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A Primer on Opposing Construction of Wind Farms Near Public-Use Airports

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A PRIMER ON OPPOSING CONSTRUCTION OF WIND FARMS NEAR PUBLIC-USE AIRPORTS

ALAN ARMSTRONG*

ABSTRACT

We are witnessing an explosion in the construction of wind turbine generators, cell phone towers, and television/radio broadcast towers around the United States. The statutes, rules, regulations, and police guidance addressing when and where such structures can be erected near public-use airports are complex and intricate. The Federal Aviation Administration (FAA) focuses more on subjective than objective criteria in assessing whether an obstruction to air navigation is a hazard to air navigation.

To the extent the FAA conducts studies to determine whether an obstruction is a hazard, the courts are not uniform in assessing the effects of FAA studies. In California, such studies have a preemptive effect. In Iowa, they do not. This Article illuminates this complex area of the law and assists the aviation practitioner in navigating this intricate and bewildering area of the law.

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I. INTRODUCTION

WIND TURBINES GROUPED in wind farm projects are increasingly becoming part of the national landscape. The construction of wind farm projects in the vicinity of public-use airports can present airport operators and businesses on the airports with an existential threat to the continued viability of the airport. Principally, the construction of wind farm projects near public-use airports can result in structures penetrating navigable airspace.

This Article will review the statutes, regulations, policies, and procedures that pertain to the airport operator’s duty to keep the approaches and departures to and from the airport free of obstructions in contrast to the inner workings of the Federal Aviation Administration (FAA) Obstacle Evaluation Group (OEG), which conducts aeronautical studies in rendering determinations as to whether obstructions to navigable airspace are hazards to air navigation. In many instances, the OEG will initially issue a Notice of Presumed Hazard (NPH) and then issue a Determination of No Hazard (DNH) after conducting an aeronautical study. Litigation frequently follows an OEG DNH. Also, this Article will examine the statutes, regulations, legal standards and policies, and procedures employed by the courts in determining whether OEG determinations are controlling or whether state or county authorities may prevent the construction of obstructions to air navigation notwithstanding an OEG DNH. The Article will also examine several cases where the courts determined that the OEG DNH were arbitrary and capricious and were reversed.

While the title of this Article specifically addresses wind farms, the statutes, regulations, policies, and procedures discussed in this Article will generally apply to other projects that obstruct navigable airspace, such as radio broadcasting antennae and cell phone towers.

II. THE VARIOUS DEFINITIONS OF NAVIGABLE AIRSPACE

According to the FAA:

The navigable airspace is a limited national resource. Navigable airspace is defined as the airspace at or above the minimum altitudes of flight that includes the airspace needed to ensure safety in the takeoff and landing of aircraft. Congress has charged the FAA with administering this airspace in the public interest as necessary to ensure the safety of aircraft and its efficient use.

All proposed development on public-use airport property is subject to an airport airspace analysis (AAA) and is commonly processed as a non-rulemaking airport (NRA) case regardless of Federal funding participation. The appropriate FAA regional Airports Division is responsible for initiating the coordination of NRA aeronautical studies, which consist of:

- Evaluating the effect of the construction or alteration on existing and planned operating procedures
- Determining the potential hazardous effect of the proposed construction on air navigation
- Identifying mitigating measures to enhance safe air navigation[.]

Under Federal Regulation Title 14 Part 77, *Safe, Efficient Use and Preservation of the Navigable Airspace (Part 77)*, which went into effect on January 18, 2011, an AAA is not conducted for private-use airports unless the airport is operated by a Federal agency or the Department of Defense . . . , or if the private-use airport has at least one FAA-approved instrument approach procedure. Private-use airports are subject to the notification requirements under Part 157, *Notice of Construction, Alteration, Activation, and Deactivation of Airports*.¹

The foregoing definition by the FAA makes it clear that navigable airspace must extend low enough to protect aircraft from

¹ *Airport Airspace Analysis (AAA)*, FED. AVIATION ADMIN., https://www.faa.gov/airports/engineering/airspace_analysis/ [https://perma.cc/JUY8-PTKM] (Mar. 16, 2021, 9:37 AM).

obstructions during takeoff and landing. Altitude values may be expressed either in terms of feet above ground level (AGL) or feet above mean sea level (MSL).² 14 C.F.R. § 91.119(c) provides that even over non-congested areas, aircraft may be operated at “[a]n altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.”³ Irrespective of aircraft requirements for takeoff and landing, navigable airspace extends down to an altitude of 500 feet above the surface over non-congested areas.⁴ Furthermore, helicopters may be flown even lower than 500 feet AGL, because 14 C.F.R. § 91.119(d) provides:

If the operation is conducted without hazard to persons or property on the surface—(1) [a] helicopter may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section, provided each person operating the helicopter complies with any routes or altitudes specifically prescribed for helicopters by the FAA⁵

Aircraft may be operated under either instrument flight rules (IFR) or visual flight rules (VFR).⁶ Aircraft operating under IFR may conduct an instrument approach procedure (IAP).⁷ A non-precision instrument approach procedure will have a minimum descent altitude (MDA), which is an altitude below which the aircraft cannot be operated unless the aircraft’s pilot has visual reference to the runway.⁸ It is not uncommon for non-precision instrument approach procedures to have a minimum descent altitude that is approximately 500 feet AGL. Precision approaches have decision altitudes or decision heights, which is

² E.g., *What’s the Difference Between MSL and AGL? Here’s How You Tell . . .*, PILOT INSTITUTE (Feb. 20, 2020), <https://pilotinstitute.com/msl-vs-agl/> [https://perma.cc/ST8V-DXWS].

³ 14 C.F.R. § 91.119(c) (2021).

⁴ *See id.*

⁵ *Id.* § 91.119(d)(1).

⁶ *See* FED. AVIATION ADMIN., FAA-H-8083-15B, INSTRUMENT FLYING HANDBOOK G-9, G-20 (2012), https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/media/FAA-H-8083-15B.pdf [https://perma.cc/3PKU-FAP9].

⁷ *See id.* at G-9.

⁸ “Minimum descent altitude . . . or minimum descent height . . . [is a] specified altitude or height in a 2D instrument approach operation or circling approach operation below which descent must not be made without the required visual reference.” INT’L CIV. AVIATION ORG., ANNEX 6 TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION, OPERATION OF AIRCRAFT, PART I — INTERNATIONAL COMMERCIAL AIR TRANSPORT — AEROPLANES 1-8 (11th ed. 2018).

“[a] specified altitude or height in a 3D instrument approach operation at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.”⁹ Aircraft operated under IFR and conducting a precision approach may be 200 feet or lower AGL when conducting an instrument approach procedure.¹⁰ Thus, the importance of protecting navigable airspace so that aircraft may take off from and land at airports in fog and clouds is readily apparent.

III. A REVIEW OF PART 77 OF THE FEDERAL AVIATION REGULATIONS

Pilots approaching to land at an airport in fog and cloud must be able to descend to the airport without the danger of striking a fixed object or structure. For that reason, the FAA promulgated 14 C.F.R. Part 77, which deals with protecting navigable airspace from obstructions so that airmen landing aircraft or departing from airports in poor weather may do so without fear of striking structures, such as wind turbines.

The importance of keeping navigable airspace clear and free of obstructions is so significant that airport sponsors who own and operate public-use airports are required to give a covenant to the FAA in the form of FAA Sponsor Grant Assurances.¹¹ FAA Sponsor Grant Assurance No. 20 provides:

[The airport operator] will take appropriate action to assure that such terminal airspace as is required to protect instrument and visual operations to the airport (including established minimum safe altitudes) will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards.¹²

The reason airport operators are required to keep navigable airspace clear and free of obstructions is self-evident. Public-use airports receiving federal funds must be safe for operation, which is why the FAA imposes on the airport operator the obligations

⁹ *Id.* at 1-3.

¹⁰ *See id.* at 4-6 (describing the Type B instrument approach operation categories).

¹¹ *See* 49 U.S.C. § 47107(a).

¹² *Assurances: Airport Sponsors*, FED. AVIATION ADMIN., https://www.faa.gov/airports/aip/grant_assurances/ [<https://perma.cc/58MR-ZEQR>] (June 4, 2020) (click “Airport Sponsors (2/2020)”).

set forth in Grant Assurance No. 20.¹³ By statute, operators of public-use airports are required to ensure that terminal airspace is clear of hazards.¹⁴ Further, the airport operator must ensure land near the airport is compatible with normal airport operations.¹⁵ This may be accomplished by the adoption of zoning laws.¹⁶

Proponents and developers of wind turbines and other structures in the vicinity of public-use airports must give notice to the FAA by completing an FAA Form 7460-1 Notice of Proposed Construction or Alteration “at least 45 days before the start date of the proposed construction or alteration or the date an application for a construction permit is filed, whichever is earliest.”¹⁷ The duty to give notice to the FAA is triggered if the construction or alteration will penetrate a 100:1 horizontal plane for a distance of 20,000 feet “from the nearest point of the nearest runway of each airport described in paragraph (d) of [14 C.F.R. § 77.9] with its longest runway more than 3,200 ft. in actual length, excluding heliports.”¹⁸ According to 14 C.F.R. § 77.5(c), the information contained in the FAA Form 7460-1 is used to:

- (1) Evaluate the effect of the proposed construction or alteration on safety in air commerce and the efficient use and preservation of the navigable airspace and of airport traffic capacity at public use airports;
- (2) Determine whether the effect of proposed construction or alteration is a hazard to air navigation;
- (3) Determine appropriate marking and lighting recommendations, using FAA Advisory Circular 70/7460-1, Obstruction Marking and Lighting;
- (4) Determine other appropriate measures to be applied for continued safety of air navigation; and
- (5) Notify the aviation community of the construction or alteration of objects that affect the navigable airspace, including the revision of charts, when necessary.¹⁹

¹³ *See id.* (“The airport and all facilities which are necessary to serve the aeronautical users of the airport, other than facilities owned or controlled by the United States, shall be operated at all times in a safe and serviceable condition and in accordance with the minimum standards as may be required or prescribed by applicable Federal, state and local agencies for maintenance and operation.”).

¹⁴ *See* 49 U.S.C. § 47107(a)(9).

¹⁵ *See id.* § 47107(a)(10).

¹⁶ *Id.*

¹⁷ 14 C.F.R. § 77.7(a)-(b) (2021).

¹⁸ *Id.* § 77.9(b)(1).

¹⁹ *Id.* § 77.5(c)(1)-(5).

14 C.F.R. §77.11 requires the proponent of the wind farm or structure to file a supplemental notice with the FAA when “[t]he construction or alteration is more than 200 feet in height AGL at its site.”²⁰ When the proponent of the wind farm or other proposed structures files Form 7460–1, the FAA must evaluate the data in the form.²¹

The criteria the FAA is supposed to use to evaluate the form are set forth in 14 C.F.R. § 77.15 as follows:

(a) This subpart describes standards used to determine obstructions to air navigation that may affect the safe and efficient use of navigable airspace and the operation of planned or existing air navigation and communication facilities. Such facilities include air navigation aids, communication equipment, airports, Federal airways, instrument approach or departure procedures, and approved off-airway routes.

(b) Objects that are considered obstructions under the standards described in this subpart are presumed hazards to air navigation unless further aeronautical study concludes that the object is not a hazard. Once further aeronautical study has been initiated, the FAA will use the standards in this subpart, along with FAA policy and guidance material, to determine if the object is a hazard to air navigation.²²

“Imaginary surfaces” are defined and explained in 14 C.F.R. § 77.19 as follows:

The following civil airport imaginary surfaces are established with relation to the airport and to each runway. The size of each such imaginary surface is based on the category of each runway according to the type of approach available or planned for that runway. The slope and dimensions of the approach surface applied to each end of a runway are determined by the most precise approach procedure existing or planned for that runway end.²³

²⁰ *Id.* § 77.11(a)(1).

²¹ *See id.* § 77.15(c).

The standards in this subpart apply to construction or alteration proposals on an airport (including heliports and seaplane bases with marked lanes) if that airport is one of the following before the issuance of the final determination: (1) [a]vailable for public use and is listed in the Airport/Facility Directory, Supplement Alaska, or Supplement Pacific of the U.S. Government Flight Information Publications

Id. § 77.15(e)(1).

²² *Id.* § 77.15(a)–(b).

²³ *Id.* § 77.19.

There are five principal imaginary surfaces: (1) a horizontal surface, (2) a conical surface, (3) a primary surface, (4) an approach surface, and (5) a transitional surface.²⁴ A horizontal surface is defined as follows:

(a) A horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by [sw]inging arcs of a specified radii from the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs. The radius of each arc is:

- (1) 5,000 feet for all runways designated as utility or visual;
- (2) 10,000 feet for all other runways. The radius of the arc specified for each end of a runway will have the same arithmetical value. That value will be the highest determined for either end of the runway. When a 5,000-foot arc is encompassed by tangents connecting two adjacent 10,000-foot arcs, the 5,000-foot arc shall be disregarded on the construction of the perimeter of the horizontal surface.²⁵

A conical surface is defined as “[a] surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.”²⁶ A primary surface is defined as follows:

A surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway; but when the runway has no specially prepared hard surface, the primary surface ends at each end of that runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of the primary surface is:

- (1) 250 feet for utility runways having only visual approaches.
- (2) 500 feet for utility runways having non-precision instrument approaches.
- (3) For other than utility runways, the width is:
 - (i) 500 feet for visual runways having only visual approaches.
 - (ii) 500 feet for non-precision instrument runways having visibility minimums greater than three-fourths statute mile.
 - (iii) 1,000 feet for a non-precision instrument runway having a non-precision instrument approach with visibility

²⁴ See *id.* § 77.19(a)–(e).

²⁵ *Id.* § 77.19(a).

²⁶ *Id.* § 77.19(b).

minimums as low as three-fourths of a statute mile, and for precision instrument runways.

(iv) The width of the primary surface of a runway will be that width prescribed in this section for the most precise approach existing or planned for either end of that runway.²⁷

An approach surface is defined as follows:

A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end.

- (1) The inner edge of the approach surface is the same width as the primary surface and it expands uniformly to a width of:
 - (i) 1,250 feet for that end of a utility runway with only visual approaches;
 - (ii) 1,500 feet for that end of a runway other than a utility runway with only visual approaches;
 - (iii) 2,000 feet for that end of a utility runway with a non-precision instrument approach;
 - (iv) 3,500 feet for that end of a non-precision instrument runway other than utility, having visibility minimums greater than three-fourths of a statute mile;
 - (v) 4,000 feet for that end of a non-precision instrument runway, other than utility, having a non-precision instrument approach with visibility minimums as low as three-fourths statute mile; and
 - (vi) 16,000 feet for precision instrument runways.
- (2) The approach surface extends for a horizontal distance of:
 - (i) 5,000 feet at a slope of 20 to 1 for all utility and visual runways;
 - (ii) 10,000 feet at a slope of 34 to 1 for all non-precision instrument runways other than utility; and
 - (iii) 10,000 feet at a slope of 50 to 1 with an additional 40,000 feet at a slope of 40 to 1 for all precision instrument runways.
- (3) The outer width of an approach surface to an end of a runway will be that width prescribed in this subsection for the most precise approach existing or planned for that runway end.²⁸

²⁷ *Id.* § 77.19(c).

²⁸ *Id.* § 77.19(d).

Finally, there is a transitional surface, which is defined as follows:

These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces. Transitional surfaces for those portions of the precision approach surface which project through and beyond the limits of the conical surface, extend a distance of 5,000 feet measured horizontally from the edge of the approach surface and at right angles to the runway centerline.²⁹

The governing FAA obstruction standards are found in 14 C.F.R. § 77.17, which provides, *inter alia*:

(a) An existing object, including a mobile object is, and a future object would be an obstruction to air navigation if it is of greater height than any of the following heights or surfaces:

(1) A height of 499 feet AGL at the site of the object.

(2) A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile from the airport up to a maximum of 499 feet.

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

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

(5) The surface of a takeoff and landing area of an airport or any imaginary surface established under § 77.19, 77.21, or 77.23. However, no part of the takeoff or landing area itself will be considered an obstruction.³⁰

IV. THE FAA AERONAUTICAL STUDY

Generally, the FAA will issue an NPH after the filing of an FAA Form 7460-1. The NPH may note that the proposed struc-

²⁹ *Id.* § 77.19(e).

³⁰ *Id.* § 77.17(a).

ture will require an increase in the MDA for an IAP, will penetrate the 40:1 obstacle identification surface for aircraft departing from the runway serviced by a precision instrument approach procedure, or will penetrate the 34:1 approach surface for a non-precision instrument approach to a runway.³¹ There are numerous possibilities for penetrations of navigable airspace by virtue of the “imaginary surfaces” described above. In response to the filing of a 7460–1, the FAA routinely issues an NPH. However, invariably, the NPH invites the sponsor of the construction or structure to seek an aeronautical study, which may result in a DNH issuance.³²

The statutory criteria for conducting an aeronautical study are set forth in 49 U.S.C. § 44718(b)(1), which requires the Secretary of Transportation to:

- (A) consider factors relevant to the efficient and effective use of the navigable airspace, including—
 - (i) the impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules;
 - (ii) the impact on arrival, departure, and en route procedures for aircraft operating under instrument flight rules;
 - (iii) the impact on existing public-use airports and aeronautical facilities;
 - (iv) the impact on planned public-use airports and aeronautical facilities;
 - (v) the cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures;
 - (vi) the impact on launch and reentry for launch and reentry vehicles arriving or departing from a launch site or reentry site licensed by the Secretary of Transportation; and
 - (vii) other factors relevant to the efficient and effective use of navigable airspace³³

Upon completion of the aeronautical study, the Secretary of Transportation is required to issue a report disclosing the “adverse impact on the safe and efficient use of the navigable airspace that the Secretary finds will result from constructing or altering the structure and . . . unacceptable risk to the national

³¹ See, e.g., *Tooele Valley Airport Overlay Zone Ordinance Draft and Recommendation*, TOOELE COUNTY PLANNING COMMISSION (Aug. 18, 2021), <https://www.utah.gov/pmn/files/746685.pdf> [<https://perma.cc/P2B7-97QX>].

³² See 14 C.F.R. § 77.31(d).

³³ 49 U.S.C. § 44718(b)(1)(A).

security of the United States, as determined by the Secretary of Defense under [49 U.S.C. § 44718(f)].”³⁴

The regulatory counterpart of 49 U.S.C. § 44718 is 14 C.F.R. § 77.29, which calls for the FAA to evaluate:

- (1) The impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules;
- (2) The impact on arrival, departure, and en route procedures for aircraft operating under instrument flight rules;
- (3) The impact on existing and planned public use airports;
- (4) Airport traffic capacity of existing public use airports and public use airport development plans received before the issuance of the final determination;
- (5) Minimum obstacle clearance altitudes, minimum instrument flight rules altitudes, approved or planned instrument approach procedures, and departure procedures;
- (6) The potential effect on ATC radar, direction finders, ATC tower line-of-sight visibility, and physical or electromagnetic effects on air navigation, communication facilities, and other surveillance systems;
- (7) The aeronautical effects resulting from the cumulative impact of a proposed construction or alteration of a structure when combined with the effects of other existing or proposed structures.³⁵

In addition to following the guidelines in 49 U.S.C. § 44718(b) and 14 C.F.R. § 77.29(a), the FAA OEG must also follow the Procedures for Handling Airspace Matters, FAA Order JO 7400.2N (the “Handbook”).³⁶

Before analyzing the Handbook, it is important to remember that there are objective, scientific criteria for evaluating hazards to air navigation by virtue of the myriad of regulations and FAA Orders discussed above. According to the FAA standards, “[o]bjects that are considered obstructions under the standards described in this subpart are presumed hazards to air navigation unless further aeronautical study concludes that the object is not a hazard.”³⁷ The obstruction standards are set out in detail in 14 C.F.R. § 77.17. There are at least five imaginary surfaces designed by the FAA to identify obstructions and to prevent air-

³⁴ *Id.* § 44718(b)(2).

³⁵ 14 C.F.R. § 77.29(a)(1)–(7) (2021).

³⁶ *See generally* Procedures for Handling Airspace Matters, FAA Order JO 7400.2N (June 17, 2021) [hereinafter Handbook], https://www.faa.gov/documentLibrary/media/Order/7400.2N_Bsc_dtd_6_17_21.pdf [<https://perma.cc/5ZAF-N5P7>].

³⁷ 14 C.F.R. § 77.15(b).

craft colliding with those obstructions: (1) the horizontal surface; (2) the conical surface; (3) the primary surface; (4) approach surfaces which may consist of either precision or non-precision approaches; and (5) the transitional surfaces that extend upward and outward from the runway centerline at a slope of seven to one.³⁸ Additionally, the design standards for public-use airports are set forth in FAA Advisory Circular 150/5300-13A, which recognizes imaginary surface requirements to separate aircraft from structures.³⁹ Further, 14 C.F.R. § 91.119(c) forbids the operation of aircraft below “[a]n altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.”⁴⁰ Finally, the Aeronautical Information Manual provides for a 40:1 obstacle identification surface that begins at the departure end of the runway to keep obstructions out of the aircraft’s flight path.⁴¹

The scientific and objective criteria that went into developing the foregoing regulations, orders, and standards is largely vitiated by the Handbook that substitutes subjective standards in lieu of objective standards to ensure air safety. For example, Section 7.1.1 of the Handbook requires the issuance of a determination of hazard only if there is a “*substantial* physical or electromagnetic adverse effect [upon navigable airspace or air navigation facilities].”⁴² The Handbook calls for issuing several responses to an obstruction evaluation such as a “Does Not Exceed” determination (automated DNE letter),⁴³ an “Exceeds But Okay” (automated EBO letter),⁴⁴ a “Notice of Preliminary Findings” (automated NPF letter),⁴⁵ a “Determination of No Hazard” (DNH),⁴⁶ and a “Determination of Hazard” (DOH).⁴⁷ The pre-

³⁸ See *supra* note 24.

³⁹ FED. AVIATION ADMIN., ADVISORY CIRCULAR NO. 150/5300-13A, AIRPORT DESIGN (2014), https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5300-13A-chg1-interactive-201907.pdf [<https://perma.cc/3KPQ-C3MS>].

⁴⁰ 14 C.F.R. § 91.119(c).

⁴¹ FED. AVIATION ADMIN., AERONAUTICAL INFORMATION MANUAL, CHAPTER 5: AIR TRAFFIC PROCEDURES § 2, para. 5-2-9(e)(3) (2021), https://www.faa.gov/Air_traffic/Publications/atpubs/aim_html/chap5_section_2.html#2I2s71315Chri [<https://perma.cc/2RU9-QZNX>].

⁴² Handbook, *supra* note 36, § 7-1-1 (emphasis added).

⁴³ *Id.* § 7-1-3(a).

⁴⁴ *Id.* § 7-1-3(b).

⁴⁵ *Id.* § 7-1-3(c).

⁴⁶ *Id.* § 7-1-3(d).

⁴⁷ *Id.* § 7-1-3(e).

ceding letters are replete with language about the FAA entering into “negotiations” with the proponent of the potential hazard to air navigation.⁴⁸ For instance, “[i]f negotiation is successful, and resolution is achieved, or further study is completed, an appropriate subsequent determination should be issued.”⁴⁹ In the event of a DOH, “the structure would have or has a *substantial* adverse effect; [and] *negotiations* with the sponsor have been unsuccessful in eliminating the *substantial* adverse effect”⁵⁰

To oppose the construction of obstructions near a public-use airport, a person should demonstrate to the court that the criteria dealing with obstructions to air navigation have not been satisfied. Such criteria should include that set out in Section 7-1-3(e) of the Handbook, which calls for the issuance of a DOH “if the structure would have or has a substantial adverse effect.”⁵¹ Remember, the purported objective of the FAA in conducting obstruction evaluation studies is “to ensure the safety of air navigation, and the efficient utilization of navigable airspace by aircraft.”⁵² According to the scope for obstruction evaluation studies as set forth in the Handbook, “[a] structure that exceeds one or more of these standards is presumed to be a hazard to air navigation unless the aeronautical study determines otherwise.”⁵³ Furthermore, the FAA must consider the effect the structure would have on existing and proposed public-use airports; VFR and IFR flight operations; airport capacity; and “physical, electromagnetic, or line-of-sight interference on existing or proposed air navigation, communications, radar, and control systems facilities.”⁵⁴ According to the Handbook, there will be an adverse effect if an obstruction exceeds the Part 77 standards and requires “a change to an existing or planned IFR minimum flight altitude” or will require “a VFR operation[] to change its regular flight course or altitude.”⁵⁵

Importantly, “one or more aeronautical operations per day”⁵⁶ could be a significant volume of activity to decide on a hazard.

⁴⁸ See, e.g., *id.* § 7-1-3(c) (“The NPH facilitates negotiations and is useful in preserving navigable airspace.”).

⁴⁹ *Id.*

⁵⁰ *Id.* § 7-1-3(e) (emphasis added).

⁵¹ *Id.*

⁵² *Id.* § 6-3-1(a).

⁵³ *Id.* § 6-3-2.

⁵⁴ See *id.* § 6-3-2(a).

⁵⁵ *Id.* § 6-3-3(a)-(b).

⁵⁶ *Id.* § 6-3-4.

According to the Handbook, there is a substantial adverse effect if the following is found:

A proposed structure would have, or an existing structure has, a substantial adverse effect if it causes electromagnetic interference to the operation of an air navigation facility or the signal used by aircraft, or if there is a combination of:

- (a) Adverse effect as described in paragraph 6-3-3; and
- (b) A significant volume of aeronautical operations, as described in paragraph 6-3-4, would be affected.⁵⁷

Accordingly, if there is a requirement to change an IFR minimum flight altitude or a VFR regular flight course or altitude under Part 77 obstruction standards and if “one or more aeronautical operations per day would be affected,”⁵⁸ then persons or entities opposing the erection of a wind farm or other structure might successfully demonstrate to the court that the structure would constitute a “substantial adverse effect” under the Handbook.⁵⁹

Additional language that is helpful to opponents of wind farms and other structures may be found in Section 6-3-8 of the Handbook, which provides as follows:

(a) **PURPOSE.** These guidelines are for use in determining the effect of structures, whether proposed or existing, upon VFR aeronautical operations in the navigable airspace. The intent of these guidelines is to provide a basis for analytical judgments in evaluating the effect of structures on VFR operations.

(b) **CONSIDERATIONS.**

(1) **Minimum VFR Flight Altitudes.** Minimum VFR flight altitudes are prescribed by regulation. Generally speaking, from a VFR standpoint, the navigable airspace includes all airspace 500 feet AGL or greater and that airspace below 500 feet required for:

- (a) Takeoff and landing, including the airport traffic pattern.
- (b) Flight over open water and sparsely populated areas (an aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure).
- (c) Helicopter operations when the operation may be conducted without hazard to persons and property on the surface.

⁵⁷ *Id.* § 6-3-5.

⁵⁸ *See id.* § 6-3-4.

⁵⁹ *See id.* § 6-3-5.

(2) VFR Weather Minimums. Proposed or existing structures potentially have the greatest impact in those areas where VFR operations are conducted when ceiling and/or visibility conditions are at or near VFR weather minimums. Any structure that would interfere with a significant volume of low altitude flights by actually excluding or restricting VFR operations in a specific area would have a substantial adverse effect and may be considered a hazard to air navigation.⁶⁰

If the structure will have an adverse effect on IFR operations, a review of Section 6-3-9 of the Handbook is indicated because it provides, *inter alia*:

Departure Procedures. TERPS, Chapter 12, Civil Utilization of Area Navigation (RNAV) Departure Procedures, contains criteria for the development of IFR departure procedures. An obstacle that penetrates the 40:1 departure slope is considered to be an obstruction to air navigation. Further study is required to determine if adverse effect exists. Any proposed obstacle that penetrates the 40:1 departure slope, originating at the departure end of runway (DER) by up to 35 feet will be circularized. If an obstacle penetrates the 40:1 departure slope by more than 35 feet, it is presumed to be a hazard, and a Notice of Presumed Hazard will be issued, and processed accordingly. Analysis by the Terminal Procedures and Charting Group and air traffic personnel is necessary to determine if there would be a substantial adverse effect on the navigable airspace.⁶¹

V. APPEALS OF FAA FINAL ORDERS TO THE UNITED STATES COURTS OF APPEAL

A. STANDING AND SEEKING STAYS OF THE FAA FINAL ORDER

If the proposed structure has the potential for creating electromagnetic interference, those adverse effects must be identified and stated,⁶² and “[t]echnical operations services personnel must evaluate notices to determine if the structure will affect the performance of existing or proposed [National Airspace System] facilities.”⁶³

If the FAA or the OEG initially issues an NPH followed by a DNH, persons or entities opposing the latter may petition for review before the FAA within thirty days of the issuance of the

⁶⁰ *Id.* § 6-3-8(a), (b)(1)–(2).

⁶¹ *Id.* § 6-3-9(e)(4).

⁶² *Id.* § 6-3-10(a).

⁶³ *Id.* § 6-3-10(b).

DNH.⁶⁴ In the event the FAA or the OEG issues a final order affirming the DNH, then the opponents to the wind farm or structure have sixty days to file a petition for review with a United States Court of Appeals, either for the circuit in which the airport or project is located or in the United States Court of Appeals for the District of Columbia Circuit.⁶⁵ For persons or entities opposing the construction of the wind farm or structure to be heard on their appeal, they must demonstrate they have standing under Article III of the U.S. Constitution; the elements of standing are: “(1) injury-in-fact, (2) causation, and (3) redressability.”⁶⁶ Counsel representing persons or entities opposed to the construction of wind turbines near a public-use airport should anticipate that counsel for FAA will argue the persons or entities lack standing. Such an argument was raised in *Clark County v. FAA* where the United States Court of Appeals for the District of Columbia Circuit rejected the argument and stated, “[i]n sum, the FAA’s standing argument is meritless—akin to arguing that homeowners have no standing to object to federal approval of a toxic dump or dam being built in their neighborhood.”⁶⁷

Similarly, in *Town of Barnstable v. FAA (Barnstable I)*, the United States Court of Appeals for the District of Columbia Circuit found standing concerning 130 identical Determinations of No Hazard for wind turbines.⁶⁸ There, the petitioners demonstrated that if the FAA changed its position and issued a Determination of Hazard, it was likely that the Interior Department would reverse its position and not grant a lease to the proponents of the wind farm construction.⁶⁹ If petitioners are seeking to reverse an FAA final agency decision upholding a Determination of No Hazard desire to stay the effectiveness of the final order, then they will need to petition the FAA to stay the final order.⁷⁰ If the FAA denies the petition, the petitioners will need to file a motion to stay the final order with the appropriate United States Court of Appeals.⁷¹

⁶⁴ See 14 C.F.R. §§ 77.35, 77.39(a) (2021).

⁶⁵ See 49 U.S.C. § 46110(a).

⁶⁶ *Sierra Club v. EPA*, 292 F.3d 895, 898 (D.C. Cir. 2002).

⁶⁷ 522 F.3d 437, 440 (D.C. Cir. 2008) (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 572 n.7 (1992)).

⁶⁸ 659 F.3d 28, 30 (D.C. Cir. 2011).

⁶⁹ *Id.* at 32.

⁷⁰ See FED. R. APP. P. 18(a)(1).

⁷¹ See FED. R. APP. P. 18(a)(2).

B. SCOPE OF REVIEW

The scope of review by the circuit courts of appeal of an FAA final order is limited. Generally speaking, under the Administrative Procedure Act (APA), the various courts of appeal apply an arbitrary and capricious standard, and agency determinations will be upheld “so long as the agency ‘engaged in reasoned decisionmaking and its decision is adequately explained and supported by the record.’”⁷²

C. CIRCUIT COURT DECISIONS FINDING THE FAA ACTED IN AN ARBITRARY AND CAPRICIOUS MANNER

In *Clark County v. FAA*, Clark County, Nevada, petitioned the United States Court of Appeals for the District of Columbia Circuit for judicial review of an FAA final order, which declared that a proposed wind farm would not obstruct airspace near the proposed airport or pose a hazard by interfering with radar systems at the new airport.⁷³ As previously noted, the FAA initially argued that Clark County lacked standing, an argument the circuit court found to be “meritless.”⁷⁴ The court found that there was injury-in-fact because “the proposed wind turbines would pose a hazard to planes flying near its planned airport and . . . the turbines would interfere with radar units at the airport.”⁷⁵ The court also found the requirement for redressability was satisfied because “a hazard determination by the FAA would preclude construction.”⁷⁶ Nevada is one of the jurisdictions that apparently “follows” the FAA decision about whether there is a determination of hazard or no hazard. A lengthier discussion of this topic appears below.

The circuit court cited 49 U.S.C. § 44718(b)(1), remarking that the question of the aeronautical study was whether the construction of the wind turbines would “result in an obstruction of the navigable airspace or an interference with air navigation facilities and equipment or the navigable airspace.”⁷⁷ The court found that the “FAA conducted the aeronautical studies under its Part 77 regulations governing ‘objects affecting navigable air-

⁷² *Clark Cnty.*, 522 F.3d at 441 (citation omitted); see also Administrative Procedure Act § 10(e)(B)(1), 5 U.S.C. § 706(2)(A).

⁷³ *Clark Cnty.*, 522 F.3d at 438.

⁷⁴ *Id.* at 440.

⁷⁵ *Id.*

⁷⁶ *Id.* (citing CLARK COUNTY, NEV., CODE § 30.56.070(c) (2021)).

⁷⁷ *Id.* at 439 (citing 49 U.S.C. § 44718(b)(1)).

space’ and its procedural handbook for Part 77 studies.”⁷⁸ But it determined that “the FAA did not conduct formal, on-the-record hearings; rather, its ‘Does Not Exceed’ determinations were the product of *informal* adjudication. We review these informal adjudicatory determinations under the APA to determine whether they are ‘arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.’”⁷⁹

The court specifically referred to paragraph 6-3-9(e)(4) of FAA Order 7400.2F, which “requir[es] [the] FAA to issue [a] Notice of Presumed Hazard when [the] structure penetrates [the] 40:1 departure slope by more than 35 feet.”⁸⁰ While the FAA official who issued the “Does Not Exceed” determinations found that there were “‘no Part 77 penetrations—clear as a bell’ and that there ‘[were] NO Part 77 penetrations within this project area,’”⁸¹ the court observed that “[t]he 40:1 Reports in the record here indicate that the wind turbines would significantly penetrate the 40:1 slope for runways at the Ivanpah Airport (and at the nearby Henderson Airport, which serves general-aviation traffic).”⁸² The court could not reconcile the conclusions of the FAA employee who found that there were no Part 77 penetrations with the 40:1 reports that showed the wind turbines would significantly penetrate the 40:1 departure slope.⁸³ Accordingly, the court concluded that “the FAA’s determinations d[id] not satisfy the APA’s reasoned decisionmaking requirement with respect to the agency’s Part 77 obstruction standards.”⁸⁴

In addition to the court’s finding that the FAA had not engaged in reasoned decision-making, the court also accepted a submitted analysis by ASRC Aerospace Corporation, which revealed that the wind turbines “will likely show up on the [radar] display of air traffic control”⁸⁵ and “each wind turbine has a radar ‘signature approximately that of a jumbo jet.’”⁸⁶ The court also weighed in the FAA Airway Facilities Division objection to the wind turbines due to their proximity to air traffic radar facil-

⁷⁸ *Id.* (citing Procedures for Handling Airspace Matters, FAA Order 7400.2F (Feb. 16, 2006), <https://www.faa.gov/documentLibrary/media/Order/7400.2F%20CHG%203.pdf> [<https://perma.cc/QL3D-MDLY>]).

⁷⁹ *Id.* at 441.

⁸⁰ *Id.* at 442.

⁸¹ *Id.*

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ *Id.*

ities and the FAA Flight Procedures Office's conclusion that the wind turbines could have an adverse impact on air navigation facilities.⁸⁷ Finally, the FAA Flight Procedures Office declared in an email to the FAA Obstacle Evaluation Service that "[h]istory has borne out the fact that wind turbines can impact RADAR and other' navigational aids, and the wind turbine project needs 'to be brought to the attention of' the FAA's Airports Division."⁸⁸ In light of the foregoing facts, the court reversed the FAA's final order because the order did not satisfy the reasoned decision-making requirements of the APA.⁸⁹

The decision of the United States Court of Appeals for the District of Columbia Circuit in *Clark County v. FAA* illustrates the atrocious lack of care the FAA OEG can employ in issuing a determination of no hazard. Again, in that case, there was clear, scientific, and empirical evidence in the record that the proposed turbines would penetrate the 40:1 departure slope, but the FAA concluded otherwise with no factual basis for its opinion. Unfortunately, this lack of care in issuing no hazard determinations is not the exception. It is the norm.

In *Barnstable I*, the town of Barnstable, Massachusetts, and a non-profit organization of private citizens and other organizations petitioned for a review of the FAA DNHs issued for the construction of 130 wind turbines in Nantucket Sound.⁹⁰ In conducting its analysis, the United States Court of Appeals for the District of Columbia Circuit specifically considered language in 49 U.S.C. § 44718(b), where the criterion of the study is supposed to be whether the project would "result in an obstruction of the navigable airspace or an interference with air navigation facilities and equipment or the navigable airspace."⁹¹ Once again, the FAA challenged the petitioners' standing to bring the petition for review, claiming the Interior Department had jurisdiction over whether to issue a lease to the proponents of the wind farm.⁹² The court noted, however, that the Interior Department "gave its blessing to the FAA to impose any future mitiga-

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.* at 443.

⁹⁰ *Town of Barnstable v. FAA (Barnstable I)*, 659 F.3d 28, 30–31 (D.C. Cir. 2011).

⁹¹ *Id.* at 30.

⁹² *See id.* at 31–32 ("[T]he FAA's hazard determinations, by themselves, have 'no enforceable legal effect.' . . . The Interior Department . . . is the ultimate arbiter.").

tion measures that the FAA might deem necessary to reduce or eliminate a hazard on Cape Wind, and to do so without any further consultation.”⁹³ The court further noted that the Interior Department “would take an FAA finding of hazard very, very seriously.”⁹⁴ Finally, the Interior Department “conditioned any start of construction on receipt of a final FAA determination.”⁹⁵ Based on this record, the court found the petitioners demonstrated standing to bring the petition by showing injury, causation, and redressability.⁹⁶ There was evidence in the record that the wind farm would pose a safety risk to pilots operating in Nantucket Sound during foggy and otherwise inclement weather, which often plagued the area.⁹⁷ The court noted that “[d]uring such times, there would be a ‘clear risk of collision with the wind turbine generators.’”⁹⁸ The chairman of the Barnstable airport submitted a report indicating that the “‘finely balanced airspace over Nantucket Sound is already one of the most congested, foggy, and dangerous airspaces on the eastern seaboard.’”⁹⁹ A group of air traffic controllers summed up the situation by stating that erecting the turbines in the area “would be a ‘disaster waiting to happen.’”¹⁰⁰

The court negated the argument that VFR pilots attempting to operate in Nantucket Sound in inclement weather could simply circumnavigate the wind farm.¹⁰¹ After reviewing the volume of traffic and its multiple layers, the CEO and President of Island Airways indicated that such flight operations in the vicinity of the wind farm would be “problematic because even horizontal diversions of only one or two miles can further compress air traffic into concentrated corridors.”¹⁰² The record before the court indicated a “‘horizontal diversion around a 25 square mile project would certainly lead to concentrated corridors of travel’ and thereby ‘increase the possibility of a collision.’”¹⁰³ Finally, the evidence in the record indicated that encroachment of established VFR routes would clearly compromise the pilots’ abil-

⁹³ *Id.* at 32.

⁹⁴ *Id.*

⁹⁵ *Id.* at 33.

⁹⁶ *See id.* at 31.

⁹⁷ *Id.* at 32.

⁹⁸ *Id.* at 33.

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *See id.*

¹⁰² *Id.*

¹⁰³ *Id.*

ity to implement collision avoidance procedures while in the center of Nantucket Sound's three airports.¹⁰⁴

The petitioners made two arguments on the merits. The first argument was that the FAA's decision was arbitrary and capricious because it departed from its internal guidelines.¹⁰⁵ The second argument was "that the FAA failed to fulfill its obligations under 49 U.S.C. § 44718(b)."¹⁰⁶ In reversing the FAA, the court found it only had to reach the first argument; that is, the FAA had acted arbitrarily and capriciously.¹⁰⁷

The court found that according to the FAA's procedures for handling airspace matters—specifically, FAA Order JO 7400.2G—the "FAA can find a hazard if the proposed structure would have a 'substantial adverse effect.'"¹⁰⁸ The court identified that a substantial adverse effect existed if, under §§ 6-3-4 and 6-3-5 of FAA Order JO 7400.2G, the structure would impact one or more aeronautical operations per day.¹⁰⁹

In issuing its final order, the FAA ignored §§ 7-1-3, 6-3-5, and 6-3-4 of FAA Order JO 7400.2G and relied only on § 6-3-8(c)(1) of FAA Order JO 7400.2G, which provided that "[a] structure would have an adverse [aeronautical] effect upon VFR air navigation if its height is greater than 500 feet above the surface at its site, and within 2 statute miles of any regularly used VFR route."¹¹⁰ Taking § 6-3-8(c) of FAA Order JO 7400.2G totally out of context, the FAA concluded that because the structures would not be more than 500 feet AGL, they would not be an obstruction to air navigation.¹¹¹ In doing so, the FAA completely ignored § 6-3-3 of FAA Order JO 7400.2G, which provided:

A structure is considered to have an adverse aeronautical effect if it first exceeds the obstruction standards of part 77, *and/or* is found to have physical or electromagnetic radiation effect on the operation of air navigation facilities. A proposed or existing structure, if not amended, altered, or removed, has an adverse effect if it would:

. . . .

¹⁰⁴ *Id.*

¹⁰⁵ *Id.* at 34.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *Id.* (citing Procedures for Handling Airspace Matters, FAA Order JO 7400.2G, § 7-1-3(e) (Apr. 10, 2008), <https://www.faa.gov/documentLibrary/media/Order/7400.2G.pdf> [<https://perma.cc/RT76-WEJZ>]).

¹⁰⁹ *See id.*

¹¹⁰ *Id.* at 35.

¹¹¹ *See id.*

(b) Require a VFR operation[] to change its regular flight course or altitude.¹¹²

To be clear, the FAA relied solely on § 6-3-8(c)(1) of FAA Order JO 7400.2G and concluded that the analysis of whether there was a “substantial adverse effect” was unnecessary because the wind turbines were less than 500 feet AGL.¹¹³ In vacating and remanding the case to the FAA, the United States Court of Appeals for the District of Columbia Circuit declared:

The FAA repeatedly notes in its brief that the handbook “largely consists of criteria rather than rules to follow.” . . . We agree. Any sensible reading of the handbook, and of § 6-3-8(c) 1 in particular, would indicate there is more than one way in which the wind farm can pose a hazard to VFR operations. Indeed, other sections of the handbook, especially when read in light of some of the evidence noted above, suggest that the project may very well be such a hazard. Here, by abandoning its own established procedure, . . . the FAA catapulted over the real issues and the analytical work required by its handbook.¹¹⁴

In *Town of Barnstable v. FAA (Barnstable II)*,¹¹⁵ the FAA—on remand from the decision in *Barnstable I*¹¹⁶—collected traffic data and “hired the MITRE Corporation to assess the project’s effects on VFR flights.”¹¹⁷ The traffic study ran from January 1–September 30, 2011, and found that 427 VFR flights of aircraft equipped with transponders flew over the proposed location of the wind farm at altitudes of 949 feet or below, “flights that presumably would have had to change altitude or route had the wind farm been in existence.”¹¹⁸ Throughout the nine-month study, “the greatest number of transponder-equipped VFR flights that passed over the turbines’ proposed location at an altitude of 949 feet or below was nine and occurred three times.”¹¹⁹ Some FAA-solicited public comments suggested, “that any adjustments to flight paths or altitudes would be minor and brief.”¹²⁰ The FAA concluded that the construction of the wind farm would have no adverse effect.¹²¹ The United States Court

¹¹² *Id.*

¹¹³ *See id.*

¹¹⁴ *Id.* at 36 (citations omitted).

¹¹⁵ 740 F.3d 681 (D.C. Cir. 2014).

¹¹⁶ 659 F.3d 28 (D.C. Cir. 2011).

¹¹⁷ *Barnstable II*, 740 F.3d at 685.

¹¹⁸ *Id.* at 685–86 (citing 14 C.F.R. § 91.119(a), (c) (2021)).

¹¹⁹ *Id.* at 686.

¹²⁰ *Id.*

¹²¹ *Id.*

of Appeals for the District of Columbia Circuit affirmed, declaring:

[T]he FAA on remand addressed the court's concern in *Barnstable I* by hiring the MITRE Corporation to do a further study, which found that most VFR flights would be over just four turbines in one corner of the wind farm, and by seeking public comments and responding to aeronautical objections to the wind farm.¹²²

D. THE DUTY OF THE FAA TO GIVE PUBLIC NOTICE OF THE AERONAUTICAL STUDY

49 U.S.C. § 44718(a) requires the public to be given adequate notice in relation to filing an FAA Form 7460-1.¹²³ As is apparent from a review of this article, the FAA does not conduct a formal, on-the-record hearing but rather conducts an informal adjudication.¹²⁴ Because the FAA determinations result from an informal adjudication, it is all the more urgent that the public be made aware of the potential erection of structures that could compromise or jeopardize the integrity or safety of a public-use airport. In *White Industries, Inc. v. FAA*, the United States Court of Appeals for the Eighth Circuit reversed the FAA's no hazard determination because the agency failed to consider the comments of Mr. White, who planned to build an airport.¹²⁵ The FAA refused to consider Mr. White's comments on the theory that the airport did not exist yet.¹²⁶ However, the court reversed the FAA finding that this was a factual determination and concluded that the FAA arbitrarily made a determination without a hearing.¹²⁷ Reversing the FAA, the court declared:

The FAA made no findings of fact as to whether it received actual notice of a proposed, public use airport and whether it promised to provide petitioner, as an interested person, with the opportunity to comment. Accordingly, we remand this case to the FAA for an evidentiary hearing to rule on the factual issues raised by the petitioner, in light of the correct legal standards.¹²⁸

¹²² *Id.* at 689.

¹²³ *See* 49 U.S.C. § 44718(a).

¹²⁴ *See, e.g.,* Clark Cnty. v. FAA, 522 F.3d 437, 441 (D.C. Cir. 2008).

¹²⁵ *White Industries, Inc. v. FAA*, 692 F.2d 532, 533 (8th Cir. 1982).

¹²⁶ *See id.* at 534 (Other arguments proffered by the FAA included that the airport was not planned for public use and that the airport was not "the subject of a notice or proposal on file with the FAA.")

¹²⁷ *See id.* at 534-35.

¹²⁸ *Id.* at 535.

In *BFI Waste Systems of North America, Inc. v. FAA*, the FAA failed to circularize the notice required.¹²⁹ The United States Court of Appeals for the District of Columbia Circuit granted the petition, noting that the FAA was required to give notice of the aeronautical study but did not “explain its reasons for declining to do so.”¹³⁰ Accordingly, as a practice note, counsel for petitioners before the United States Courts of Appeals will want to examine the record to ascertain whether the FAA gave adequate notice of the aeronautical study since failure to do so may be grounds for reversal of the final order.

VI. CAN THE STATE ENJOIN CONSTRUCTION OF STRUCTURES NEAR AIRPORTS AS A NUISANCE EVEN IF THE FAA ISSUED A DETERMINATION OF NO HAZARD?

The weight of FAA’s determination of hazards on a proposed project’s outcome depends on the jurisdiction. For example, in the State of Iowa, the local airport zoning commission can bring an action to enjoin the construction of a structure near an airport deemed a nuisance even if the FAA has issued a determination of no hazard.¹³¹ In *Carroll Airport Commission v. Danner*, the Supreme Court of Iowa affirmed a district court decision which held that a local airport commission had the authority to petition a twelve-story grain elevator erected near an airport for abatement, even though the FAA had already issued a determination of no hazard.¹³² The Iowa Supreme Court declared,

On our de novo review, we determine that the Federal Aviation Act allows for local zoning regulation, and the no-hazard letter did not preempt the local airport zoning regulations as a matter of law. We affirm the district court’s finding the structure constitutes a threat to aviation requiring abatement.¹³³

The structure in *Danner* was well within the local government’s regulatory reach. The Danner farm that had constructed the grain elevator sat in the flight path of the Arthur N. Neu Municipal Airport, which the Carroll Airport Commission managed.¹³⁴ The structure at issue was 127 feet tall and stood within

¹²⁹ *BFI Waste Systems of North America, Inc. v. FAA*, 293 F.3d 527, 530 (D.C. Cir. 2002).

¹³⁰ *Id.* at 532–33.

¹³¹ *Carroll Airport Commission v. Danner*, 927 N.W.2d 635, 639–40 (Iowa 2019).

¹³² *Id.*

¹³³ *Id.* at 640.

¹³⁴ *Id.*

10,000 feet horizontally from the end of a runway, making its location within the airport's "protected zone."¹³⁵ Additionally, its height intruded sixty feet into restricted airspace.¹³⁶

The initial misunderstanding by the farm owner and permit issuer about compliance led to the grain elevator's unfavorable construction.¹³⁷ The Danners had received a building permit with an agriculture exemption from the county zoning ordinances, but it "did not exempt the Danners from the airport zoning ordinances."¹³⁸ The building permit application—completed by the Danners—even stated that "[a]ll farm buildings or structures [were] subject to the Airport Zoning Ordinances which regulate[] height and emissions in and around the airport air space as depicted on the attached diagram[.]"¹³⁹ Despite the warning on the application, the court noted that neither the Danners nor Carl Wilburn, the county zoning administrator, were aware that the exemption did not include airport zoning regulations.¹⁴⁰

Thus, the Carroll Airport Commission was not notified until the grain elevator was already being built.¹⁴¹ Commissioner Greg Siemann grew concerned when he noticed the construction and contacted Wilburn and Greg Schreck, the city zoning commissioner.¹⁴² After learning about the issued permit and misunderstanding, the Commission notified the Danners about the variance requirement from the Airport Zoning Regulations but informed them that it would not grant it nor allow a regulation violation, and the Commission asked the FAA to conduct an aeronautical study of the structure, including its impact on aviation safety.¹⁴³

The FAA's determination after the study seemed to be accepted by both parties.¹⁴⁴ The FAA issued a DNH in July of 2013, finding that the structure exceeded obstruction standards, but it would not be a hazard to air navigation if the Danners painted

¹³⁵ *See id.* ("Local zoning ordinances mandate[d] a protected zone around the airport that extends 10,000 feet horizontally from the end of [runways] . . .").

¹³⁶ *Id.*

¹³⁷ *See id.*

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ *See id.*

¹⁴¹ *See id.*

¹⁴² *Id.*

¹⁴³ *See id.* at 641.

¹⁴⁴ *See id.*

the structure and added red lights on top of it.¹⁴⁵ The Airport Commission did not seek judicial review of the FAA's DNH, and so the Danners complied with the FAA's instruction.¹⁴⁶ As an added precaution, "[t]he FAA issued a 'Notice to Airmen' (NOTAM) that raised the minimum descent [altitude] for the airport by 100 feet, requiring pilots to approach the airport at a higher altitude."¹⁴⁷ Notably, however, the FAA warned the Danners in the no hazard letter that they were still not relieved from complying with "any law, ordinance, or regulation of any . . . local government body."¹⁴⁸

However, the Danners' compliance with the FAA's recommendations did not protect them from the Airport Commission's subsequent lawsuit. In July 2015, the Airport Commission filed an action stating that the grain elevator "violated certain building ordinances, city and county zoning ordinances, and airport commission regulations, and constituted a nuisance and hazard to air traffic."¹⁴⁹ The Airport Commission sought equitable relief in the form of an injunction requiring either the modification or removal of the grain elevator.¹⁵⁰ In response, the Danners demanded a jury trial and raised the affirmative defense of federal preemption.¹⁵¹ The district court struck the jury demand because the case was filed in equity, and the case proceeded to a bench trial.¹⁵²

At trial, the Airport Commission's arguments focused on airport safety whereas the Danners' arguments focused on financial costs. The Airport Commission brought in the following five witnesses: "C. Peter Crawford, the engineer for the airport; John McLaughlin, a meteorologist, pilot, and flight instructor; Donald Mensen, fixed base operator of the airport; Kevin Wittrock, a commissioner and a pilot; and [Greg] Siemann, an attorney, pilot, and commissioner."¹⁵³ The pilots spoke about their experiences flying over the grain elevator and "expressed their concerns for student pilots or pilots distracted while landing."¹⁵⁴ The Airport Commission presented testimony that also ad-

¹⁴⁵ *See id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ *Id.*

dressed costs—namely, the risk of losing federal grant money—but the record indicated that the airport had received federal grant funds even after the Danners erected the grain elevator.¹⁵⁵ On the other hand, Loren Danner testified that the grain elevator's total cost thus far was approximately \$315,870.¹⁵⁶ Further, he estimated that the cost of tearing down the structure and rebuilding it to comply with the ordinances would cost approximately \$450,000.¹⁵⁷

The district court ruled in favor of the Airport Commission and determined that the FAA findings were not preemptive of state or local zoning laws.¹⁵⁸ The court found that the structure was a nuisance and an airport hazard under state and local ordinances, and it did not qualify for an agricultural exemption to certain zoning laws.¹⁵⁹ Rejecting the Danners' affirmative defense that the FAA DNH was preemptive, the court explained:

While the FAA regulations certainly do apply, the local county regulations can also be in effect. The local regulations take a more stringent stance on what a hazard is and how it could affect the air space. If the FAA regulations contained all airport and safety regulations there would be no need for the State to designate zoning powers to the Commission. The Court finds that these regulations in fact work together and the FAA regulations and letter sent do not preempt the local regulations.¹⁶⁰

The district court gave no evidentiary weight to the FAA study and DNH; instead, it ordered the structure to be removed or modified according to local regulations.¹⁶¹ The Danners appealed, and the Iowa Court of Appeals affirmed the district court, concluding that the doctrines of express, implied, and conflict preemption did not apply to the FAA DNH.¹⁶² The Danners then applied for review to the Iowa Supreme Court, which was granted.¹⁶³

The Iowa Supreme Court expanded the discussion on federalism by analyzing the Federal Aviation Act and its scope. It framed the issue as follows: "We must decide whether the FAA's

¹⁵⁵ *Id.*

¹⁵⁶ *See id.*

¹⁵⁷ *Id.* at 642.

¹⁵⁸ *See id.*

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ *Id.*

¹⁶² *Id.*

¹⁶³ *Id.*

no-hazard determination for the Danners' grain leg preempts state and local zoning ordinances limiting the height of structures in or near flight paths."¹⁶⁴ The Iowa Supreme Court first observed that the purpose of the Federal Aviation Act of 1958 was to have a single authority that would "frame rules for the safe and efficient use of the nation's airspace."¹⁶⁵ The court cited 49 U.S.C. § 40103(a)(1), which provides that the U.S. Government has exclusive sovereignty over the airspace in the United States.¹⁶⁶ The court then walked through the FAA's procedures and legal bases to determine whether an object is an airport hazard.¹⁶⁷

The court's view then turned to the counterargument that the FAA determinations practically hold no legal effect. Referencing the cases of *Town of Barnstable v. FAA* and *Clark County v. FAA*, it judged that DNHs by the FAA had been successfully challenged.¹⁶⁸ After considering both regulatory and statutory authority, the court declared:

The State of Iowa and Carroll County each have enactments addressing airport hazards. Any city or county with an airport may establish an airport commission to manage and control the airport. . . . These commissions have "all of the powers in relation to airports granted to cities and counties under state law, except powers to sell the airport." . . . These powers include the authority to make decisions with regard to zoning to prevent airport hazards. . . . "In the event of any conflict between any airport zoning regulations adopted or established under this chapter and any other regulations applicable to the same area, . . . the more stringent limitation or requirement shall govern and prevail."¹⁶⁹

The court quoted from Iowa Code § 329.2, which provided:

It is hereby found that an airport hazard endangers the lives and property of users of the airport and of occupants of land and other persons in its vicinity, and also, if of the obstruction type, in effect reduces the size of the area available for the landing, taking off and maneuvering of aircraft, thus tending to destroy or

¹⁶⁴ *Id.* at 643.

¹⁶⁵ *Id.* (citation omitted); *see also* 49 U.S.C. § 44701(a)(5) ("The Administrator of the Federal Aviation Administration shall promote safe flight of civil aircraft in air commerce by prescribing . . . regulations and minimum standards[.]").

¹⁶⁶ *See Danner*, 927 N.W.2d at 643.

¹⁶⁷ *See id.* at 644–45.

¹⁶⁸ *Id.* at 645.

¹⁶⁹ *Id.* at 646 (citing IOWA CODE §§ 329.2–3, 329.8, 330.17(1), 330.21 (2021)).

impair the utility of the airport and the public investment therein. Accordingly, it is hereby declared:

1. That the creation or establishment of an airport hazard is a public nuisance and an injury to the community served by the airport in question.
2. That it is necessary in the interest of public health, safety, and general welfare that the creation or establishment of airport hazards be prevented.
3. That this should be accomplished, to the extent legally possible, by proper exercise of the police power.
4. That the prevention of the creation or establishment of airport hazards, and the elimination, removal, alteration, mitigation, or marking and lighting of existing airport hazards are public purposes for which municipalities may raise and expend public funds, as an incident to the operation of airports, to acquire land or property interests therein.¹⁷⁰

Similar to the lower courts, the Iowa Supreme Court rejected the preemption defense. The Iowa Supreme Court reasoned through the absence of express, conflict, and field preemption.¹⁷¹ First, there was no express preemption because the legislation passed by Congress did not forbid states from regulating public nuisances in relation to airports.¹⁷² Second, there was no conflict preemption because no “conflict” existed between federal statutes regulating airspace and local ordinances forbidding nuisances.¹⁷³ Third, there was no field preemption since Congress had not so thoroughly occupied the field as to preclude state regulations concerning navigable airspace.¹⁷⁴ The Iowa Supreme Court then declared:

On balance, we decline to hold the FAA no-hazard determination preempted enforcement of local zoning requirements. We reiterate that “[t]here is a presumption against preemption.” . . . Federal courts recognize that the FAA’s “hazard/no-hazard determination has no enforceable legal effect” and “[t]he FAA is not empowered to prohibit or limit proposed construction it deems dangerous to air navigation.” . . . Accordingly, that role must fall to state and local government, indicating Congress left room for “cooperative federalism.” . . . In our view, the better reasoned authorities discussed above hold state and local regulators can impose stricter height restrictions on structures in flight

¹⁷⁰ *Id.* (citing IOWA CODE § 329.2 (2021)).

¹⁷¹ *See id.* at 649–53.

¹⁷² *See id.* at 649.

¹⁷³ *See id.*

¹⁷⁴ *See id.* at 650–53.

paths notwithstanding an FAA no-hazard determination. Finally, we rely on the very language of this specific no-hazard determination, which expressly warned the Danners that they still must comply with state and local laws.¹⁷⁵

Accordingly, the Iowa Supreme Court affirmed the injunction that the district court had granted.¹⁷⁶ Although the Danners did not receive a favorable ruling, the court vacated the \$200 per day penalty imposed by the district court that had been accruing during the appeals process.¹⁷⁷ It noted that the Danners raised a matter of first impression as to whether the determination of no hazard had a preemptive effect, and they had pursued the appeal in good faith and with objective reasonableness.¹⁷⁸

While determinations of no hazard do not have a preemptive effect in Iowa, they do have a preemptive effect in California. In *Citizens Opposing a Dangerous Environment v. County of Kern*, a public interest group filed a petition of mandamus challenging the county's certification of an environmental impact report issued for the construction of a wind farm project near a *private* airport.¹⁷⁹ North Sky River Energy, LLC, and Jawbone Wind Energy, LLC—the proponents—requested the construction of 116 wind turbine generators on ridges near the airport, which would block or severely limit the use of two of the three primary approaches to the airport.¹⁸⁰ Gliders traditionally employed the ridgelines to receive additional lift on their return trip to the airport.¹⁸¹ Placing the wind turbine generators on top of the ridgelines would increase the height of the obstruction, eliminating a glider pilot's ability to safely use the ridgeline and decreasing the margins of safety to land at the airport.¹⁸²

In contrast to *Danner*, the local board of zoning supervisors in *Citizens Opposing a Dangerous Environment* supported the construction and were backed by the FAA's determination of no hazard. In fact, the proponents of the 116 wind turbine generators had filed FAA Form 7460-1, but the owner of the private airport was never contacted by the FAA, was never invited to sub-

¹⁷⁵ *Id.* at 653 (citing *Huck v. Wyeth, Inc.*, 850 N.W.2d 353, 363 (Iowa 2014); *Aircraft Owners & Pilots Ass'n v. FAA*, 600 F.2d 965, 966-67 (D.C. Cir. 1979); *Freeman v. Grain Processing Corp.*, 848 N.W.2d 58, 83 (Iowa 2014)).

¹⁷⁶ *Id.* at 655.

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

¹⁷⁹ 174 Cal. Rptr. 3d 683, 686 (Cal. Ct. App. 2014).

¹⁸⁰ *See id.* at 688, 691.

¹⁸¹ *Id.* at 691.

¹⁸² *Id.* at 691-92.

mit comments to the safety analysis performed by the FAA, and never received copies of the determinations allegedly issued by the FAA—all in direct violation of the formal process, procedures, and protocols required by the operating rules and policies of the FAA.¹⁸³ In response to the airport owner's concerns, an expert for the proponents maintained that the same protections were not available because the airport was a private airport and not a public-use airport.¹⁸⁴ The expert also discussed how the OEG coordinates with and informs other offices of the FAA by "auto-screening" to prove that the relevant federal offices were automatically notified and that it was not necessary to circularize the cases.¹⁸⁵ The Kern County Board of Supervisors also indicated that it relied upon measure 4.8-8, a local hazard mitigation procedure, in conducting their analysis.¹⁸⁶ The Kern County Board of Supervisors had approved the erection of the wind turbine generators on the theory that measure 4.8-8 required the proponents to file an FAA Form 7460-1 and obtain a determination of no hazard from the FAA, and that if there was a hazard, the proponents were responsible for mitigating the hazard.¹⁸⁷

The California Court of Appeals affirmed the decision of the Kern County Board of Supervisors, which permitted the wind turbine generator project to go forward.¹⁸⁸ The court held that "federal law occupies the entire field of aviation safety"¹⁸⁹ against the public interest group's argument that the Kern County Board of Supervisors had "hid[] behind the fig leaf of a non-existent federal preemption."¹⁹⁰ However, the court *did* acknowledge that the FAA does not have the authority to enforce hazards versus no hazard determinations, and it explained the weight of those determinations in the local context:

"[A] hazard/no-hazard determination . . . has substantial practical impact" . . . because it "can hinder the project sponsor in acquiring insurance, securing financing or *obtaining approval from state or local authorities.*" . . . Thus, while the FAA could not halt

¹⁸³ *Id.* at 692.

¹⁸⁴ *Id.* at 693.

¹⁸⁵ *See id.* at 693, 697 ("No evidence has been submitted into the record by the FAA indicating that additional information is necessary at this time . . .").

¹⁸⁶ *See id.* at 686.

¹⁸⁷ *See id.* at 695.

¹⁸⁸ *See id.* at 686-87.

¹⁸⁹ *Id.* at 701 (quoting *Montalvo v. Spirit Airlines*, 508 F.3d 464, 473 (9th Cir. 2007)).

¹⁹⁰ *Id.*

construction of North Sky River's and Jawbone's WTG's if it deemed those structures hazardous, under measure 4.8-8 the County was bound to do so through the exercise of its police power.¹⁹¹

Even though this case is adverse to the interest of the aviation community, in footnote 8 of the opinion, the court agreed to take judicial notice of FAA Order No. JO 7400.2H.¹⁹²

VII. CONCLUSION

The proliferation of wind turbine generators in the vicinity of public-use airports is a concern to the aviation community. Aircraft Owners and Pilots Association Communications Coordinator Amelia Walsh has reported that Cedric County, Kansas has voted to “disallow[] wind turbine development within 10 miles of any county airport.”¹⁹³ In terms of whether federal preemption precludes state and local authorities from exercising their police powers to prevent obstructions from being erected in navigable airspace, Iowa's decision in *Carroll Airport Commission v. Danner* is more logical from both a public policy and legal standpoint than the rule followed by California in *Citizens Opposing a Dangerous Environment v. County of Kern*. While Congress delegated the authority to promulgate rules and regulations dealing with airspace to the FAA, Congress did not intend to become involved in every local dispute. Those matters are uniquely of local concern. For that reason, the Supreme Court of Iowa made the correct determination in *Carroll Airport Commission v. Danner*.¹⁹⁴

Therefore, actors in the legal system should amply prepare and adequately inform themselves. Courts called upon to determine whether state and local authorities retain the authority to prohibit the erection of structures in navigable airspace should rely on the ruling of the Supreme Court of Iowa: FAA statutory and regulatory authority does not preempt local zoning requirements, especially since they may be more stringent than those of the FAA. Counselors forced to litigate the matter in the federal court system should thoroughly understand the imaginary sur-

¹⁹¹ *Id.* at 702 (citations omitted).

¹⁹² *Id.* at 688 n.8.

¹⁹³ Amelia Walsh, *Kansas County Blocks Wind Turbines to Protect Aviation*, AIRCRAFT OWNERS & PILOTS ASS'N (Aug. 30, 2019), <https://www.aopa.org/news-and-media/all-news/2019/August/30/wind-turbines-no-longer-a-threat-for-Wichita-pilots> [<https://perma.cc/P2PF-3JVL>].

¹⁹⁴ *See supra* note 175.

faces provided in 14 C.F.R. § 77.19, the obstruction standards set out in 14 C.F.R. § 77.17, and the most recent FAA Order on Procedures for Handling Airspace Matters. A counselor's careful analysis of the regulations and the FAA's Orders on Procedures for Handling Airspace Matters may very well indicate that the FAA did not apply its standards correctly or did not provide a reasoned decision. Such a finding may justify a United States Circuit Court of Appeals to reverse any final order issued by the FAA Administrator concerning the erection of wind turbine generators near a public-use airport.¹⁹⁵

If the past is prologue, we can reasonably anticipate more proponents of wind turbine generators will be seeking to erect those structures near or in the vicinity of public-use airports. Hopefully, the materials set forth above will aid aviation interests in their efforts to preserve and protect navigable airspace near public-use airports.

¹⁹⁵ See, e.g., *Clark Cnty. v. FAA*, 522 F.3d 437, 438–39 (D.C. Cir. 2008); *Town of Barnstable v. FAA*, 659 F.3d 28, 36 (D.C. Cir. 2011).