



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

Aeronautical Study No.
 2017-WTE-10098-OE
 Prior Study No.
 2017-WTE-865-OE

Issued Date: 05/22/2018

Elizabeth King
 Ball Hill Wind Energy, LLC
 11101 W 120th Ave.
 Suite 400
 Broomfield, CO 80021

**** 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 T2
 Location: Hamlet, NY
 Latitude: 42-24-39.61N NAD 83
 Longitude: 79-10-12.10W
 Heights: 1560 feet site elevation (SE)
 599 feet above ground level (AGL)
 2159 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-10098-OE.

Signature Control No: 351579781-365924290

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-10098-OE

Abbreviations:

AGL, Above Ground Level

AMSL, Above Mean Sea Level

ASN, Aeronautical Study Number

CFR, Code of Federal Regulations

MVA, Minimum Vectoring Altitude

NEH, No Effect Height

NM, Nautical Mile

RWY, Runway

TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

All four of the proposed turbines, ASN's 2017-WTE-10098 thru 10101-OE, exceed this standard by 100 feet.

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-10098-OE would exceed the RWY 15 Diverse A departure area by 499 feet, requiring TAKE OFF AND MINIMUM (OBSTACLE) DEPARTURE PROCEDURES RWY 15, standard with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL. The NEH is 2,092 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-10098-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599 feet AGL, the structures would exceed altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

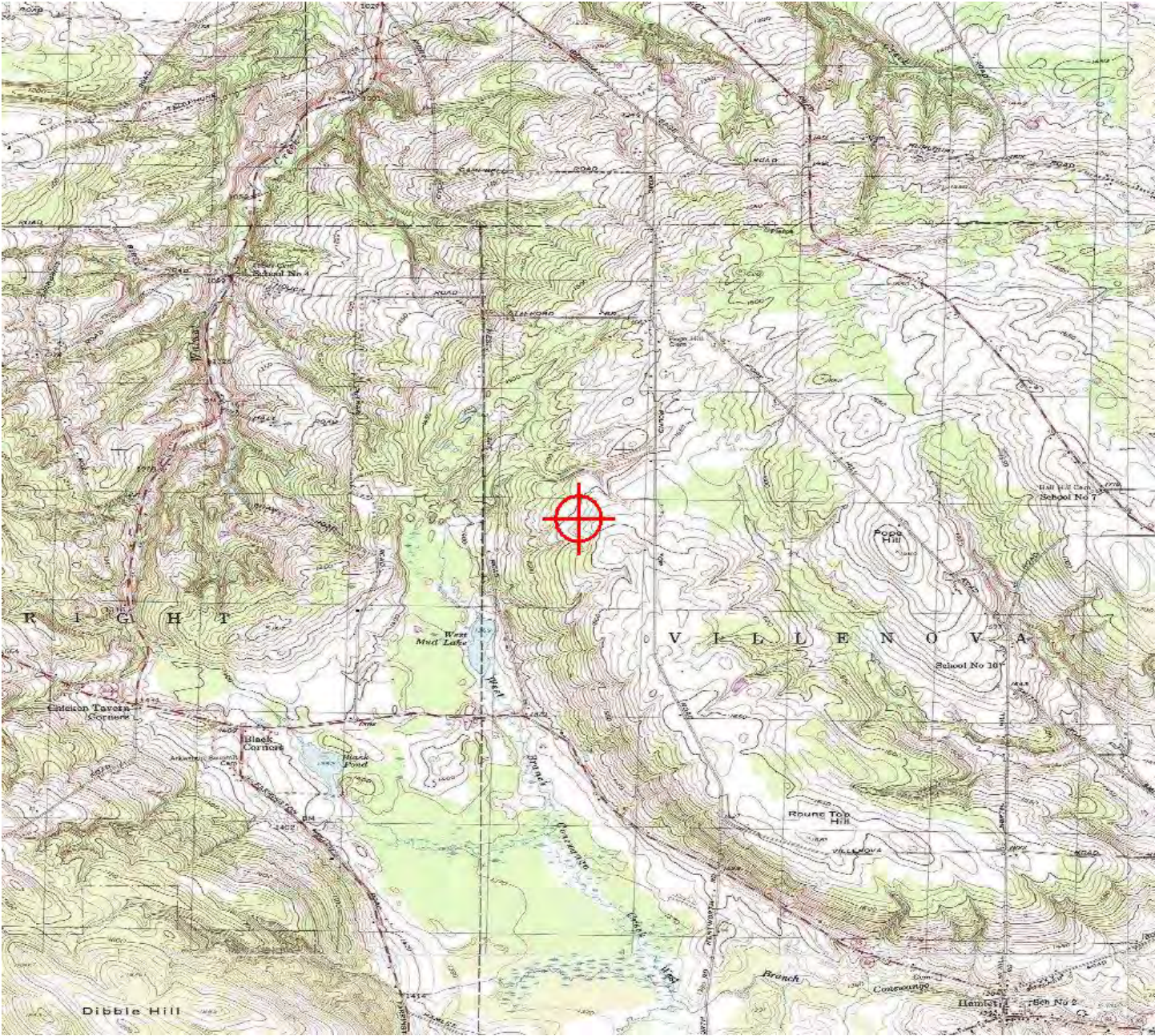
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-10098-OE







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Aeronautical Study No.
2017-WTE-866-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T3
Location:	Hamlet, NY
Latitude:	42-22-44.70N NAD 83
Longitude:	79-08-22.89W
Heights:	1604 feet site elevation (SE) 599 feet above ground level (AGL) 2203 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 1, 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.

This determination expires on 11/22/2019 unless:

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This determination becomes final on July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-866-OE.

Signature Control No: 321543801-365922597

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-866-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

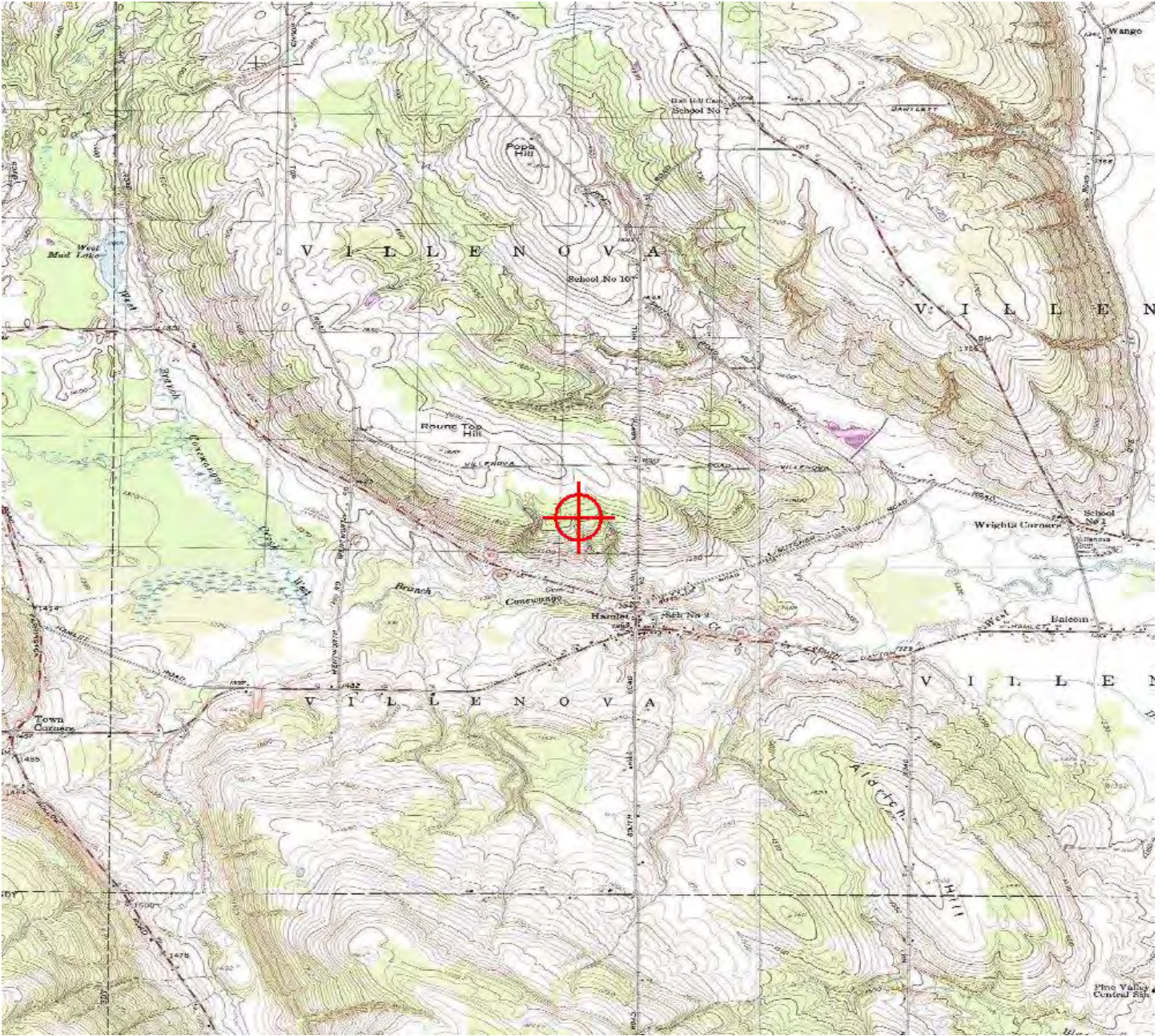
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

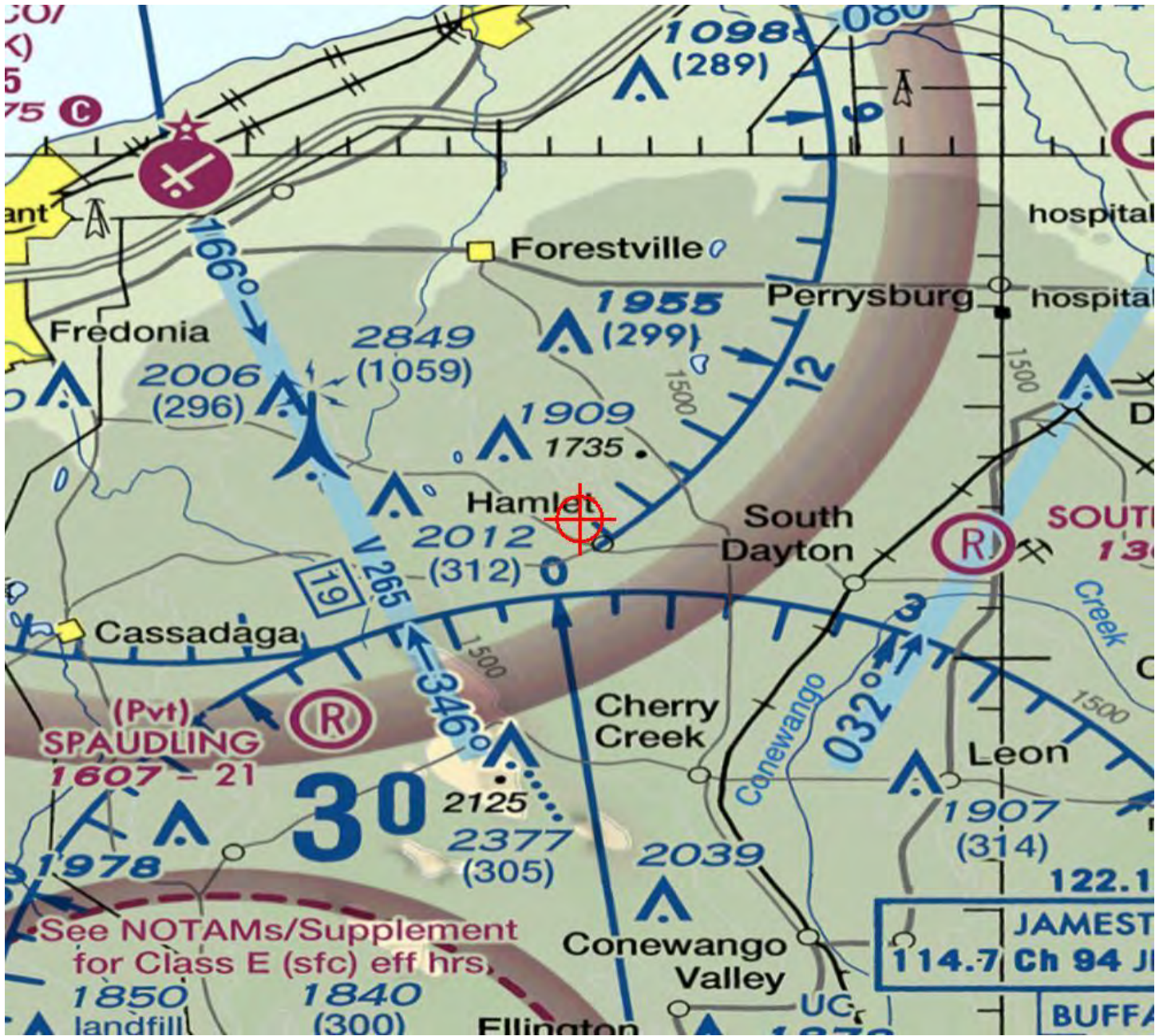
Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-866-OE



Sectional Map for ASN 2017-WTE-866-OE





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Aeronautical Study No.
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 Prior Study No.
 2017-WTE-867-OE

Issued Date: 05/22/2018

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

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Structure: Wind Turbine T4
 Location: Hamlet, NY
 Latitude: 42-23-07.83N NAD 83
 Longitude: 79-08-27.63W
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 599 feet above ground level (AGL)
 2234 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:

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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.

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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.

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Signature Control No: 351579782-365924292

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-10099-OE

Abbreviations:

AGL, Above Ground Level

AMSL, Above Mean Sea Level

ASN, Aeronautical Study Number

CFR, Code of Federal Regulations

MVA, Minimum Vectoring Altitude

NEH, No Effect Height

NM, Nautical Mile

RWY, Runway

TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

All four of the proposed turbines, ASN's 2017-WTE-10098 thru 10101-OE, exceed this standard by 100 feet.

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-10098-OE would exceed the RWY 15 Diverse A departure area by 499 feet, requiring TAKE OFF AND MINIMUM (OBSTACLE) DEPARTURE PROCEDURES RWY 15, standard with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL. The NEH is 2,092 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-10098-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599 feet AGL, the structures would exceed altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

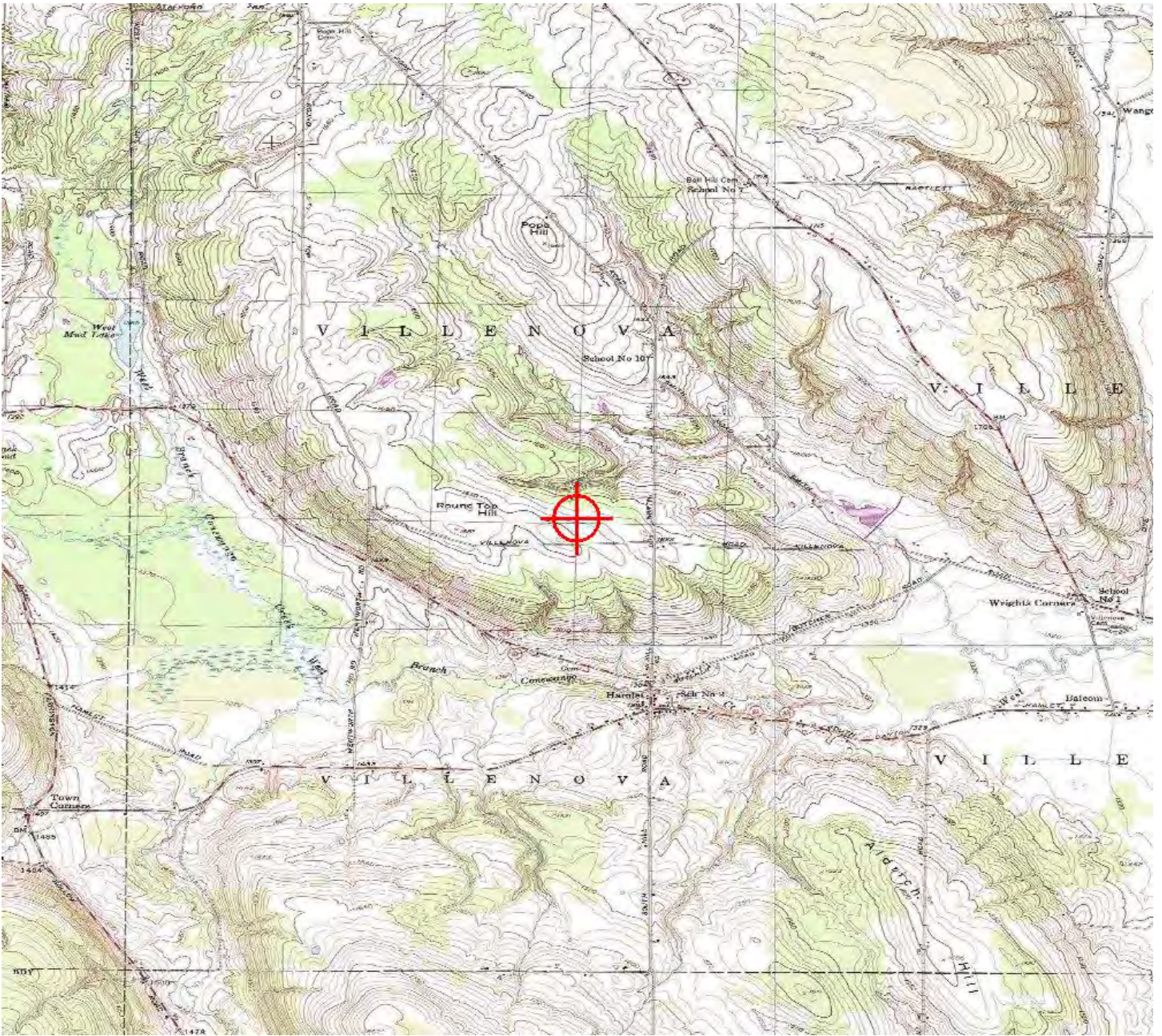
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-10099-OE







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

Aeronautical Study No.
2017-WTE-868-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T5
Location: Hamlet, NY
Latitude: 42-23-22.04N NAD 83
Longitude: 79-08-44.04W
Heights: 1623 feet site elevation (SE)
599 feet above ground level (AGL)
2222 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-868-OE.

Signature Control No: 321543804-365922605

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-868-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

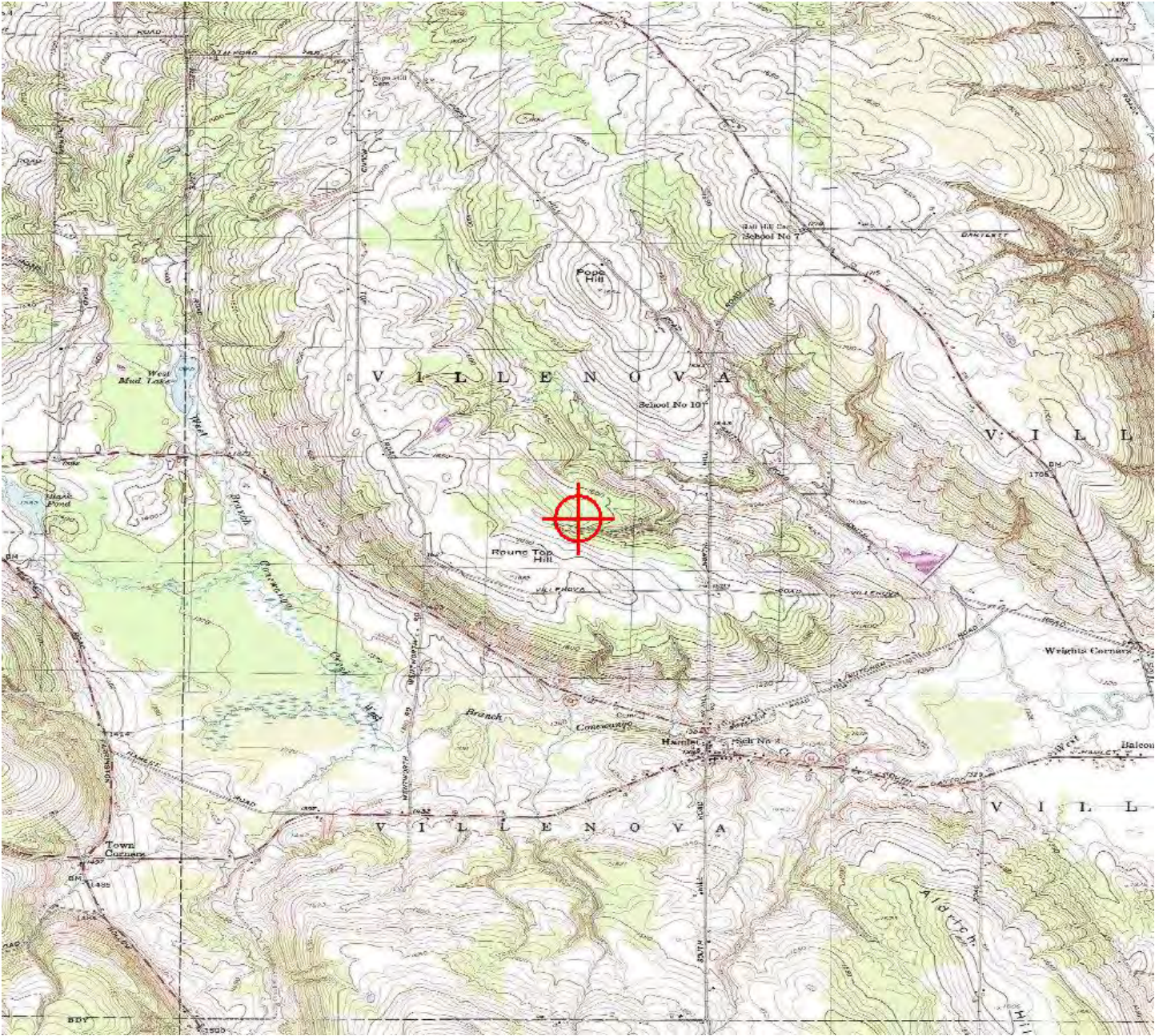
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-868-OE







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

Aeronautical Study No.
2017-WTE-869-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T6
Location:	Hamlet, NY
Latitude:	42-23-30.75N NAD 83
Longitude:	79-08-55.38W
Heights:	1642 feet site elevation (SE) 599 feet above ground level (AGL) 2241 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-869-OE.

Signature Control No: 321543805-365922598

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-869-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

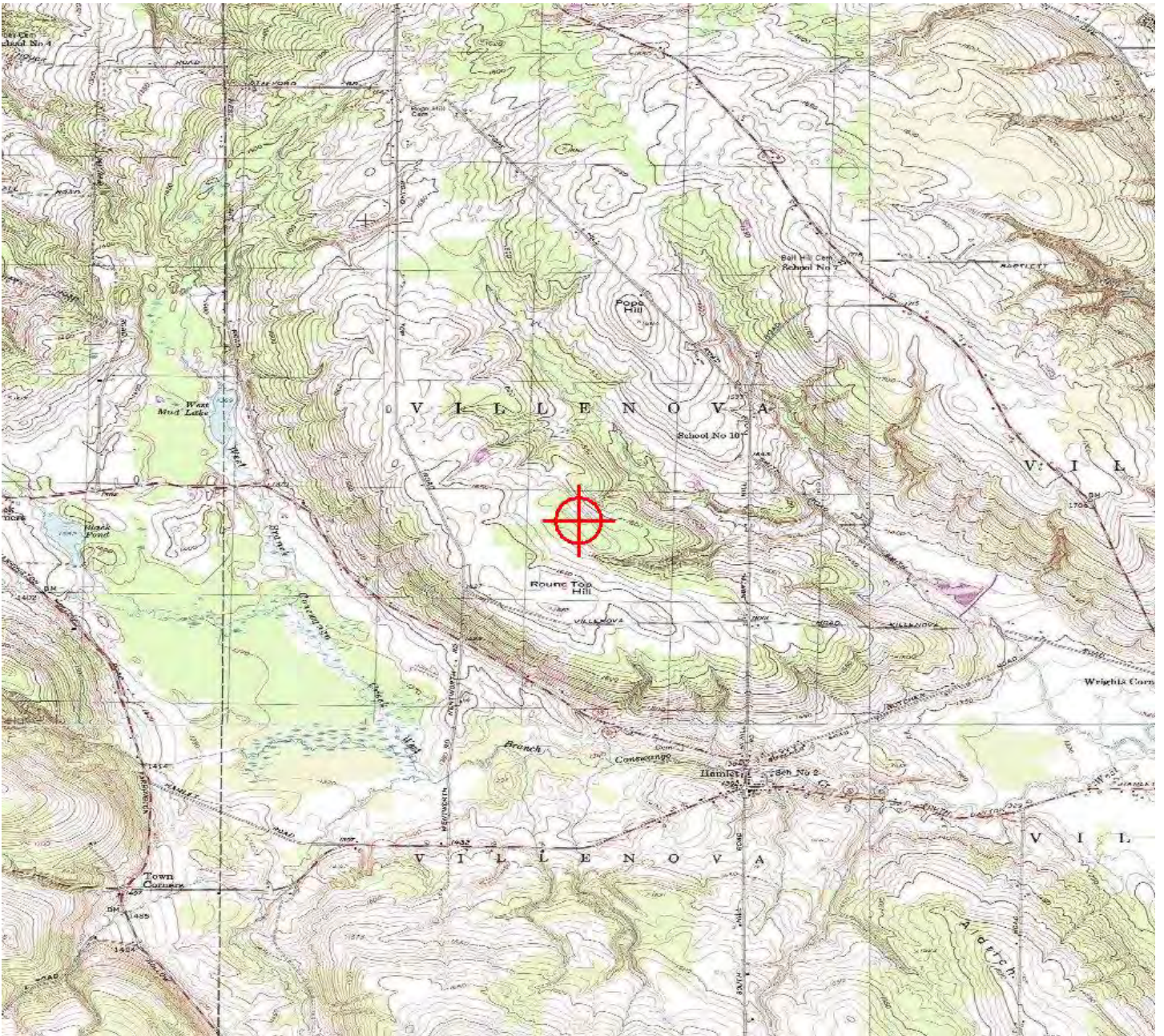
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-869-OE







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

Aeronautical Study No.
2017-WTE-870-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T7
Location: Hamlet, NY
Latitude: 42-23-49.61N NAD 83
Longitude: 79-09-03.26W
Heights: 1599 feet site elevation (SE)
599 feet above ground level (AGL)
2198 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-870-OE.

Signature Control No: 321543806-365922599

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-870-OE

Abbreviations:

AGL, Above Ground Level

AMSL, Above Mean Sea Level

ASR, Airport Surveillance Radar

ASN, Aeronautical Study Number

CFR, Code of Federal Regulations

GPS, Global Positioning System

NA, Not Authorized

NEH, No Effect Height

NM, Nautical Mile

RNAV, Area Navigation

RWY, Runway

TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-870-OE







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

Aeronautical Study No.
2017-WTE-10100-OE
Prior Study No.
2017-WTE-871-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T8
Location:	Hamlet, NY
Latitude:	42-24-04.91N NAD 83
Longitude:	79-09-16.90W
Heights:	1605 feet site elevation (SE) 599 feet above ground level (AGL) 2204 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-10100-OE.

Signature Control No: 351579783-365924291

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-10100-OE

Abbreviations:

AGL, Above Ground Level

AMSL, Above Mean Sea Level

ASN, Aeronautical Study Number

CFR, Code of Federal Regulations

MVA, Minimum Vectoring Altitude

NEH, No Effect Height

NM, Nautical Mile

RWY, Runway

TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

All four of the proposed turbines, ASN's 2017-WTE-10098 thru 10101-OE, exceed this standard by 100 feet.

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-10098-OE would exceed the RWY 15 Diverse A departure area by 499 feet, requiring TAKE OFF AND MINIMUM (OBSTACLE) DEPARTURE PROCEDURES RWY 15, standard with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL. The NEH is 2,092 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-10098-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599 feet AGL, the structures would exceed altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-10100-OE







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

Aeronautical Study No.
2017-WTE-872-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T9
Location: Hamlet, NY
Latitude: 42-23-56.55N NAD 83
Longitude: 79-08-28.99W
Heights: 1550 feet site elevation (SE)
599 feet above ground level (AGL)
2149 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 1, 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.

This determination expires on 11/22/2019 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.

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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.

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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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-872-OE.

Signature Control No: 321543808-365922607

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-872-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

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ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

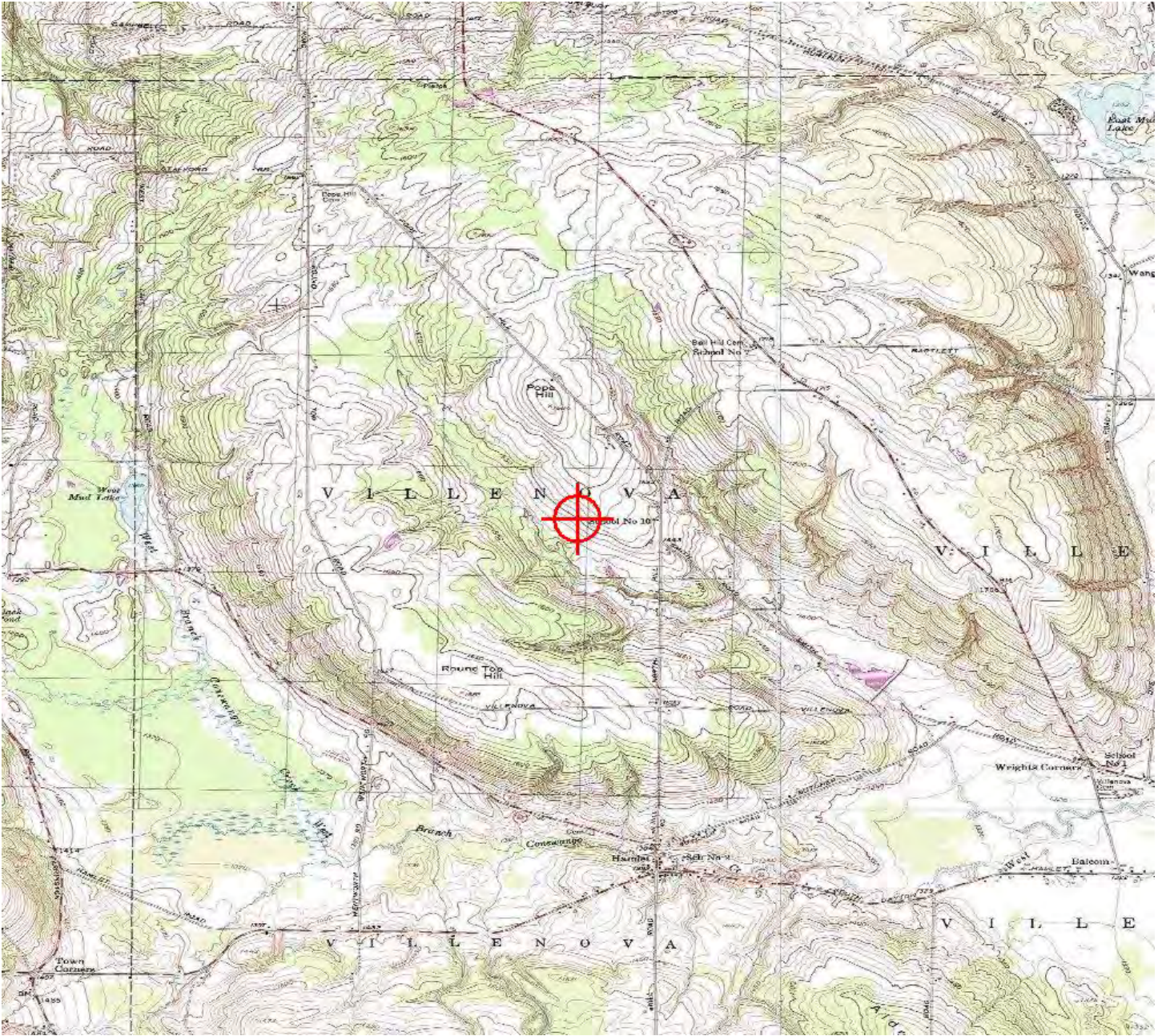
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-872-OE



Sectional Map for ASN 2017-WTE-872-OE





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

Aeronautical Study No.
2017-WTE-873-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T11
Location: Hamlet, NY
Latitude: 42-24-29.12N NAD 83
Longitude: 79-08-56.63W
Heights: 1590 feet site elevation (SE)
599 feet above ground level (AGL)
2189 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-873-OE.

Signature Control No: 321543809-365922601

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-873-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

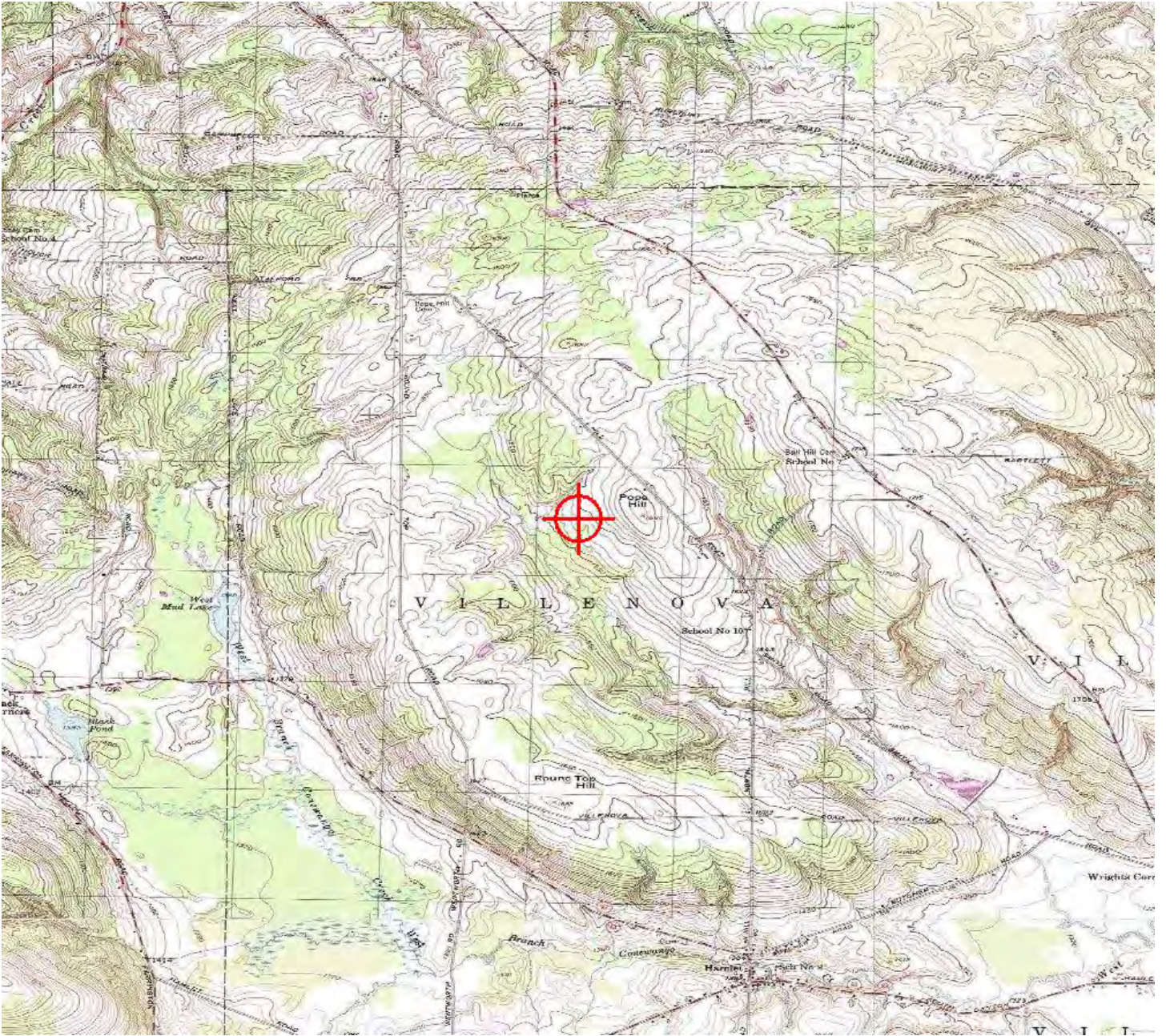
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-873-OE







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

Aeronautical Study No.
2017-WTE-874-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T13
Location: Hamlet, NY
Latitude: 42-23-52.64N NAD 83
Longitude: 79-07-11.91W
Heights: 1643 feet site elevation (SE)
599 feet above ground level (AGL)
2242 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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.

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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

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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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-874-OE.

Signature Control No: 321543810-365922600

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-874-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

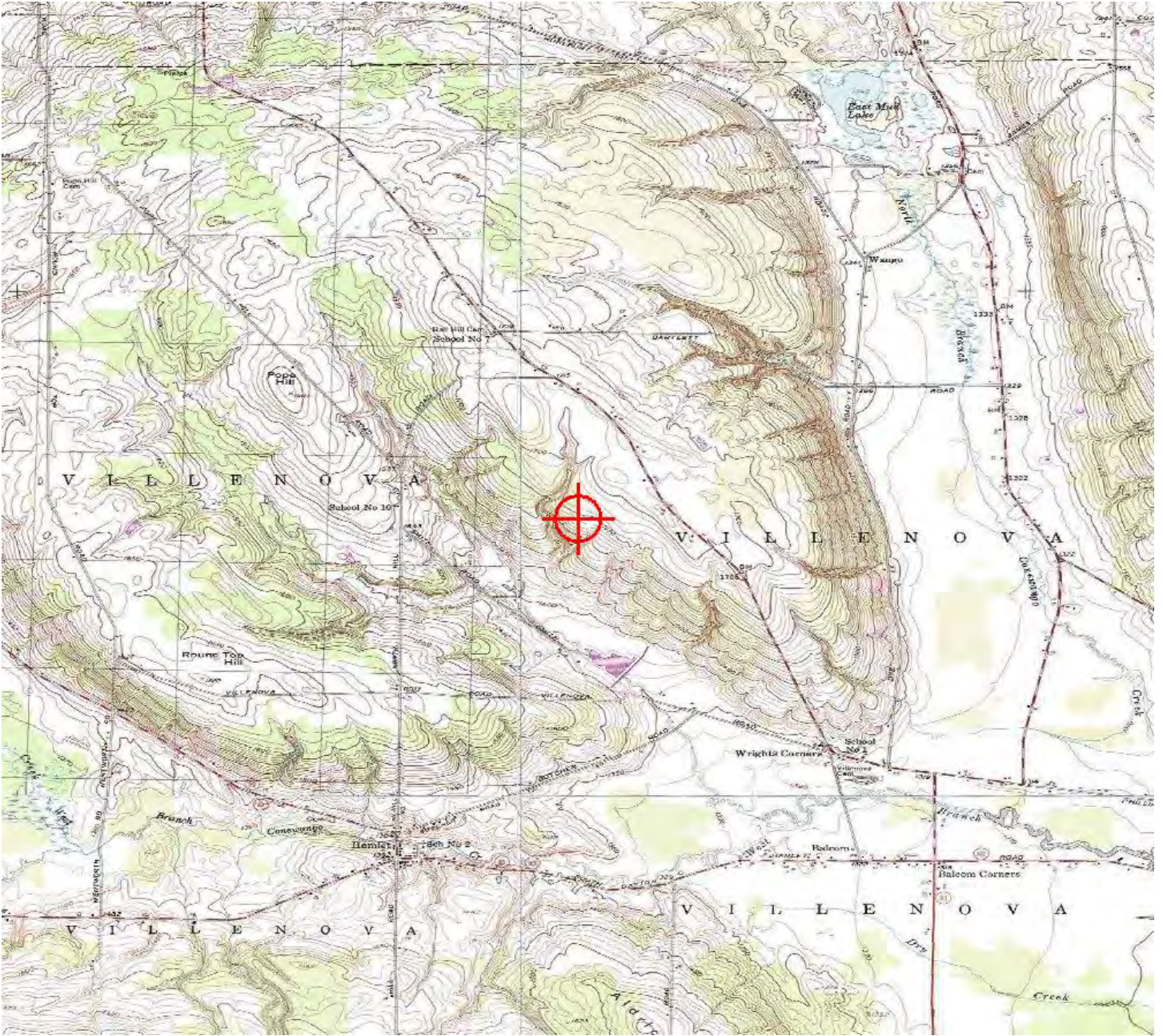
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-874-OE







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

Aeronautical Study No.
2017-WTE-875-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T14
Location: Hamlet, NY
Latitude: 42-24-11.70N NAD 83
Longitude: 79-07-21.70W
Heights: 1698 feet site elevation (SE)
599 feet above ground level (AGL)
2297 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 1, 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.

This determination expires on 11/22/2019 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.
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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 June 21, 2018. 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 July 01, 2018 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.

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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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-875-OE.

Signature Control No: 321543811-365922595

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-875-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

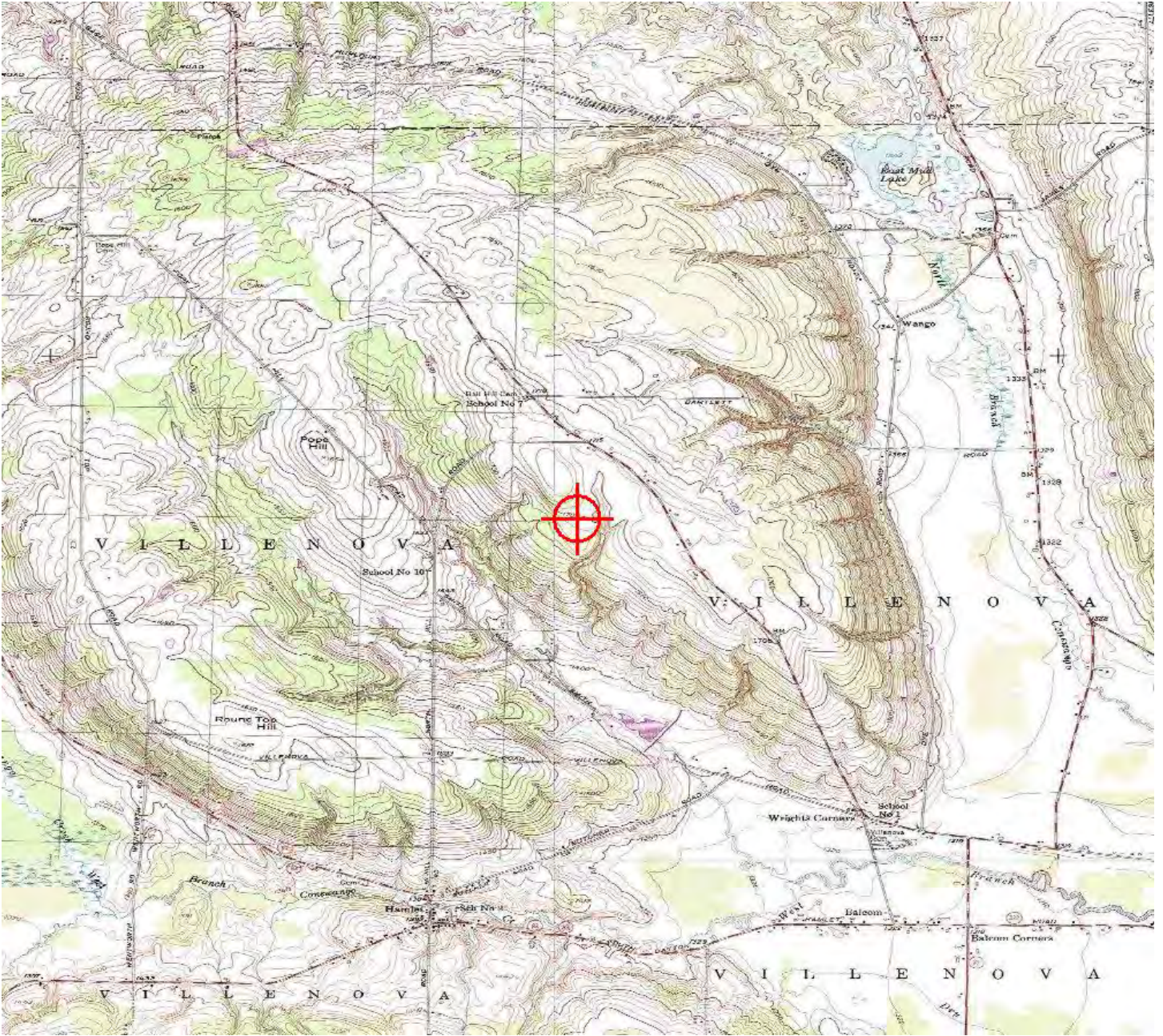
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-875-OE



Sectional Map for ASN 2017-WTE-875-OE





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

Aeronautical Study No.
 2017-WTE-876-OE

Issued Date: 06/04/2018

Elizabeth King
 Ball Hill Wind Energy, LLC
 11101 W 120th Ave.
 Suite 400
 Broomfield, CO 80021

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ** (CORRECTION)**

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 T15
 Location: Hamlet, NY
 Latitude: 42-24-24.45N NAD 83
 Longitude: 79-07-28.49W
 Heights: 1733 feet site elevation (SE)
 566 feet above ground level (AGL)
 2299 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-876-OE.

Signature Control No: 321543812-366767830

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-876-OE

Abbreviations:

AGL, Above Ground Level

AMSL, Above Mean Sea Level

ASR, Airport Surveillance Radar

ASN, Aeronautical Study Number

CFR, Code of Federal Regulations

GPS, Global Positioning System

NA, Not Authorized

NEH, No Effect Height

NM, Nautical Mile

RNAV, Area Navigation

RWY, Runway

TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

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

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

TOPO Map for ASN 2017-WTE-876-OE







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

Aeronautical Study No.
 2017-WTE-877-OE

Issued Date: 05/22/2018

Elizabeth King
 Ball Hill Wind Energy, LLC
 11101 W 120th Ave.
 Suite 400
 Broomfield, CO 80021

**** 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 T16
 Location: Hamlet, NY
 Latitude: 42-24-46.48N NAD 83
 Longitude: 79-08-07.04W
 Heights: 1642 feet site elevation (SE)
 599 feet above ground level (AGL)
 2241 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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.

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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.

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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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-877-OE.

Signature Control No: 321543813-365922608

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-877-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
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ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
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The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

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ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

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The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

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The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

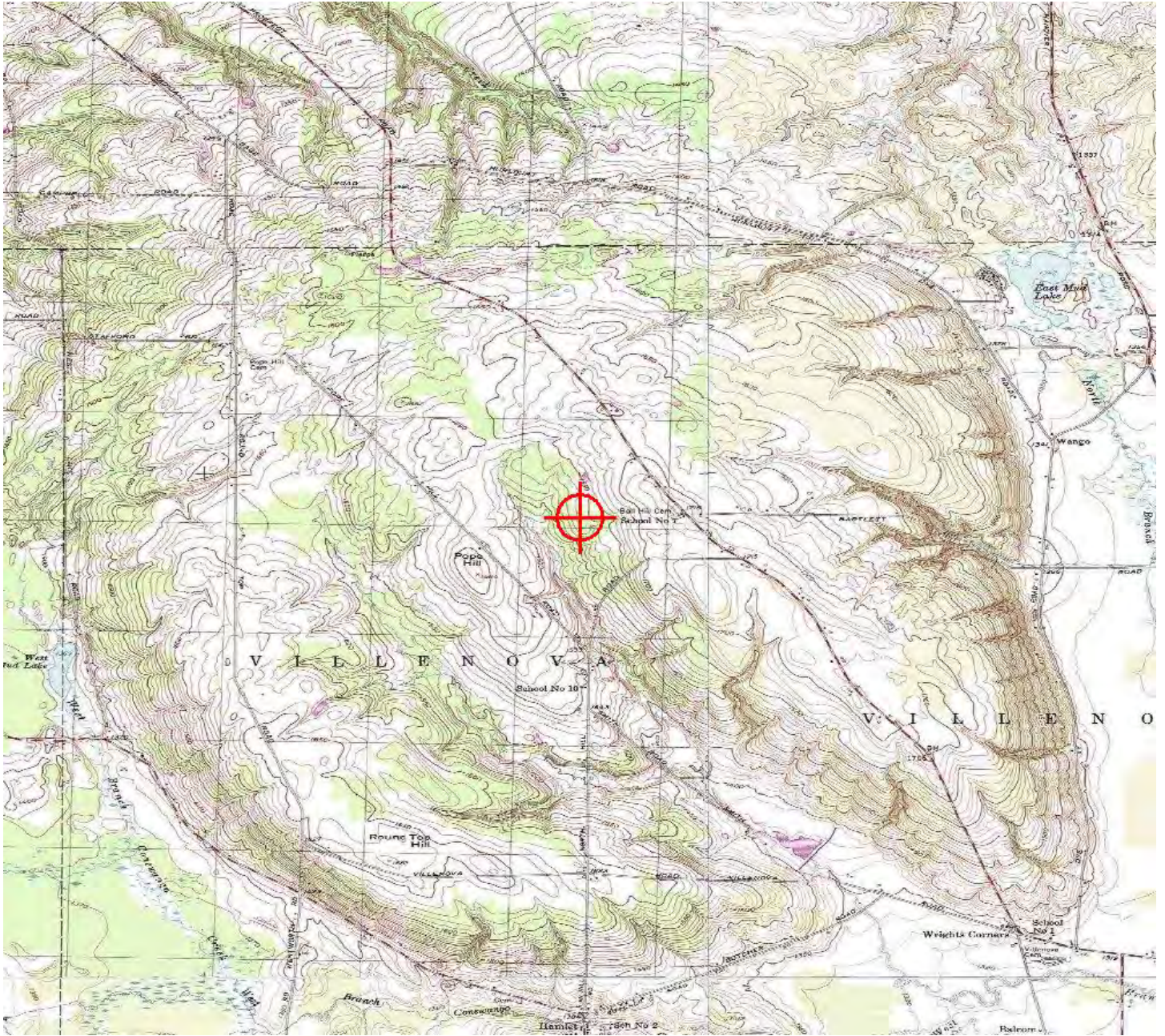
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-877-OE



Sectional Map for ASN 2017-WTE-877-OE





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

Aeronautical Study No.
2017-WTE-878-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T17
Location: Hamlet, NY
Latitude: 42-25-03.83N NAD 83
Longitude: 79-08-15.58W
Heights: 1644 feet site elevation (SE)
566 feet above ground level (AGL)
2210 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-878-OE.

Signature Control No: 321543814-365922596

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-878-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

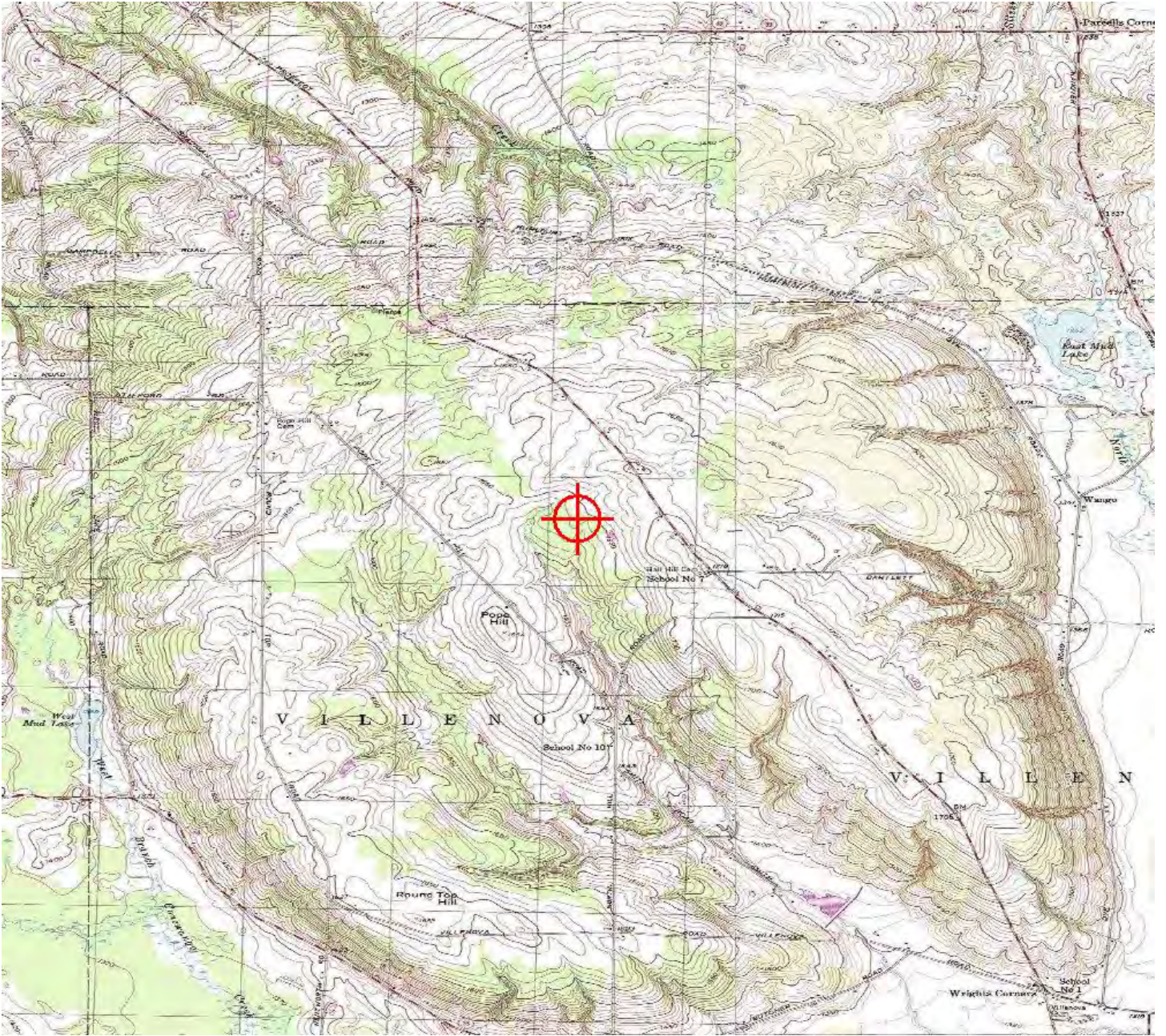
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-878-OE







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

Aeronautical Study No.
2017-WTE-879-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T18
Location: Hamlet, NY
Latitude: 42-25-19.11N NAD 83
Longitude: 79-08-28.17W
Heights: 1660 feet site elevation (SE)
599 feet above ground level (AGL)
2259 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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.

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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.

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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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-879-OE.

Signature Control No: 321543815-365922606

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-879-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-879-OE







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

Aeronautical Study No.
2017-WTE-880-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T19
Location: Hamlet, NY
Latitude: 42-23-58.55N NAD 83
Longitude: 79-06-17.70W
Heights: 1712 feet site elevation (SE)
587 feet above ground level (AGL)
2299 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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.

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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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-880-OE.

Signature Control No: 321543816-365922602

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-880-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

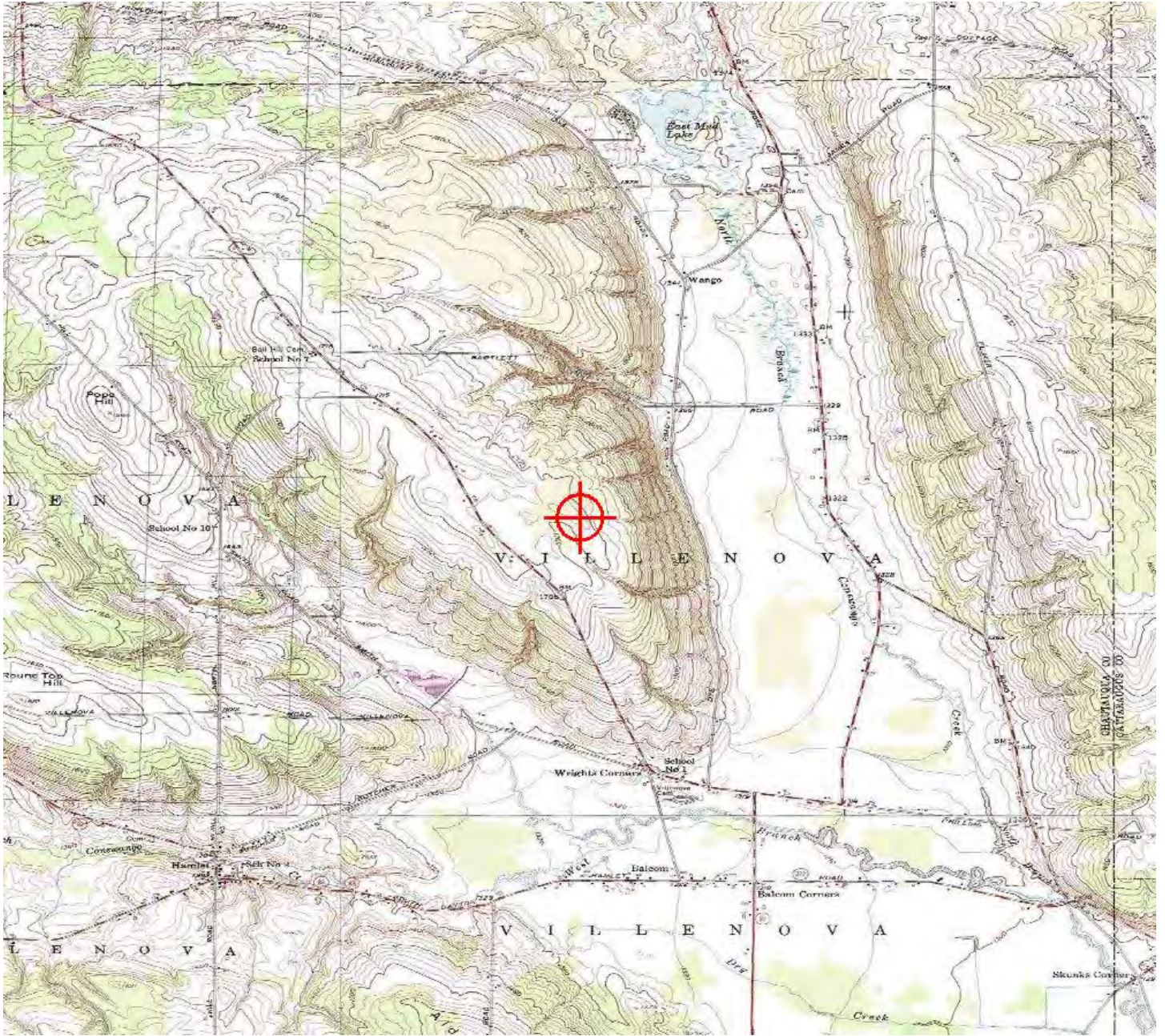
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-880-OE







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

Aeronautical Study No.
2017-WTE-881-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T20
Location: Hamlet, NY
Latitude: 42-24-11.28N NAD 83
Longitude: 79-06-22.74W
Heights: 1698 feet site elevation (SE)
599 feet above ground level (AGL)
2297 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-881-OE.

Signature Control No: 321543817-365922613

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-881-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

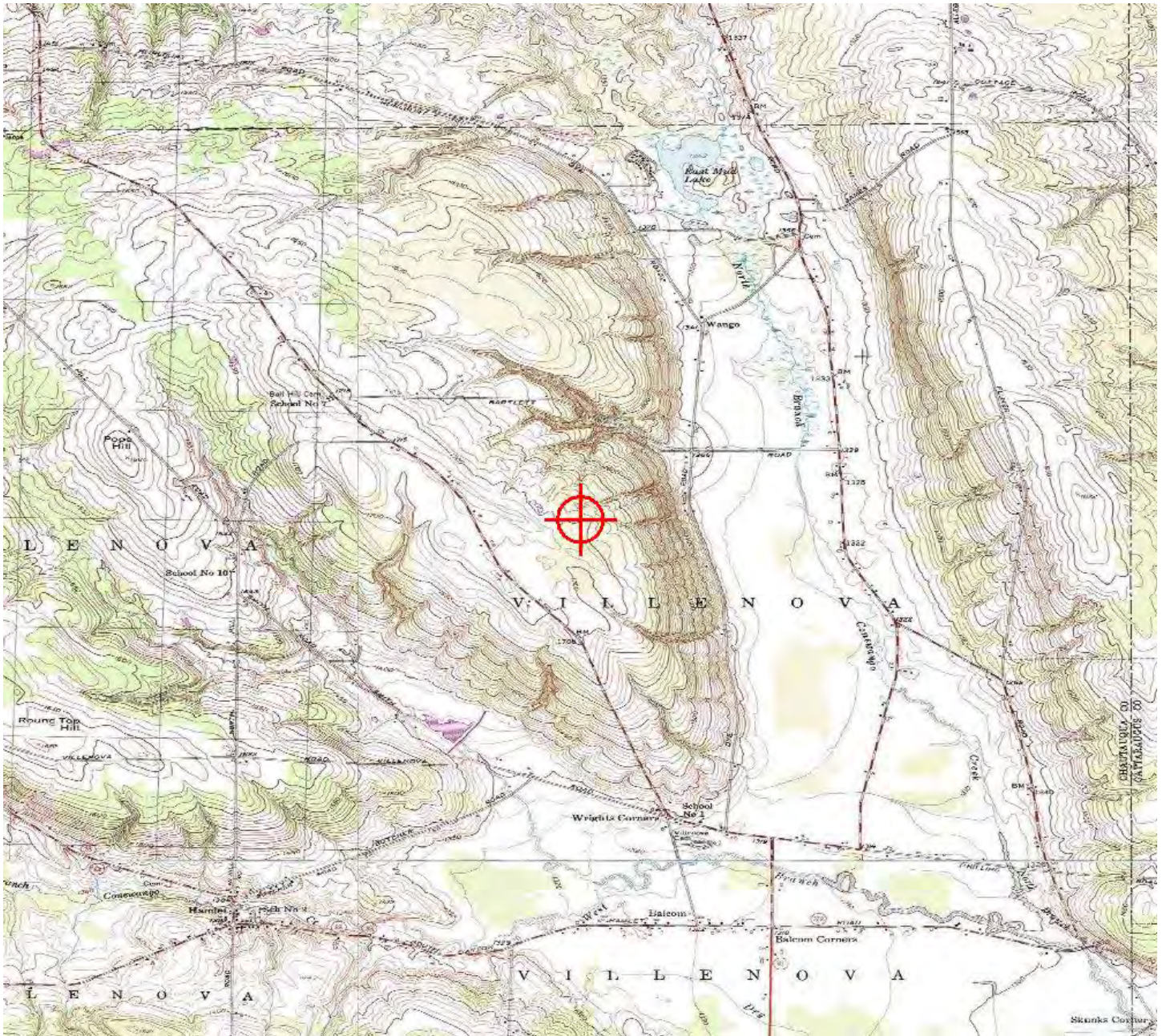
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-881-OE







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

Aeronautical Study No.
2017-WTE-882-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T21
Location: Hamlet, NY
Latitude: 42-23-44.37N NAD 83
Longitude: 79-06-03.43W
Heights: 1681 feet site elevation (SE)
599 feet above ground level (AGL)
2280 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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.

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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

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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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-882-OE.

Signature Control No: 321543818-365922611

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-882-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
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RNAV, Area Navigation
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The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

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Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

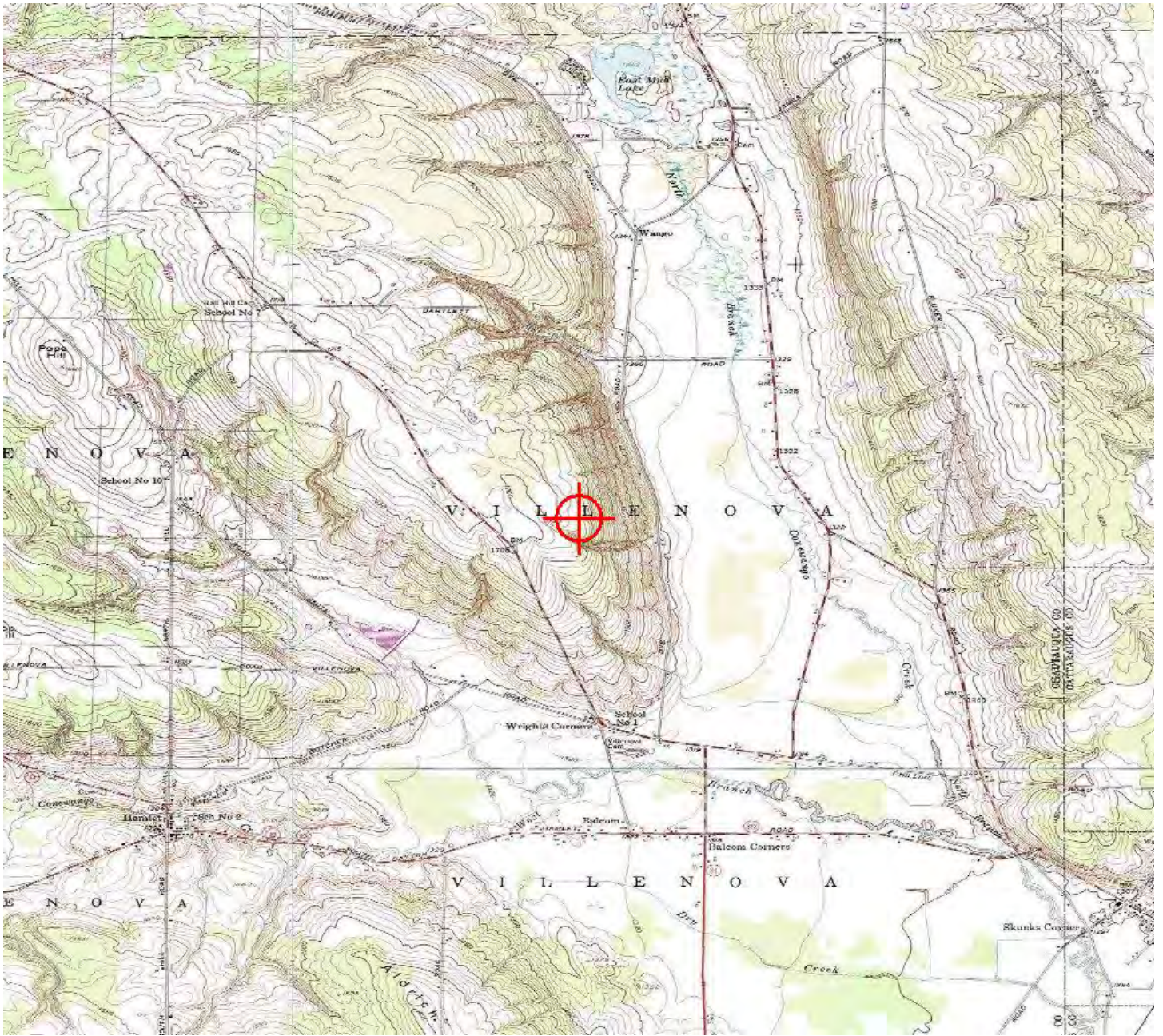
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-882-OE







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

Aeronautical Study No.
 2017-WTE-883-OE

Issued Date: 05/22/2018

Elizabeth King
 Ball Hill Wind Energy, LLC
 11101 W 120th Ave.
 Suite 400
 Broomfield, CO 80021

**** 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 T23
 Location: Hamlet, NY
 Latitude: 42-24-33.73N NAD 83
 Longitude: 79-06-37.34W
 Heights: 1642 feet site elevation (SE)
 599 feet above ground level (AGL)
 2241 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-883-OE.

Signature Control No: 321543819-365922603

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-883-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

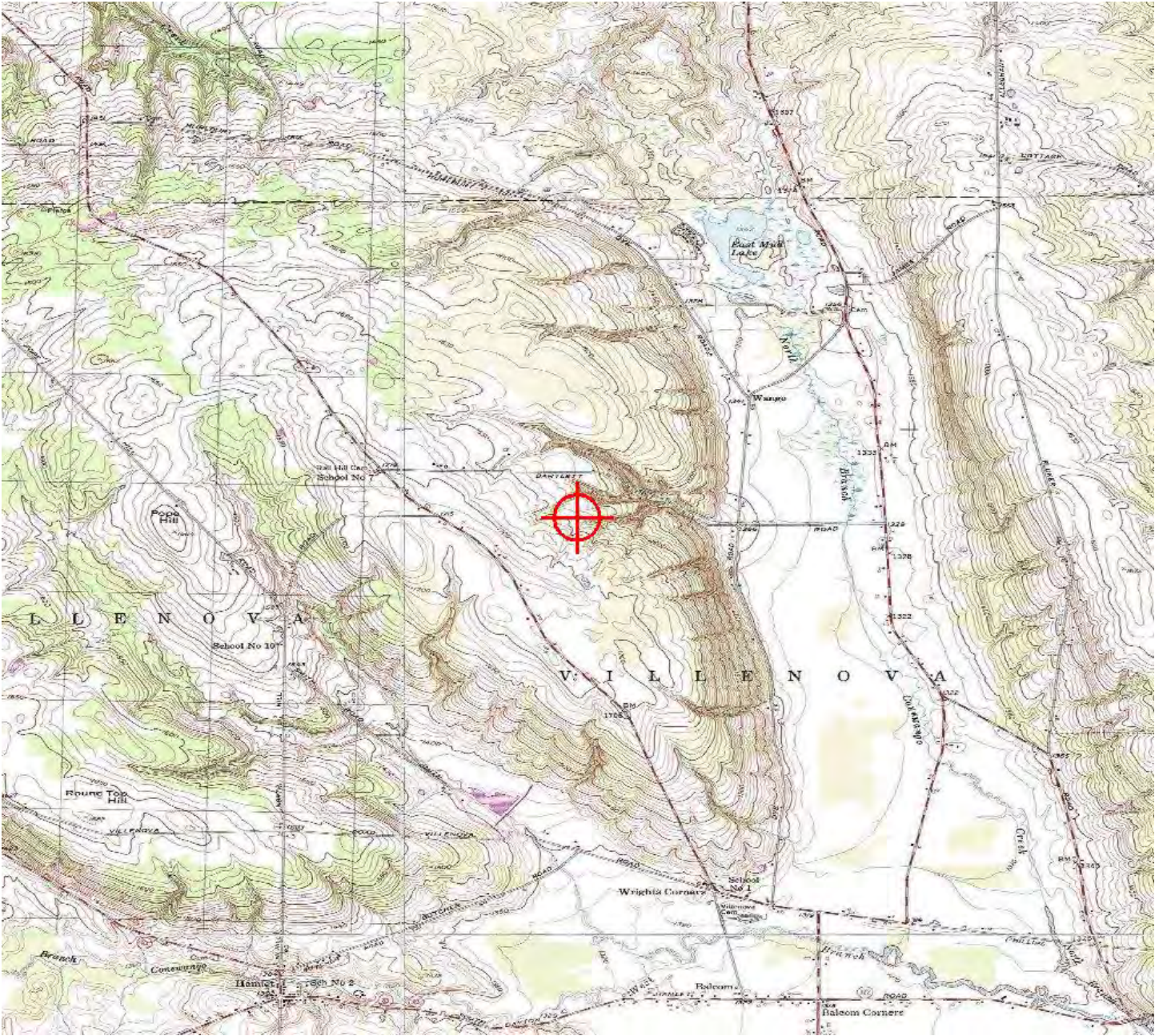
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-883-OE







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**** 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 T27
Location: Hamlet, NY
Latitude: 42-25-50.77N NAD 83
Longitude: 79-07-03.82W
Heights: 1602 feet site elevation (SE)
599 feet above ground level (AGL)
2201 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:

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Signature Control No: 321543820-365922610

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

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Map(s)

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Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

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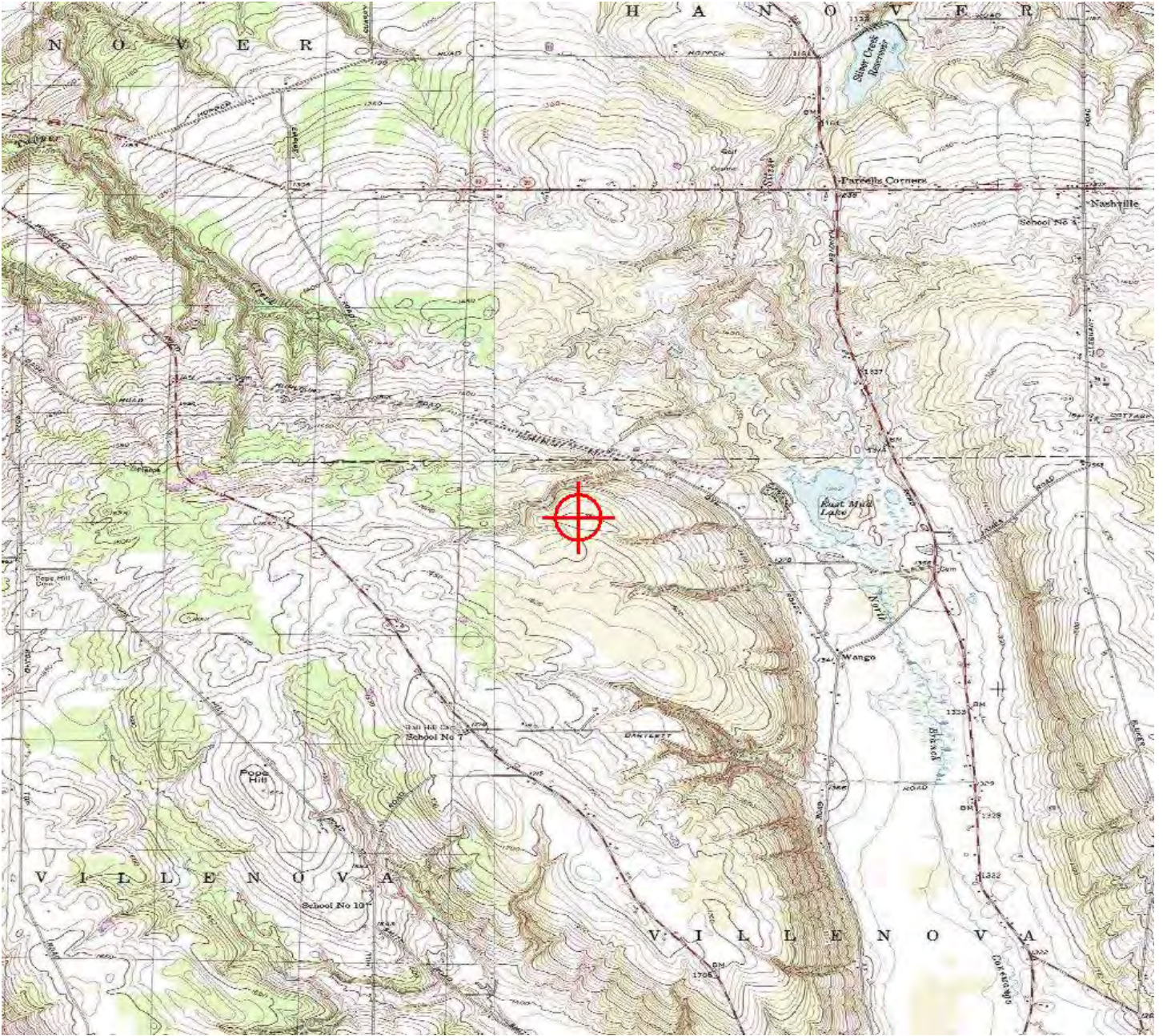
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Therefore, it is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation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

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TOPO Map for ASN 2017-WTE-884-OE



Sectional Map for ASN 2017-WTE-884-OE





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Location: Hamlet, NY
Latitude: 42-25-43.71N NAD 83
Longitude: 79-07-33.61W
Heights: 1602 feet site elevation (SE)
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Signature Control No: 321543821-365922604

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-885-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

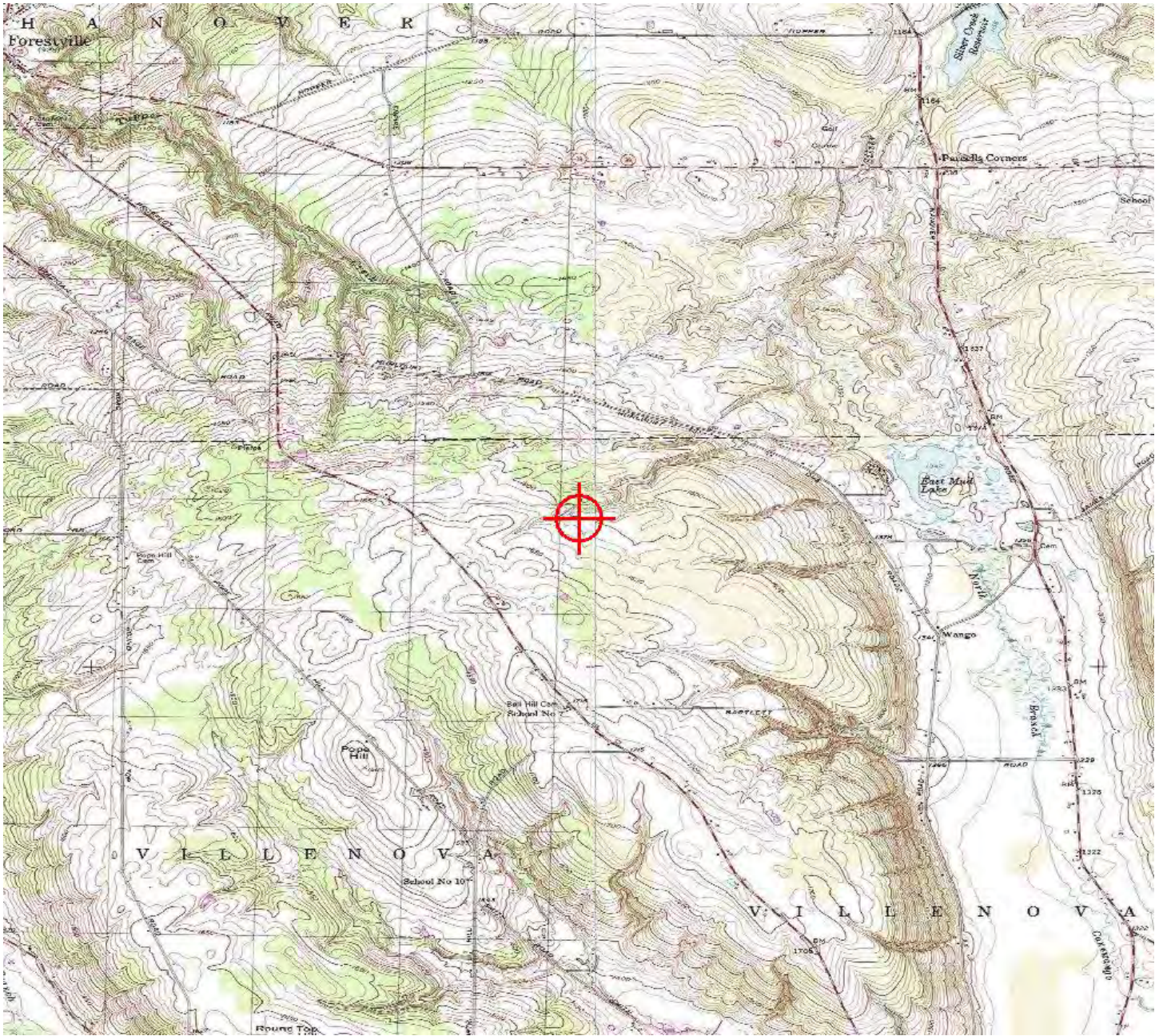
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

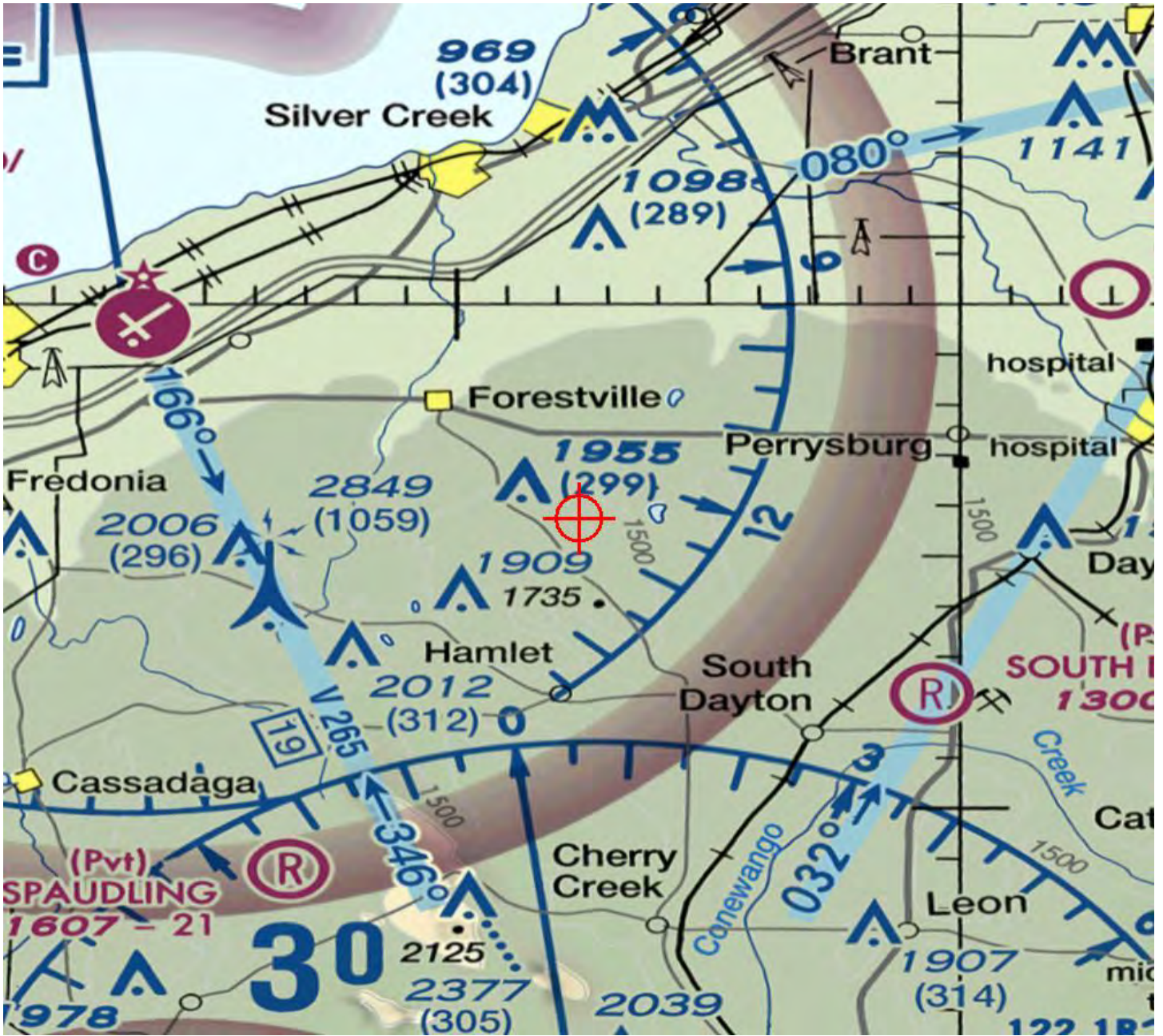
Therefore, it is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation providing the conditions set forth in this determination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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-885-OE







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

Aeronautical Study No.
 2017-WTE-886-OE

Issued Date: 05/22/2018

Elizabeth King
 Ball Hill Wind Energy, LLC
 11101 W 120th Ave.
 Suite 400
 Broomfield, CO 80021

**** 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 T30
 Location: Hamlet, NY
 Latitude: 42-25-59.46N NAD 83
 Longitude: 79-08-01.28W
 Heights: 1610 feet site elevation (SE)
 599 feet above ground level (AGL)
 2209 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-886-OE.

Signature Control No: 321543822-365922614

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-886-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

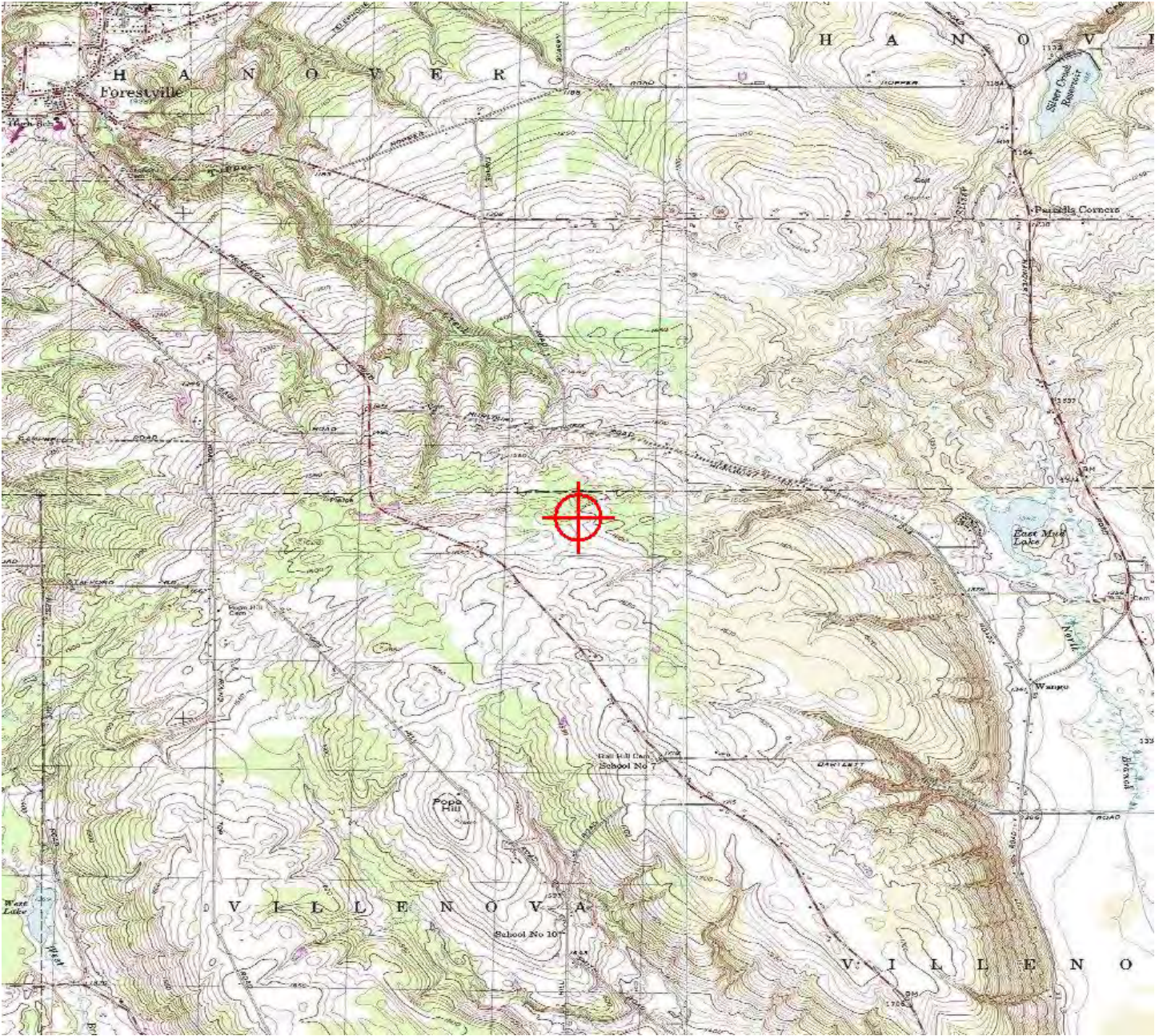
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-886-OE







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 Fort Worth, TX 76177

Aeronautical Study No.
 2017-WTE-887-OE

Issued Date: 05/22/2018

Elizabeth King
 Ball Hill Wind Energy, LLC
 11101 W 120th Ave.
 Suite 400
 Broomfield, CO 80021

**** 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 T31
 Location: Hamlet, NY
 Latitude: 42-26-26.82N NAD 83
 Longitude: 79-06-39.85W
 Heights: 1450 feet site elevation (SE)
 599 feet above ground level (AGL)
 2049 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 1, 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)
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See attachment for additional condition(s) or information.

This determination expires on 11/22/2019 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.
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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 June 21, 2018. 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.

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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.

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If we can be of further assistance, please contact Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-887-OE.

Signature Control No: 321543823-365922609

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-887-OE

Abbreviations:

AGL, Above Ground Level

AMSL, Above Mean Sea Level

ASR, Airport Surveillance Radar

ASN, Aeronautical Study Number

CFR, Code of Federal Regulations

GPS, Global Positioning System

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NEH, No Effect Height

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ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

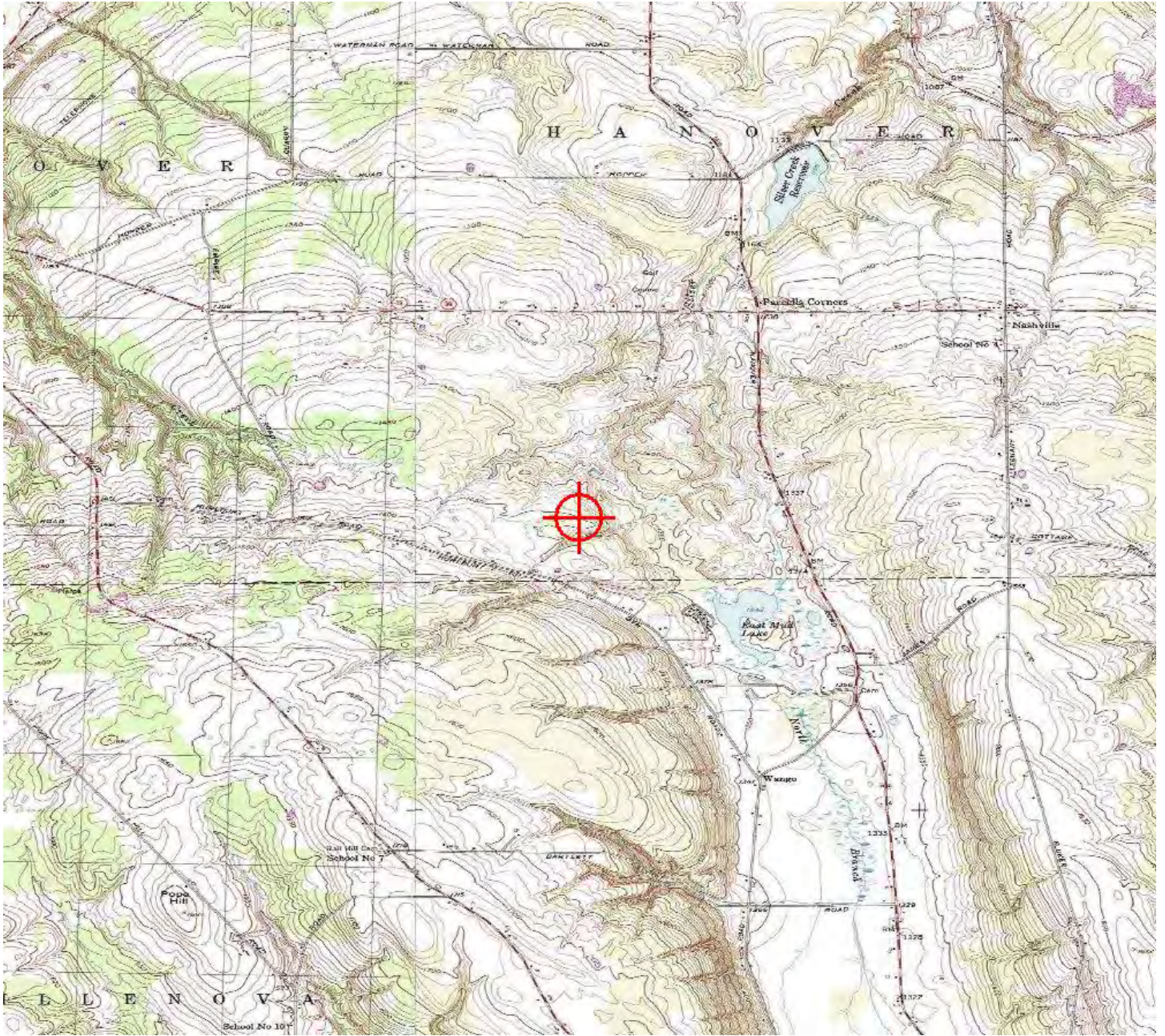
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-887-OE







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Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2017-WTE-888-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T33
Location: Hamlet, NY
Latitude: 42-26-46.96N NAD 83
Longitude: 79-07-12.25W
Heights: 1440 feet site elevation (SE)
599 feet above ground level (AGL)
2039 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-888-OE.

Signature Control No: 321543824-365922700

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-888-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

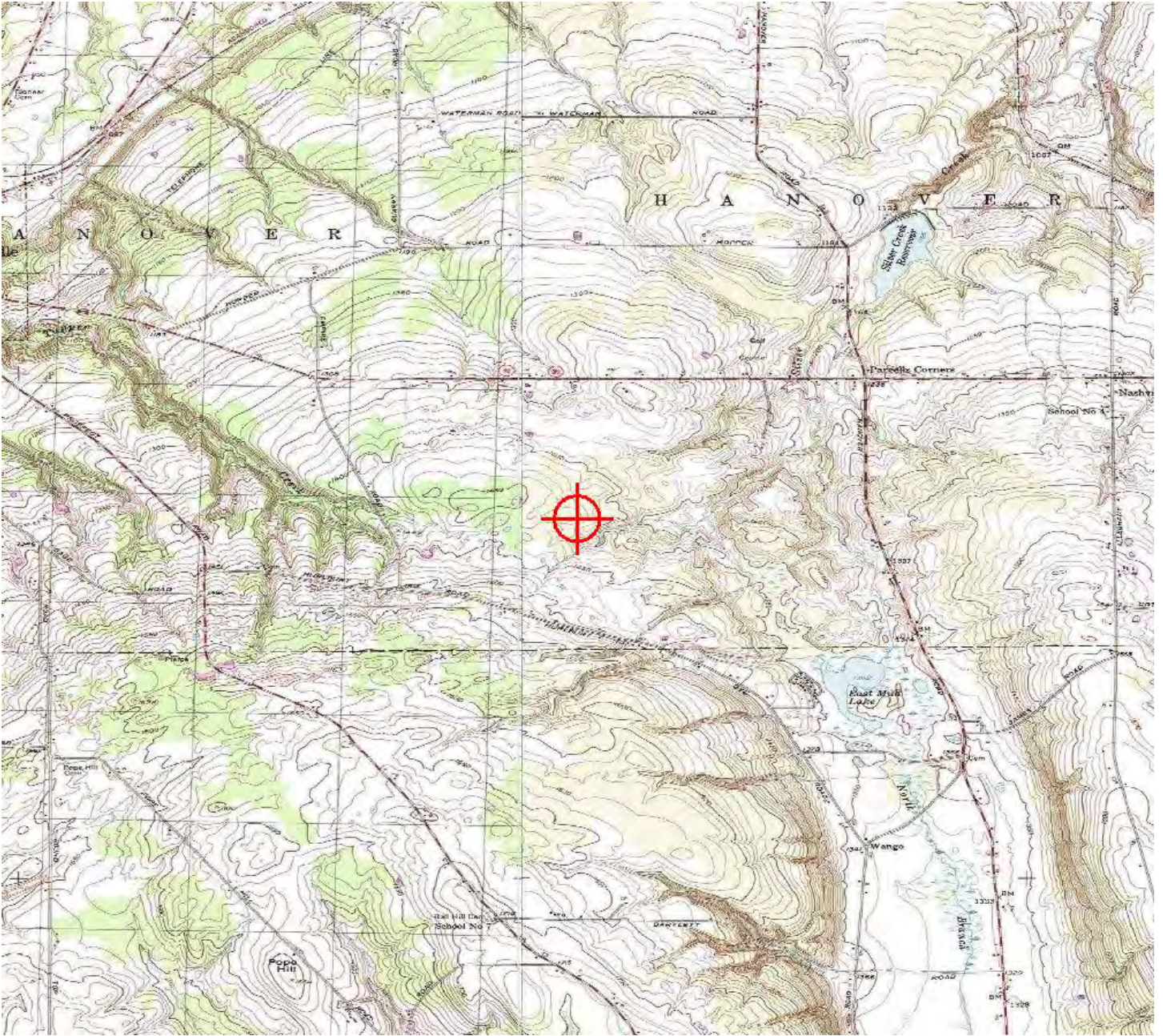
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-888-OE



Sectional Map for ASN 2017-WTE-888-OE





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

Aeronautical Study No.
 2017-WTE-889-OE

Issued Date: 05/22/2018

Elizabeth King
 Ball Hill Wind Energy, LLC
 11101 W 120th Ave.
 Suite 400
 Broomfield, CO 80021

**** 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 T34
 Location: Hamlet, NY
 Latitude: 42-26-52.62N NAD 83
 Longitude: 79-07-25.21W
 Heights: 1445 feet site elevation (SE)
 599 feet above ground level (AGL)
 2044 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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.

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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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-889-OE.

Signature Control No: 321543825-365922702

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-889-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

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ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

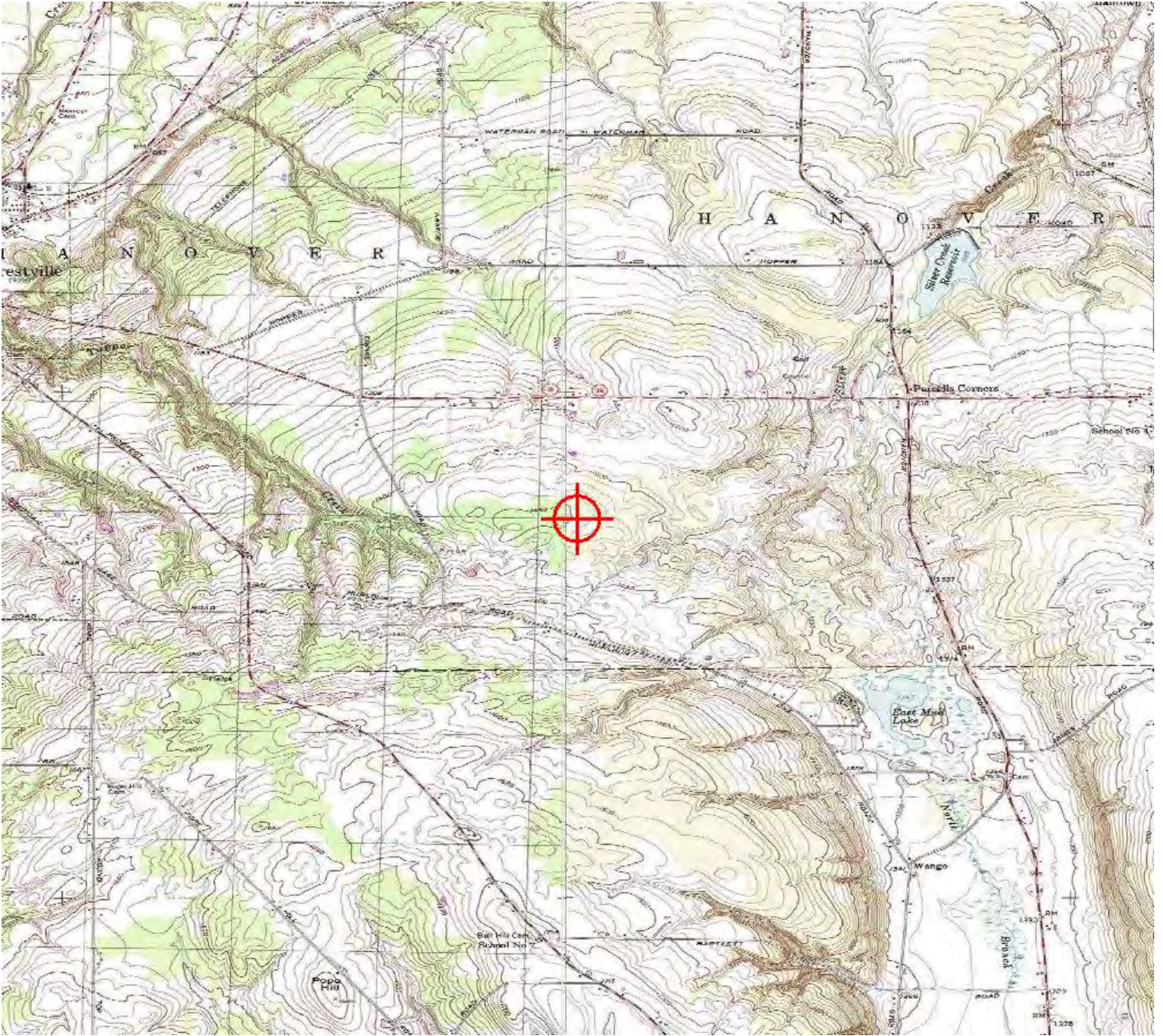
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-889-OE







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

Aeronautical Study No.
2017-WTE-890-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T35
Location: Hamlet, NY
Latitude: 42-27-04.07N NAD 83
Longitude: 79-07-55.38W
Heights: 1432 feet site elevation (SE)
599 feet above ground level (AGL)
2031 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:

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See attachment for additional condition(s) or information.

This determination expires on 11/22/2019 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.
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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.

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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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-890-OE.

Signature Control No: 321543826-365922706

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-890-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

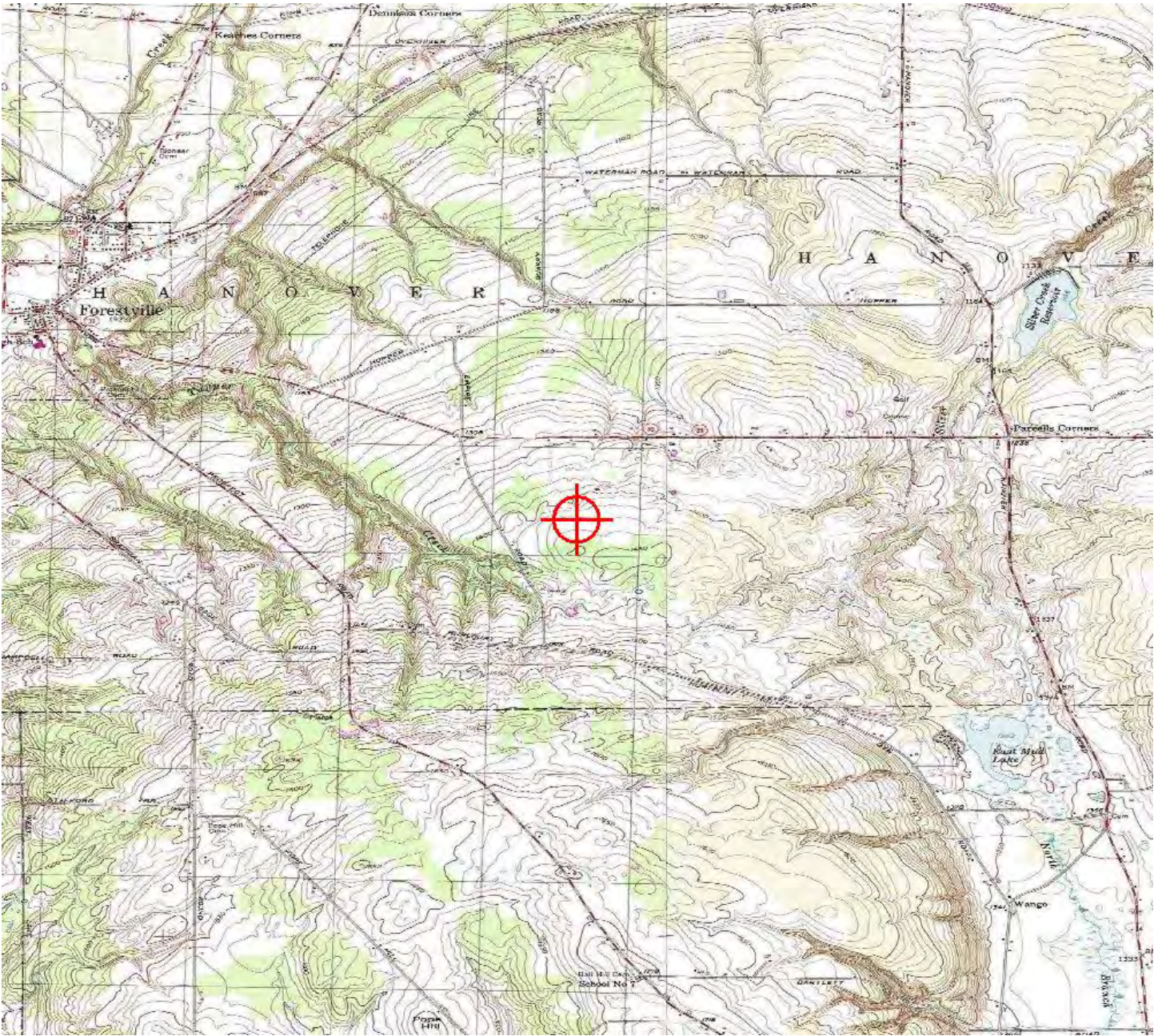
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-890-OE



Sectional Map for ASN 2017-WTE-890-OE





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

Aeronautical Study No.
 2017-WTE-891-OE

Issued Date: 05/22/2018

Elizabeth King
 Ball Hill Wind Energy, LLC
 11101 W 120th Ave.
 Suite 400
 Broomfield, CO 80021

**** 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 T36
 Location: Hamlet, NY
 Latitude: 42-26-51.08N NAD 83
 Longitude: 79-06-09.39W
 Heights: 1371 feet site elevation (SE)
 599 feet above ground level (AGL)
 1970 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-891-OE.

Signature Control No: 321543827-365922711

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-891-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

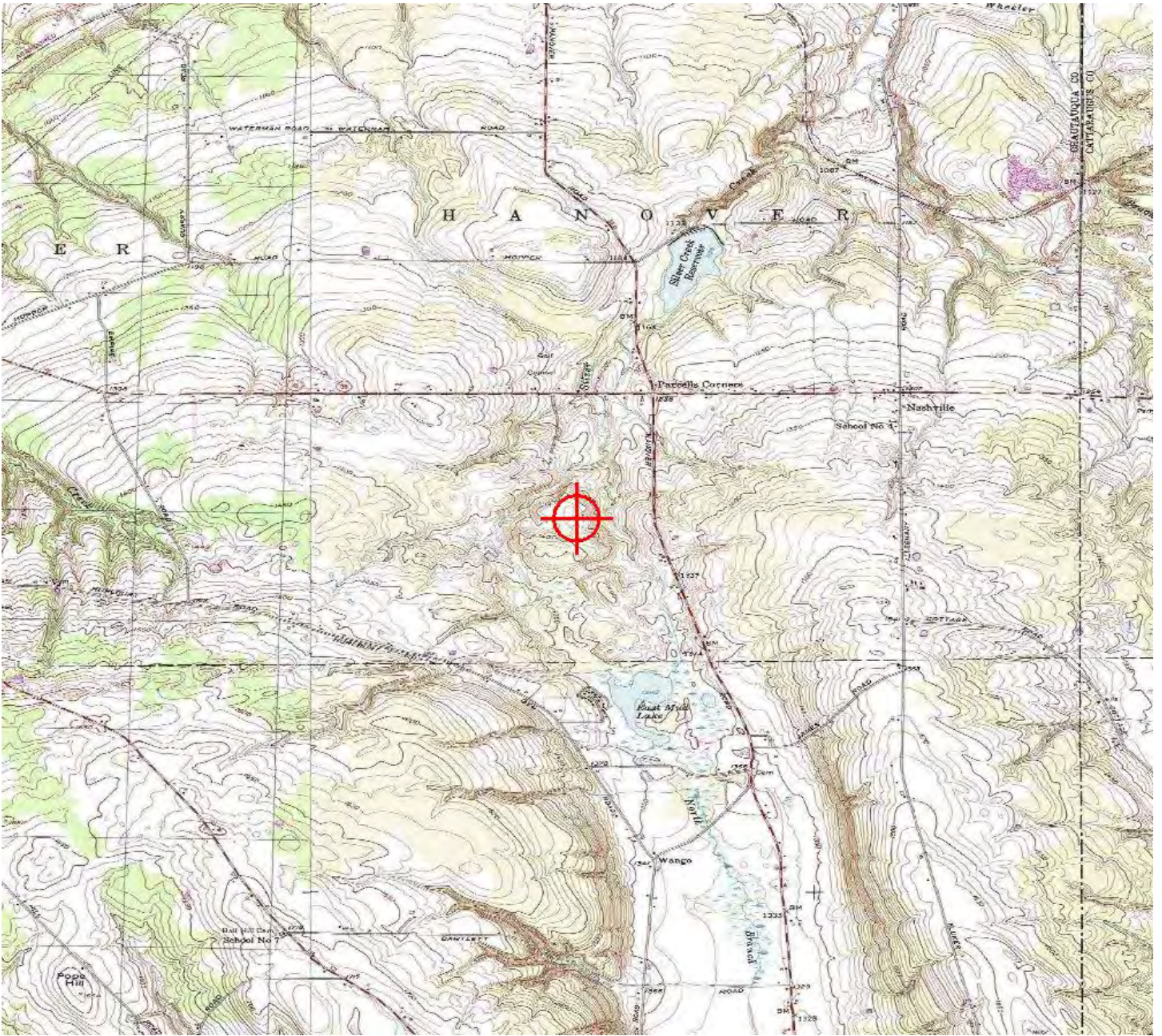
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-891-OE



Sectional Map for ASN 2017-WTE-891-OE





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

Aeronautical Study No.
2017-WTE-892-OE

Issued Date: 05/22/2018

Elizabeth King
Ball Hill Wind Energy, LLC
11101 W 120th Ave.
Suite 400
Broomfield, CO 80021

**** 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 T37
Location: Hamlet, NY
Latitude: 42-27-13.41N NAD 83
Longitude: 79-06-43.92W
Heights: 1380 feet site elevation (SE)
599 feet above ground level (AGL)
1979 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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.

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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

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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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-892-OE.

Signature Control No: 321543828-365922712

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-892-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

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ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

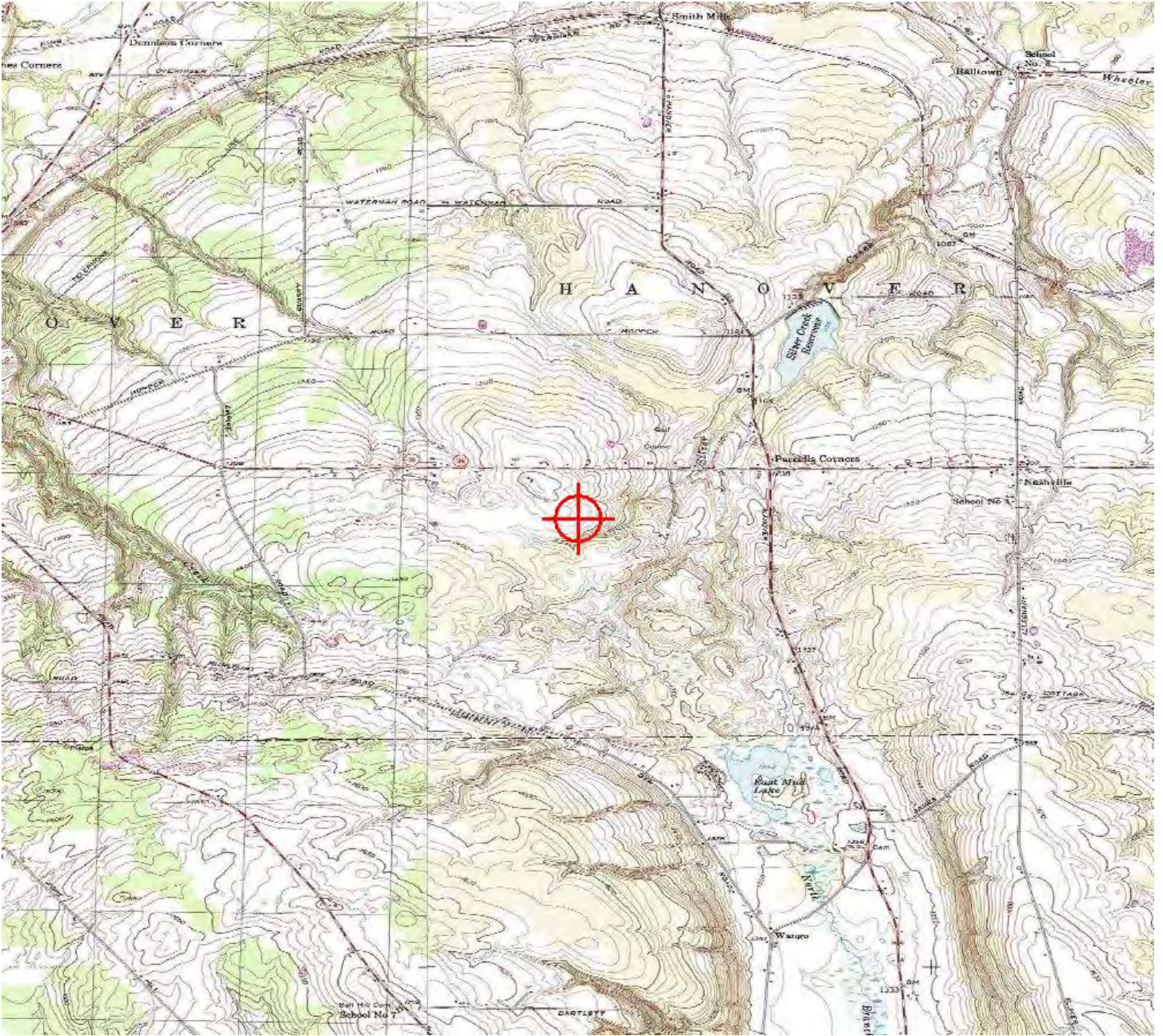
The cumulative impact of the structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the structure affect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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-892-OE







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

Aeronautical Study No.
 2017-WTE-893-OE

Issued Date: 05/22/2018

Elizabeth King
 Ball Hill Wind Energy, LLC
 11101 W 120th Ave.
 Suite 400
 Broomfield, CO 80021

**** 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 T39
 Location: Hamlet, NY
 Latitude: 42-24-27.01N NAD 83
 Longitude: 79-10-06.69W
 Heights: 1608 feet site elevation (SE)
 599 feet above ground level (AGL)
 2207 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 1, 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.

This determination expires on 11/22/2019 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 June 21, 2018. 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 July 01, 2018 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 Brian Barnes, at (816) 329-2524, or brian.a.barnes@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-WTE-893-OE.

Signature Control No: 321543829-365922714

(DNH -WT)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

Additional information for ASN 2017-WTE-893-OE

Abbreviations:

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ASR, Airport Surveillance Radar
ASN, Aeronautical Study Number
CFR, Code of Federal Regulations
GPS, Global Positioning System
NA, Not Authorized
NEH, No Effect Height
NM, Nautical Mile
RNAV, Area Navigation
RWY, Runway
TERPS, Terminal Instrument Procedures

The proposed structures (Wind Turbines) would be located approximately 6.71 NM extending southeast to a point 9.59 NM of the Airport Reference Point for the Chautauqua County/Dunkirk Airport (DKK) Dunkirk, NY. For the sake of efficiency, the narrative below contains all of the proposed turbines that have similar impacts, the primary difference being the amount of penetration to 14 CFR Part 77 standards. Separate determinations are being made for each turbine and are available on our website at <http://oeaaa.faa.gov>. All of the proposed turbines were originally filed at 599 feet AGL. After initial review indicated considerable adverse effects, the proponent agreed to reduce the height of 2 of the turbines to what is now shown on page one.

The following would exceed the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 AGL

ASN's 2017-WTE-866, 868-870, 872-875, 877-879, 881-884, 886-893-OE exceed this standard by 100 feet. ASN 2017-WTE-876-OE exceeds by 67 feet. ASN 2017-WTE-880-OE exceeds by 88 feet

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria).

ASN 2017-WTE-877-OE exceeds the RWY 15 Diverse A departure area by 9 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,100 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-878-OE exceeds the RWY 15 Diverse A departure area by 55 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,200 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-893-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,300 feet AMSL, an increase from 2,000 feet AMSL.

ASN 2017-WTE-879-OE exceeds the RWY 15 Diverse A departure area by 84 feet requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES RWY 15 std. with a minimum climb gradient of 354 feet per NM to 2,400 feet AMSL, an increase from 2,000 feet AMSL.

The proposal was circularized on February 12, 2018 under ASN 2017-WTE-866-OE to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No letters of objection were received as a result of the circularization.

Aeronautical study disclosed that the proposed structure would not have a significant adverse effect on any existing or proposed arrival, departure, or en route IFR operations or procedures. No information was received indicating the penetration to the departure area would pose a problem for normal aircraft operations.

Study for possible VFR effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations. The proposals are beyond traffic pattern airspace. No information was received to indicate this proposed structure would be a problem for aircraft operating in any traffic pattern. Therefore, the proposal would not have an effect on VFR traffic pattern operations at any known public use or military airports. At 599, 587, and 566 feet AGL, the structures would penetrate altitudes commonly used for en route VFR flight, however no information was received to indicate they would be located within any known regularly used VFR routes. Therefore, they would not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

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

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

Additional conditions:

As a condition of this determination it is required that Notice of Actual Construction or Alteration (7460-2 Part 1) be E-filed at least 10 full days prior to the start of construction so that appropriate action can be taken to amend the effected procedure(s) and/or altitude(s).

TOPO Map for ASN 2017-WTE-893-OE

