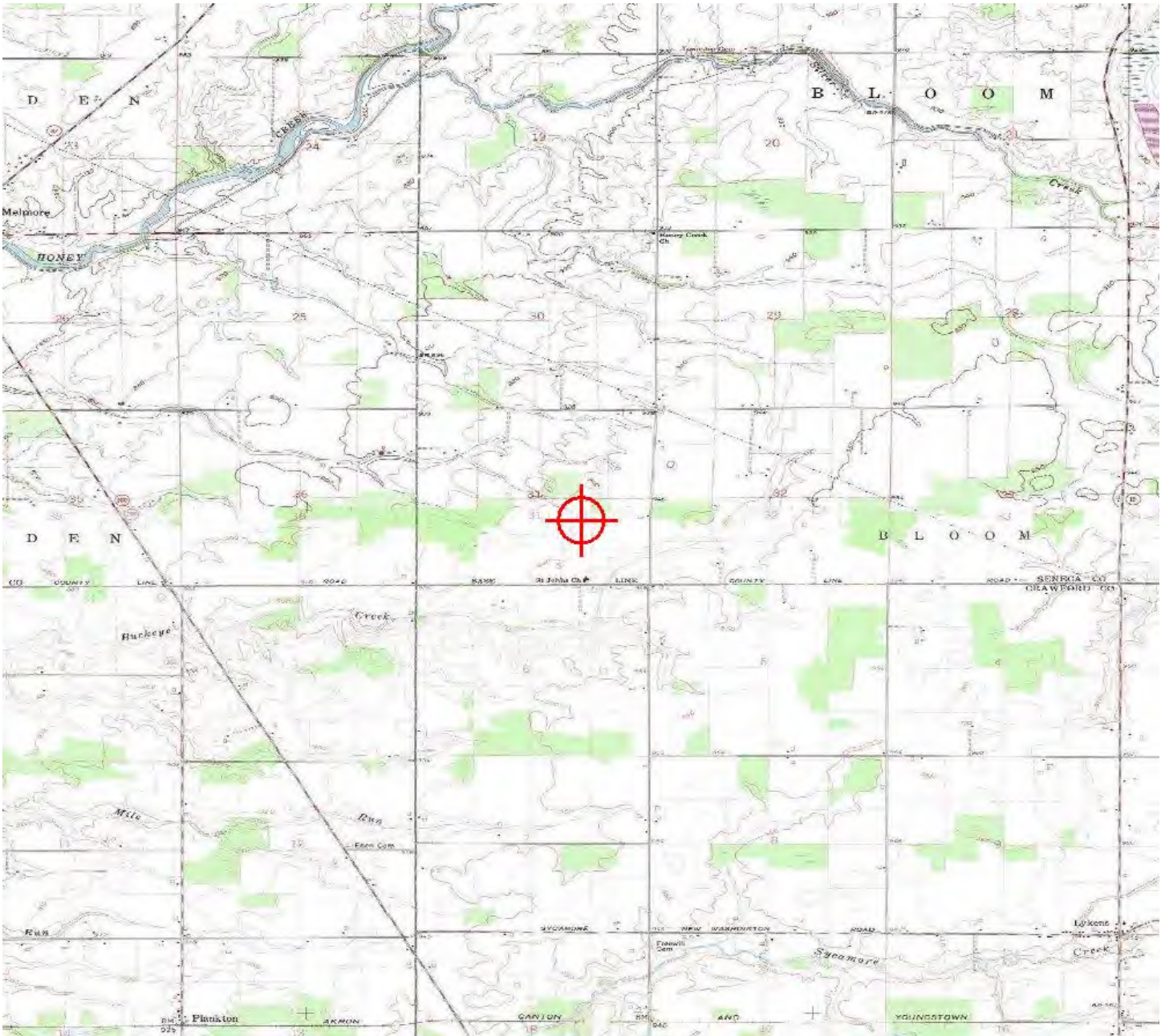
2018-WTE-5677-OE

2018-WTE-5678-OE

2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation







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

Aeronautical Study No.
2018-WTE-5670-OE

Issued Date: 07/05/2019

Peter Pawlowski
S Power
2180 South 1300 East
Salt Lake City, UT 84106

**** 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 75
Location:	Bloomfield, OH
Latitude:	41-05-05.99N NAD 83
Longitude:	83-01-57.36W
Heights:	919 feet site elevation (SE) 656 feet above ground level (AGL) 1575 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 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

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 60 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.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/05/2021 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 August 04, 2019. 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 Airspace Policy Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 14, 2019 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 Airspace Policy 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 Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-WTE-5670-OE.

Signature Control No: 368323667-410543561

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2018-WTE-5670-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace		

The proposed sPower wind turbine project near Bloomfield, OH consists of 94 wind turbines and 6 MET towers. The proposed wind turbines are assigned FAA aeronautical study number sequentially 2018-WTE-5597-OE through 2018-WTE-5690-OE.

The proposed wind turbine project lies approximately between 4.5 NM southeast to 17 NM east from the Seneca County Airport (16G), Tiffin, OH.

For the sake of efficiency, the 84 turbines in this project that are assigned aeronautical study numbers sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE have similar impacts to 14 CFR Part 77 standards and are included in this narrative.

1. LOCATION OF PROPOSED CONSTRUCTION

The 94 proposed wind turbines' described heights and locations are expressed in AGL/AMSL and latitude/longitude.

ASN	Structure Name	AGL/AMSL	LAT/LONG
2018-WTE-5597-OE	2	455 / 1380	41-05-29.19N / 83-01-16.82W
2018-WTE-5598-OE	70	490 / 1399	41-06-51.45N / 82-58-03.82W
2018-WTE-5599-OE	1	499 / 1396	41-08-07.09N / 82-55-00.19W
2018-WTE-5600-OE	3	499 / 1407	40-59-50.04N / 83-04-44.61W
2018-WTE-5601-OE	4	499 / 1440	41-04-37.00N / 82-50-50.05W
2018-WTE-5602-OE	5	499 / 1442	41-05-54.96N / 82-58-20.34W
2018-WTE-5603-OE	6	499 / 1452	41-05-10.16N / 82-56-03.28W
2018-WTE-5604-OE	7	499 / 1362	41-01-41.33N / 83-04-46.72W
2018-WTE-5605-OE	8	499 / 1447	41-05-56.84N / 82-55-26.54W
2018-WTE-5606-OE	71	499 / 1469	41-04-34.58N / 82-52-15.22W
2018-WTE-5607-OE	9	656 / 1610	41-04-34.55N / 82-53-21.36W
2018-WTE-5608-OE	10	656 / 1616	41-03-35.22N / 82-50-12.48W
2018-WTE-5609-OE	11	656 / 1564	41-07-43.91N / 82-54-52.80W
2018-WTE-5610-OE	12	656 / 1570	41-03-47.07N / 83-02-14.64W
2018-WTE-5611-OE	13	656 / 1583	41-04-16.84N / 83-02-23.92W
2018-WTE-5612-OE	14	656 / 1585	41-02-36.65N / 83-01-31.24W
2018-WTE-5613-OE	15	656 / 1600	41-05-04.64N / 82-54-18.34W
2018-WTE-5614-OE	16	656 / 1590	41-06-01.97N / 82-53-43.48W

2018-WTE-5615-OE	17	656 / 1581	41-02-30.74N / 83-02-52.16W
2018-WTE-5616-OE	18	656 / 1599	41-04-10.58N / 82-50-14.39W
2018-WTE-5617-OE	19	656 / 1580	41-06-49.52N / 82-57-11.23W
2018-WTE-5618-OE	20	656 / 1624	41-05-04.80N / 82-55-03.40W
2018-WTE-5619-OE	21	656 / 1607	41-05-59.38N / 82-56-07.11W
2018-WTE-5620-OE	22	656 / 1608	41-03-50.04N / 82-50-14.93W
2018-WTE-5621-OE	23	656 / 1592	41-06-24.01N / 82-56-46.10W
2018-WTE-5622-OE	24	656 / 1620	41-04-34.03N / 82-51-45.16W
2018-WTE-5623-OE	25	656 / 1608	41-04-17.75N / 82-51-40.59W
2018-WTE-5624-OE	26	656 / 1592	41-06-23.38N / 82-56-07.62W
2018-WTE-5625-OE	27	656 / 1563	41-02-45.22N / 83-02-58.50W
2018-WTE-5626-OE	28	656 / 1603	41-05-19.73N / 82-54-31.82W
2018-WTE-5627-OE	29	656 / 1608	41-04-12.20N / 82-51-25.12W
2018-WTE-5628-OE	30	656 / 1553	41-00-13.22N / 83-05-01.36W
2018-WTE-5629-OE	31	656 / 1608	41-04-38.18N / 82-51-15.38W
2018-WTE-5630-OE	32	656 / 1619	41-05-09.97N / 82-55-34.67W
2018-WTE-5631-OE	33	656 / 1575	41-03-45.14N / 83-03-28.80W
2018-WTE-5632-OE	34	656 / 1560	41-03-35.54N / 83-02-59.73W
2018-WTE-5633-OE	35	656 / 1552	41-03-01.71N / 83-03-32.75W
2018-WTE-5634-OE	36	656 / 1617	41-05-25.71N / 82-55-00.58W
2018-WTE-5635-OE	37	656 / 1530	41-02-35.36N / 83-05-48.22W
2018-WTE-5636-OE	38	656 / 1626	41-05-26.97N / 82-55-38.50W
2018-WTE-5637-OE	39	656 / 1586	41-06-49.69N / 82-56-54.68W
2018-WTE-5638-OE	40	656 / 1553	41-00-37.58N / 83-04-46.55W
2018-WTE-5639-OE	41	656 / 1549	41-01-30.88N / 83-04-16.35W
2018-WTE-5640-OE	42	656 / 1475	41-02-04.08N / 83-08-46.00W
2018-WTE-5641-OE	43	656 / 1596	41-05-56.44N / 82-55-45.00W
2018-WTE-5642-OE	44	656 / 1570	41-00-55.49N / 83-03-51.57W
2018-WTE-5643-OE	45	656 / 1562	41-03-47.67N / 83-03-04.25W
2018-WTE-5644-OE	46	656 / 1538	41-00-41.52N / 83-05-27.33W
2018-WTE-5645-OE	47	656 / 1560	41-00-09.20N / 83-04-41.34W
2018-WTE-5646-OE	48	656 / 1534	41-01-04.87N / 83-04-58.05W
2018-WTE-5647-OE	49	656 / 1514	41-02-46.62N / 83-06-01.81W
2018-WTE-5648-OE	50	656 / 1555	41-03-13.58N / 83-03-43.64W
2018-WTE-5649-OE	51	656 / 1483	41-02-19.86N / 83-08-45.50W
2018-WTE-5650-OE	52	656 / 1553	41-01-08.94N / 83-03-49.19W
2018-WTE-5651-OE	53	656 / 1486	41-02-01.56N / 83-08-30.21W
2018-WTE-5652-OE	54	656 / 1539	41-00-58.75N / 83-04-44.02W
2018-WTE-5653-OE	55	656 / 1530	41-01-46.08N / 83-04-16.45W
2018-WTE-5654-OE	56	656 / 1580	41-02-27.12N / 83-02-15.65W
2018-WTE-5655-OE	57	656 / 1574	41-02-51.35N / 83-01-37.82W
2018-WTE-5656-OE	58	656 / 1578	41-06-45.40N / 82-56-35.99W
2018-WTE-5657-OE	59	656 / 1556	41-01-37.31N / 83-03-37.41W
2018-WTE-5658-OE	60	656 / 1530	41-01-59.27N / 83-03-53.95W
2018-WTE-5659-OE	61	656 / 1540	41-01-55.67N / 83-03-34.27W
2018-WTE-5660-OE	63	656 / 1599	41-05-26.13N / 82-58-52.48W
2018-WTE-5661-OE	64	656 / 1555	41-04-38.12N / 82-58-19.15W
2018-WTE-5662-OE	65	656 / 1559	41-03-42.15N / 83-03-58.24W
2018-WTE-5663-OE	66	656 / 1551	41-02-52.13N / 83-04-44.53W

2018-WTE-5664-OE	67	656 / 1558	41-03-14.62N / 83-04-03.93W
2018-WTE-5665-OE	68	656 / 1533	41-03-09.18N / 83-05-14.91W
2018-WTE-5666-OE	69	656 / 1509	41-03-04.10N / 83-05-54.18W
2018-WTE-5667-OE	72	656 / 1568	41-06-19.48N / 82-52-27.56W
2018-WTE-5668-OE	73	656 / 1590	41-03-35.06N / 82-51-19.40W
2018-WTE-5669-OE	74	656 / 1595	40-59-55.98N / 83-03-38.45W
2018-WTE-5670-OE	75	656 / 1575	41-05-05.99N / 83-01-57.36W
2018-WTE-5671-OE	77	656 / 1591	41-06-00.24N / 82-59-18.85W
2018-WTE-5672-OE	78	656 / 1567	41-07-13.09N / 82-55-33.85W
2018-WTE-5673-OE	79	656 / 1603	41-05-08.60N / 82-57-03.95W
2018-WTE-5674-OE	80	656 / 1612	41-05-27.65N / 82-56-47.33W
2018-WTE-5675-OE	81	656 / 1575	41-07-09.63N / 82-55-08.01W
2018-WTE-5676-OE	82	656 / 1595	41-06-17.12N / 82-57-16.63W
2018-WTE-5677-OE	83	656 / 1592	41-04-36.76N / 82-56-08.39W
2018-WTE-5678-OE	84	656 / 1600	41-06-04.49N / 82-58-46.05W
2018-WTE-5679-OE	85	656 / 1579	41-00-36.93N / 83-03-54.08W
2018-WTE-5680-OE	86	656 / 1527	41-02-02.50N / 83-06-22.76W
2018-WTE-5681-OE	87	656 / 1587	41-06-17.14N / 82-53-43.83W
2018-WTE-5682-OE	88	656 / 1584	41-06-20.44N / 82-58-19.84W
2018-WTE-5683-OE	89	656 / 1595	41-04-34.26N / 82-55-47.97W
2018-WTE-5684-OE	90	656 / 1525	41-00-47.77N / 83-06-01.58W
2018-WTE-5685-OE	91	656 / 1499	41-02-57.44N / 83-06-25.86W
2018-WTE-5686-OE	92	656 / 1528	41-00-45.39N / 83-05-43.68W
2018-WTE-5687-OE	93	656 / 1603	41-04-36.00N / 83-01-15.41W
2018-WTE-5688-OE	94	656 / 1616	41-05-27.04N / 83-00-07.07W
2018-WTE-5689-OE	95	656 / 1604	41-05-11.45N / 83-00-34.33W
2018-WTE-5690-OE	96	656 / 1608	41-05-24.58N / 82-58-20.87W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

- a. Section 77.17(a)(1): The surface above 499 feet AGL, in which an object would be an obstruction to aircraft operating under VFR conditions in the en route phase of flight established under 77.17, 77.19, or 77.23.

The 84 proposed wind turbines with ASNs sequentially 2018-WTE-5607-OE through 2018-WTE-5690-OE exceed this surface by 157 feet.

- b. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

ASN	Exceeds 16G A(2) by (feet)
2018-WTE-5608-OE	225
2018-WTE-5640-OE	289

2018-WTE-5647-OE	173
2018-WTE-5649-OE	308
2018-WTE-5651-OE	273
2018-WTE-5666-OE	178
2018-WTE-5685-OE	208

ASN	Exceeds Willard Airport (8G1) A(2) by (feet)
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2018-WTE-5616-OE	189
2018-WTE-5620-OE	208

b. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude.

The following proposed structures would have the this effect: Erie-Ottawa Intl (PCW) Port Clinton OH. NDB RWY 27 Minimum Safe Altitude (MSA) 180 inbound clockwise to 090 inbound, increase from 2500 to 2700 AMSL.

2018-WTE-5607-OE
 2018-WTE-5608-OE
 2018-WTE-5609-OE
 2018-WTE-5610-OE
 2018-WTE-5611-OE
 2018-WTE-5613-OE
 2018-WTE-5614-OE
 2018-WTE-5616-OE
 2018-WTE-5617-OE
 2018-WTE-5618-OE
 2018-WTE-5619-OE
 2018-WTE-5620-OE
 2018-WTE-5621-OE
 2018-WTE-5622-OE
 2018-WTE-5623-OE
 2018-WTE-5624-OE
 2018-WTE-5626-OE
 2018-WTE-5627-OE
 2018-WTE-5629-OE
 2018-WTE-5630-OE
 2018-WTE-5631-OE
 2018-WTE-5632-OE
 2018-WTE-5634-OE
 2018-WTE-5636-OE
 2018-WTE-5637-OE
 2018-WTE-5641-OE
 2018-WTE-5643-OE
 2018-WTE-5660-OE
 2018-WTE-5661-OE

2018-WTE-5662-OE
2018-WTE-5667-OE
2018-WTE-5668-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: Oberlin OH ZOB Cleveland ARTCC Chart ZOB_TAV_2018 Minimum Vectoring Altitude (MVA) increase Sector CJOC46 MVA from 2500 to 2700 AMSL.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE
2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5641-OE
2018-WTE-5643-OE

2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5650-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

The following proposed structures would have the this effect: TOL Toledo ATCT/TRACON Chart.
TOL_TOL_MVA_2017 Minimum Vectoring Altitude (MVA) increase Sector C MVA from 2400 to 2500
AMSL.

2018-WTE-5640-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

There are no effects on the VFR traffic pattern.

The effects on any existing or proposed arrival, departure, or en route IFR/VFR minimum flight altitudes: No significant adverse effect.: the proposed wind turbines described in Section 2 of this narrative would exceed Part 77 Section 77.17(a)(1) by 157 feet and would exceed Section 77.17(a)(2) for 16G by a maximum of 308 feet as described in section 2 of this narrative. No issues were raised during the public comment period.

Effects on any airspace and routes used by the military. All of the proposed structures would be located within the confines or near a military training route or military training area. The United States Department of Defense has determined this would not create a substantial adverse effect on their operations at this time. All structures associated with the project are located in an area where affordable and feasible actions can be taken by the Air Force to mitigate the project's impacts to the Air Force mission.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: See section 2 of this narrative. No significant adverse effect. Affected Air Traffic facilities have determined no significant adverse effect at this time. Affected procedures will be adjusted upon notification of construction of the proposed structures.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

RADAR

Analysis indicates that the proposed turbines in this project would be in the line of sight for the Mansfield, OH Airport Surveillance Radar-8 (ASR-8), the Toledo, OH Airport Surveillance Radar-9 (ASR-9) the Brecksville, OH (QBD) Common Air Route Surveillance Radar (CARSR however, Air Traffic has determined this would not create a substantial adverse impact on their operations at this time.

The Seneca County Airport (16G) Airport Master Record can be viewed/downloaded <http://www.gcr1.com/5010web/airport.cfm?Site=16G> . It states there are 25 single-engine, 9 multi-engine, 1 jet, 0 helicopter, 0 military, 0 ultra- light and 0 glider aircraft based there with 60,165 operations for the 12 months ending 4 October 2018 (latest information).

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 12 April 2019 and public comment period closed on 19 May 2019. No comments were received by 19 May 2019.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

The FAA has determined the proposed construction would not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

6. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no substantial effect on any existing or proposed arrival or departure VFR operations or procedures. Aeronautical study found that the proposed structures would not conflict with airspace required to conduct normal VFR traffic pattern operations at any other known public use or military airport. At 656 feet above ground level, the proposed structures would not have a substantial adverse effect on VFR en route flight operations as there were no issues raised during the public comment period. The IFR effects can be mitigated by adjusting the affected airspace and it was determined this would not have a substantial adverse effect. No other IFR or VFR effects could be found.

The proposed structures must be appropriately obstruction marked and/or lighted to make them more conspicuous to airmen.

7. CONDITIONS

For the following studies as identified by their ASN, at least 60 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE
2018-WTE-5609-OE
2018-WTE-5610-OE
2018-WTE-5611-OE
2018-WTE-5612-OE
2018-WTE-5613-OE
2018-WTE-5614-OE
2018-WTE-5615-OE
2018-WTE-5617-OE
2018-WTE-5618-OE
2018-WTE-5619-OE
2018-WTE-5625-OE
2018-WTE-5628-OE
2018-WTE-5630-OE
2018-WTE-5631-OE
2018-WTE-5632-OE
2018-WTE-5633-OE
2018-WTE-5634-OE
2018-WTE-5636-OE
2018-WTE-5637-OE

2018-WTE-5638-OE
2018-WTE-5639-OE
2018-WTE-5640-OE
2018-WTE-5641-OE
2018-WTE-5643-OE
2018-WTE-5644-OE
2018-WTE-5645-OE
2018-WTE-5646-OE
2018-WTE-5647-OE
2018-WTE-5648-OE
2018-WTE-5649-OE
2018-WTE-5650-OE
2018-WTE-5651-OE
2018-WTE-5652-OE
2018-WTE-5653-OE
2018-WTE-5654-OE
2018-WTE-5655-OE
2018-WTE-5656-OE
2018-WTE-5657-OE
2018-WTE-5658-OE
2018-WTE-5659-OE
2018-WTE-5660-OE
2018-WTE-5661-OE
2018-WTE-5662-OE
2018-WTE-5663-OE
2018-WTE-5664-OE
2018-WTE-5665-OE
2018-WTE-5666-OE
2018-WTE-5667-OE
2018-WTE-5669-OE
2018-WTE-5670-OE
2018-WTE-5671-OE
2018-WTE-5672-OE
2018-WTE-5673-OE
2018-WTE-5674-OE
2018-WTE-5675-OE
2018-WTE-5676-OE
2018-WTE-5677-OE
2018-WTE-5678-OE
2018-WTE-5679-OE
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5684-OE
2018-WTE-5685-OE
2018-WTE-5686-OE
2018-WTE-5687-OE
2018-WTE-5688-OE

2018-WTE-5689-OE

2018-WTE-5690-OE

For the following studies as identified by their ASN, at least 10 days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (<http://oeaaa.faa.gov>). This actual construction notification will be used to update published instrument flight procedures.

2018-WTE-5607-OE

2018-WTE-5608-OE

2018-WTE-5609-OE

2018-WTE-5610-OE

2018-WTE-5611-OE

2018-WTE-5613-OE

2018-WTE-5614-OE

2018-WTE-5616-OE

2018-WTE-5617-OE

2018-WTE-5618-OE

2018-WTE-5619-OE

2018-WTE-5620-OE

2018-WTE-5621-OE

2018-WTE-5622-OE

2018-WTE-5623-OE

2018-WTE-5624-OE

2018-WTE-5626-OE

2018-WTE-5627-OE

2018-WTE-5629-OE

2018-WTE-5630-OE

2018-WTE-5631-OE

2018-WTE-5632-OE

2018-WTE-5634-OE

2018-WTE-5636-OE

2018-WTE-5637-OE

2018-WTE-5641-OE

2018-WTE-5643-OE

2018-WTE-5660-OE

2018-WTE-5661-OE

2018-WTE-5662-OE

2018-WTE-5667-OE

2018-WTE-5668-OE

2018-WTE-5670-OE

2018-WTE-5671-OE

2018-WTE-5672-OE

2018-WTE-5673-OE

2018-WTE-5674-OE

2018-WTE-5675-OE

2018-WTE-5676-OE

2018-WTE-5677-OE

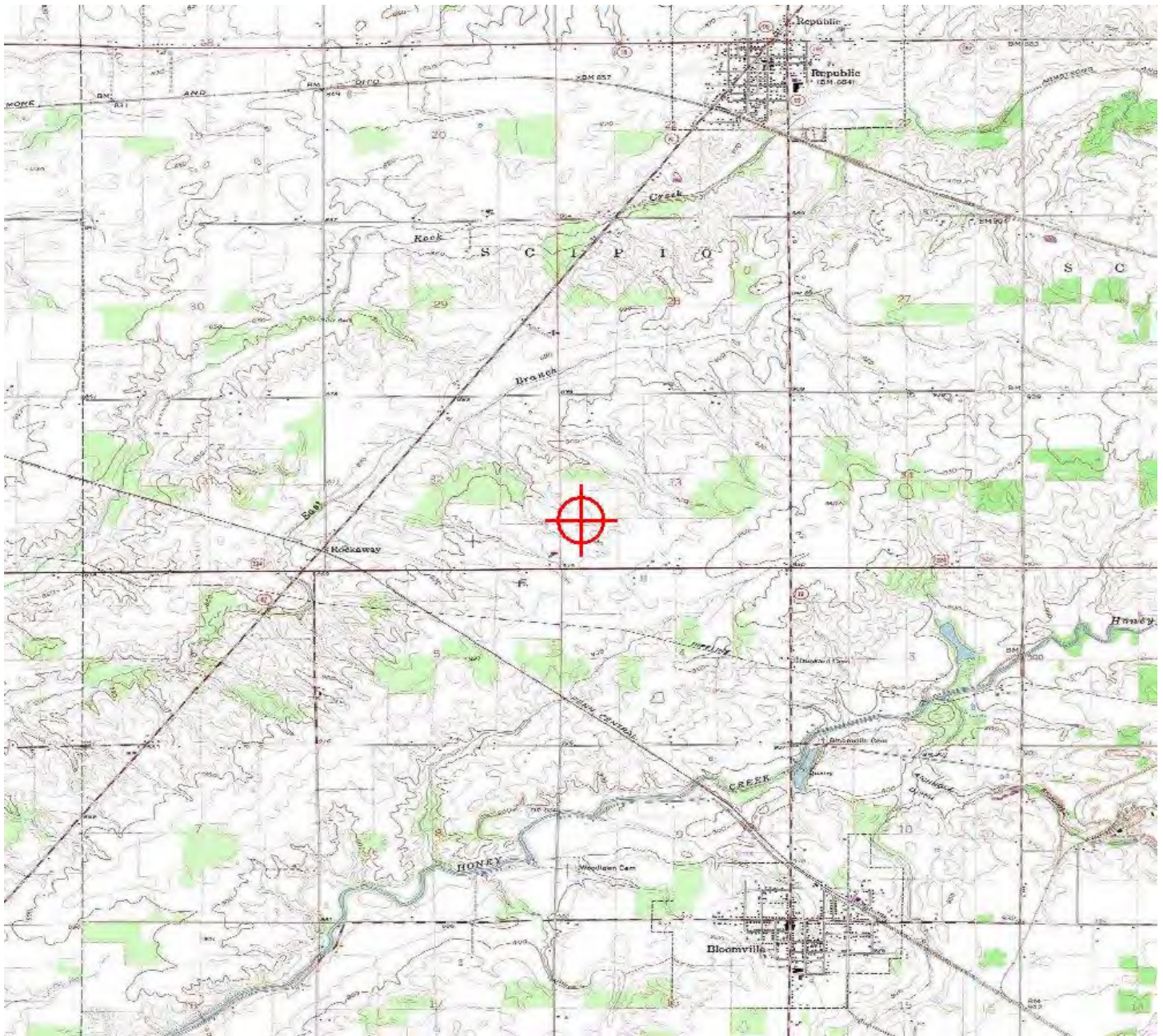
2018-WTE-5678-OE

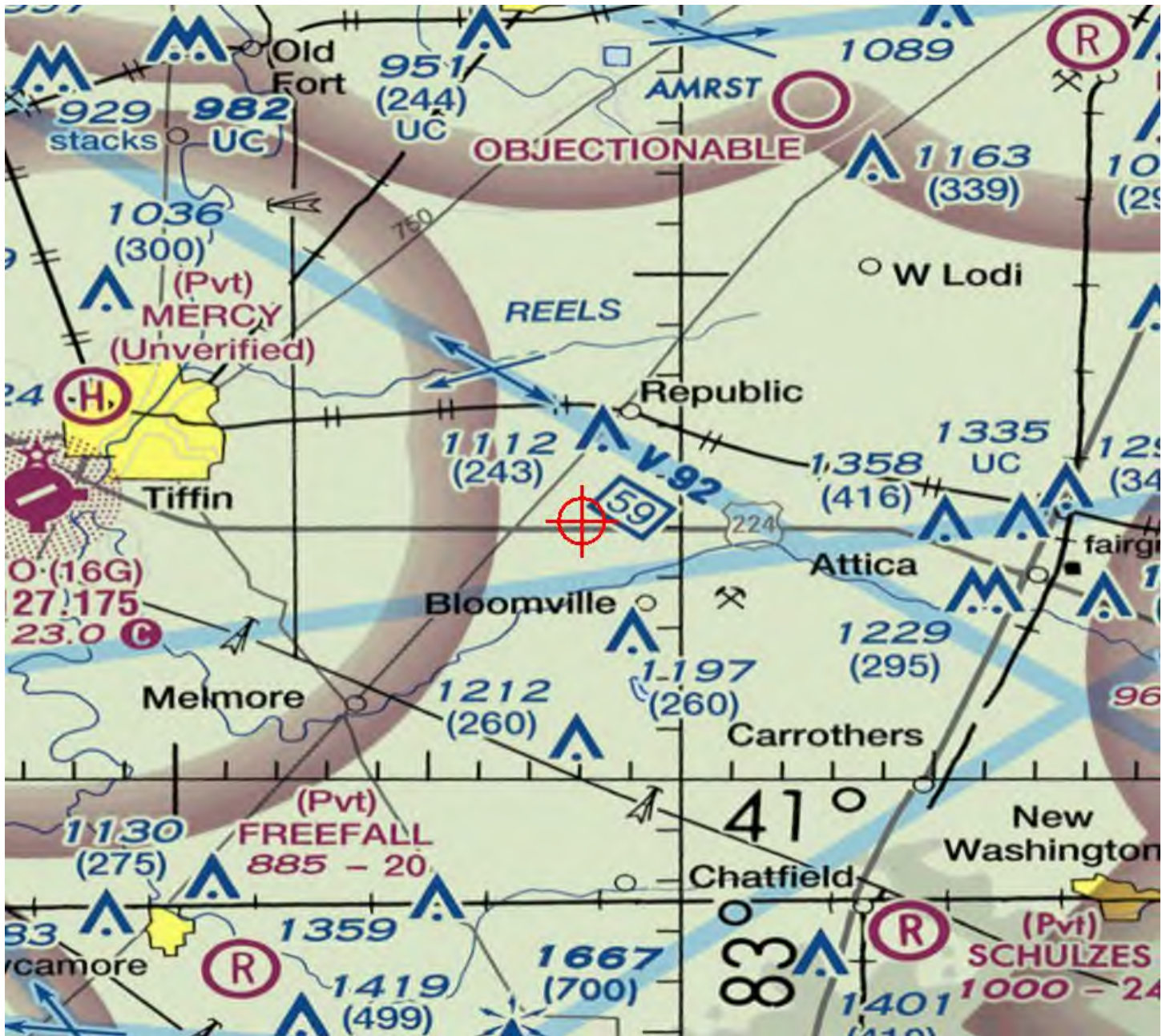
2018-WTE-5680-OE
2018-WTE-5681-OE
2018-WTE-5682-OE
2018-WTE-5683-OE
2018-WTE-5687-OE
2018-WTE-5688-OE
2018-WTE-5689-OE
2018-WTE-5690-OE

Within five days after each structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (<http://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.

OBSTRUCTION MARKING AND LIGHTING NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation

TOPO Map for ASN 2018-WTE-5670-OE





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Case No(s). 18-0488-EL-BGN

Summary: Correspondence of Seneca Wind, LLC Submitting Determination of No Hazard Notices from the Federal Aviation Administration - Part 2 of 3 electronically filed by Teresa Orahod on behalf of Devin D. Parram