



January 17, 2025

Docket Operations, M-30
U.S. Department of Transportation (DOT)
1200 New Jersey Avenue, SE, Room W12-140
West Building Ground Floor
Washington, DC 20590-001

Re: Docket Number FAA-2024-2574 - Requirements to File Notice of Construction of Meteorological Evaluation Towers and Other Renewable Energy Projects

To Whom It May Concern:

The National Agricultural Aviation Association (NAAA) appreciates the opportunity to comment on the FAA's proposed rule "Requirements to File Notice of Construction of Meteorological Evaluation Towers and Other Renewable Energy Projects" (Docket Number FAA-2024-2574).¹ Requiring the marking and geospatial logging into a database of towers below 200 feet in rural areas has been a primary objective of the NAAA for nearly 20 years due to the safety risk these towers pose. To this end, NAAA has actively advocated to Congress to enact statutes to mark and log these towers and urge the FAA to promulgate tower database logging and marking regulations in the FAA Reauthorization Bills of 2016, 2018 and 2024. Our comments that follow will underscore the importance of the U.S. aerial application industry, the justification and support for these tower marking and logging requirements, and our requests to the FAA to follow through with the statute requests completely. Our industry, Congress and the NTSB all wish to ensure towers covered by the statutes, in addition to meteorological towers, are required to be properly marked and logged into the FAA database.

U.S. Aerial Application Industry Background

NAAA represents the interests of the 1,560 aerial application industry owner/operators and 2,028 non-operator agricultural pilots throughout the United States licensed as commercial applicators that use aircraft to enhance the production of food, fiber and bioenergy; protect forestry; protect waterways and rangeland from invasive species; and provide services to agencies and homeowner groups for the control of mosquitoes and other health-threatening pests. Within agriculture and other pest control situations aerial application is an important method for applying pesticides, for it permits large areas to be covered rapidly—by far the fastest application method of crop inputs—when it matters most. It takes advantage, more than any other form of application, of the often too-brief periods of acceptable weather for spraying and allows timely treatment of pests while they are in critical developmental stages, often over terrain that is too wet or otherwise inaccessible for terrestrial applications. It also treats above the crop canopy, thereby not disrupting the crop and damaging it. Aerial application has greater productivity, accuracy,

¹ <https://www.regulations.gov/document/FAA-2024-2574-0001>

speed, and is unobtrusive to the crop compared to ground application.² Although the average aerial application company is comprised of but six employees and two aircraft, as an industry these small businesses treat nearly 127 million acres of U.S. cropland each season, which is about 28% of all cropland used for crop production in the U.S.

In addition to the cropland acres, aerial applicators annually apply to 5.1 million acres of forest land, 7.9 million acres of pasture and rangeland, and 4.8 million acres for mosquito control and other public health concerns. While there are alternatives to making aerial applications of pesticides, aerial application has several advantages. In addition to the speed and timeliness advantage aerial application has over other forms of application, there is also a yield difference. Driving a ground sprayer through a standing crop results in a significant yield loss. Research from Purdue University³ found that yield loss from ground sprayer wheel tracks varied from 1.3% to 4.9% depending on boom width. While this study was conducted in soybeans, similar results could be expected in other crops as well. Data from a Texas A&M University⁴ economics study and the 2019 NAAA industry survey were used to calculate that the aerial application industry is directly responsible for the production of 1.69 billion bushels of corn, 199 million bushels of wheat, 548 million pounds of cotton, 295 million bushels of soybeans, and 3.33 billion pounds of rice annually that would be lost every year without the aerial application of pesticides. The value in additional crop yield that the aerial application industry brings to farmers, input suppliers, processors, and agricultural transportation and storage industries for corn, wheat, cotton, soybean, and rice production in the U.S. is estimated to be about \$37 billion. Research summarized by the University of Minnesota⁵ describes how soil compaction from ground rigs can negatively affect crop yields due to nitrogen loss, reduced potassium availability, inhibition of root respiration due to reduced soil aeration, decreased water infiltration and storage, and decreased root growth. Aerial application offers the only means of applying a crop protection product when the ground is wet and when time is crucial during a pest outbreak. A study on the application efficacy of fungicides on corn applied by ground, aerial, and chemigation applications further demonstrates that aerial application exceeds ground and chemigation application methods in terms of yield response. The aerial application of crop protection products results in greater harvest yields of crops. This in turn results in less land being used for agricultural production, preserving more wetlands for natural water filtration, forest ecosystems for carbon sequestration and habitat for threatened and endangered species. The Texas A&M study⁶ revealed that the total area of cropland needed to replace the yield lost if aerial application was not available for corn, wheat, soybean, cotton, and rice production is 27.4 million acres, an area roughly the size of Tennessee. Aerial applicators seed 3.8 million acres of cover crops annually.⁷ This means that aerial applicators are responsible for helping to sequester 1.9 million metric tons of CO₂ equivalent annually, which according to the EPA would be the equivalent of removing approximately 412,000 cars with carbon-combustion engines from the roads each year.

² Kováčik, L., and A. Novák, 2020. "Comparison of Aerial Application vs. Ground Application." *Transportation Research Procedia* 44 (2020) 264–270.

³ Hanna, S., S. Conley, J. Santini, and G. Shaner. 2007. "Managing Fungicide Applications in Soybean." Purdue University Extension Soybean Production Systems SPS-103-W. <https://www.extension.purdue.edu/extmedia/sps/sps-103-w.pdf>.

⁴ Dharmasena, S. 2020. "How Much is the Aerial Application Industry Worth in the United States?" Research presented at the 2020 Ag Aviation Expo, Savannah, GA. <https://www.agaviation.org/2020aatresearchpapers>.

⁵ University of Minnesota. "Soil Compaction." Accessed April 29, 2021. <https://extension.umn.edu/soilmanagement-and-health/soil-compaction>

⁶ National Agricultural Aviation Association. May 2019. "2019 NAAA Aerial Application Industry Survey: Operators." <https://www.agaviation.org/Files/Comments/NAAA%202019%20Operator%20Survey.pdf>

⁷ Dharmasena, S. 2021. "Value of the Agricultural Aerial Application Industry in the United States" Research presented at the 2021 Ag Aviation Expo, Savannah, GA. <https://www.agaviation.org/2021aatresearchpapers>

History, Importance and Justification of Tower Marking and Logging Policy

Unmarked towers are extremely difficult for aerial applicators to locate/see. An aerial applicator's work is conducted by flying as low as 10 feet above the crop at speeds of 80-180 miles per hour (117-264 feet per second) while maintaining lateral guidance to an intended spray path within inches to prevent overspray, mitigate drift and ensure efficacy. This leaves a short reaction time while flying in an environment where the crop, proximity to ground, location of the sun and other factors may preclude immediate observation of a tower.

While aerial applicators typically conduct preliminary reconnaissance orbits above the field they intend to apply to, unmarked towers can easily evade detection. The National Transportation Safety Board (NTSB) noted, when referencing pilots that collided with unmarked/unlogged towers "that they performed survey flights but did not see the obstacles that the aircraft eventually hit."⁸

Wind farms can be particularly hazardous. Meteorological and other unmarked towers placed within and near operational wind farms can be difficult to spot as an aerial applicator is focused on avoiding other obstacles such as wind turbines, utility poles and wires.



Figure 1 - As this photograph taken in Texas in 2013 illustrates, unmarked towers are very difficult to see.

Figure 1, a photograph taken from a pilot flying a low-altitude ag aircraft, highlights the difficulty ag aviators have in seeing unmarked towers. The only clue to trigger further observation to search for a tower is the unmanicured soil surrounding the tower's footprint. Once the crop grows the footprint because harder to observe and sometimes farmers plant crops

⁸ <https://www.nts.gov/safety/safety-studies/Documents/SIR1401.pdf>

within the footprint making them more difficult to observe. Logging data should include the guy-wire footprint area surrounding the crop.

From 2004-2022, there have been 25 agricultural aviation accidents due to collisions with towers and wind turbines resulting in 13 fatalities (*Table 1*). The number of accidents increases when considering all general aviation accidents, for example, there have been three accidents in Helicopter Air Ambulance (HAA) operations during the same time period resulting in four fatalities (*Table 2*). Tower heights in these accidents ranged from as low as 30 feet to over 1,000 feet with at least 10 (agricultural aviation and HAA combined data) being unmarked.

DATE	CITY	STATE	TOWER TYPE	HEIGHT (FT)	INJURY	NTSB #
07/23/22	Parkin	AR	Radio	560	Fatal	CEN22LA335
07/06/21	Nappanee	IN	Unknown	Unknown	None	CEN21LA318
07/27/20	Burlington	CO	Radio or cell	313 or 406	Minor	CEN20CA311
08/04/19	Waco	NE	Cell	299.9	None	GAA19CA480
10/12/18	Placedo	TX	Radio/cell	369.8	Fatal	CEN19FA003
06/19/18	Enid	OK	Radio/cell	405	Fatal	CEN18FA232
05/30/18	El Reno	OK	Radio	1107	Fatal	CEN18FA201
7/2/2017	Edna	TX	Comm	30	None	GAA17CA385
9/5/2016	Hondo	TX	Internet/Comm	55.1	None	GAA16CA462
8/19/2016	Ruthton	MN	Cell	352	Fatal	CEN16LA326
5/14/2016	West	TX	Cell	250	Fatal	CEN16LA181
9/4/2015	Fort Pierre	SD	Cell	399.9	Minor	GAA15CA251
8/13/2014	Cimarron	KS	Radio	750	Serious	CEN14CA427
8/5/2013	Balko	OK	MET	197	Fatal	CEN13FA465
7/19/2013	Steward	IL	Cell	462.6	Serious	CEN13LA425
2/16/2013	Jennings	LA	Radio	498.7	Fatal	CEN13LA163
4/9/2012	Lakin	KS	Cell	299.9	Serious	CEN12LA236
8/8/2011	Willcox	AZ	Unknown	80	Minor	WPR11LA375
7/28/2011	Forest City	IA	Wind turbine	~430	None	CEN11CA545
4/17/2011	Horseshoe Lake	AR	Radio	121.4	Minor	CEN11CA294
1/10/2011	Oakley	CA	MET	198	Fatal	WPR11LA094
8/22/2008	Satartia	MS	Unknown	40	Serious	MIA08CA170
06/19/05	Senath	MO	Radio	1040	Fatal	CHI05LA149
05/19/05	Ralls	TX	MET	197	Fatal	DFW05LA126
09/11/04	Lake Wales	FL	TV	520	Fatal (2)	ATL04LA177

Table 1 - Agricultural aviation accidents due to collisions with towers and wind turbines, 2004-2022

DATE	CITY	STATE	TOWER TYPE	HEIGHT (FT)	INJURY	NTSB #
8/5/2012	San Antonio	TX	Radio	40	None	CEN12IA518
10/15/2008	Aurora	IL	Radio	734	Fatal (4)	CEN09MA019
5/29/2008	Grand Rapids	MI	Radio	163.7	Serious (2)	CHI08FA141

Table 2 - Helicopter Air Ambulance accidents due to collisions with towers, 2004-2022

Based on the projected growth of towers throughout the U.S., tower accidents for low altitude aviators do not seem likely to end any time soon without adequate marking and logging requirements like the ones listed in this NPRM for proposed and altered meteorological towers.

FAA acknowledges in the proposed rule, they do not know the exact number of meteorological towers presently erected. According to the U.S. Geological Survey (USGS) as of November 2024 there are presently just over 70,000 wind turbines from 1,741 wind farm projects.⁹ USGS also states that, on average, 3,000 wind turbines are built each year.¹⁰ The U.S. Energy Information Administration states that the average wind farm consists of about 50 turbines¹¹, and each windfarm can have up three meteorological towers over the course of its development¹². Using these numbers, NAAA estimated that there are over 180 meteorological towers erected each year. By 2029 that number will grow to an additional 900 and by 2034 it will grow to an additional 1,800. This does not account for the many additional meteorological towers temporarily installed for power curve calibration and site surveys in each new and prospective wind farm.

By the FAA's own account, as published in the NPRM, the number of new wind turbine proposals processed by the FAA has increased substantially since the enactment of the Energy Policy Act of 2005 that provided the Wind Energy Production Tax Credit to stimulate investment in wind energy. In 2004, the FAA received and conducted 3,030 wind turbine aeronautical studies. Since then, the FAA received an average of 21,148 wind turbine cases per year, with the highest being 33,396 cases in 2010.

According to the Department of Energy (DOE), wind accounts for 8.4 percent of the total energy generated in the U.S. as of 2020 and DOE continues to target wind energy as contributing up to 20 percent of the U.S. electrical supply by 2030. This clearly necessitates an increased number of meteorological towers be erected to reach this goal. NAAA members continue to see this. According to NAAA's 2024 nationwide industry survey, U.S. aerial application operators reported observing an influx of obstructions in their treatable areas. Thirty-three percent (33%) reported having seen an increase in meteorological towers; 21% reported having seen an increase in communication towers; 28% reported having seen an increase in wind turbines and 8% reported having seen an increase in other types of obstructions such as powerlines, transmission lines and drones.

NAAA's Outreach Efforts on this issue

Alongside legislative advocacy for the marking and logging of towers, NAAA has run a 15-year education and outreach campaign through its aerial applicator membership to bring public attention to the dangers unmarked and unlogged towers represent to agricultural aviators. This has included envelope/bill

⁹Hoen, B.D., Diffendorfer, J.E., Rand, J.T., Kramer, L.A., Garrity, C.P., and Hunt, H.E., 2018, United States Wind Turbine Database v7.2 (November 20, 2024); U.S. Geological Survey, American Clean Power Association, and Lawrence Berkeley National Laboratory data release, <https://doi.org/10.5066/F7TX3DN0>

¹⁰ <https://www.usgs.gov/faqs/how-many-wind-turbines-are-installed-us-each-year>

¹¹ <https://www.eia.gov/todayinenergy/detail.php?id=31032>

¹² [https://www.windfarmbop.com/meteorological-towers-in-a-wind-farm/https://www.windfarmbop.com/meteorological-towers-in-a-wind-farm/#:~:text=In%20a%20standard%20wind%20farm,as%20Met%20Mast\)%20are%20installed.](https://www.windfarmbop.com/meteorological-towers-in-a-wind-farm/https://www.windfarmbop.com/meteorological-towers-in-a-wind-farm/#:~:text=In%20a%20standard%20wind%20farm,as%20Met%20Mast)%20are%20installed.)

stuffers (*Figure 2*), magazine ads (*Figure 3*), radio/TV ad scripts and social media ads. These resources have been deployed nationwide as tools for pilots and operators to educate landowners, local governments and other stakeholders on the additional risk to low-altitude aviators borne by meteorological towers installed in or near wind farms, as well as those preliminarily installed independently for site surveys.

Low-Flying Aircraft Have A "Towering" Problem.



Wind Energy Development Impacts Everyone.

Aerial spraying, or "crop dusting" gets more challenging with every wind turbine project erected on America's farmland. Without careful planning in their placement, farmers could lose the option—and the advantage—of aerial spraying. Agricultural aircraft can treat large areas of land quickly and safely, and may be the only option for treating crops when wet fields, rolling terrain or dense crop foliage exist.

Landowners are being asked to make crucial decisions that will impact farmers and their neighbors for years to come. Improper wind turbine siting may negatively affect aerial applicators, emergency medical flights, aerial firefighting and other low-flying aircraft.

Be sure to consider all the facts before "green lighting" a wind energy installation on your land.

Let's Be Fair About Sharing The Air

Learn more at www.agaviation.org/towers

A MESSAGE BROUGHT TO YOU BY
YOUR LOCAL AERIAL APPLICATOR AND



Figure 2 - For the past decade and a half, NAAA has made these envelope stuffers available to its members to educate landowners, wind energy representatives and government officials about the dangers of unmarked/unlogged meteorological towers being erected on cropland treated by aerial applicators.

Just One Skinny Steel Tower Can Ruin The Whole Day.



One Accident Is One Too Many.

Pilots of low-flying aircraft can't avoid what they can't see. Unmarked meteorological testing towers for wind power development are a deadly hazard for agricultural pilots, emergency medical helicopters, aerial firefighters and other low-flying aircraft.

These thin, portable towers can pop up without warning, are unlisted on aerial maps, and are nearly invisible to pilots. Rising just shy of 200 feet, these towers avoid FAA tower marking regulations in most cases.

Let's fix this flaw before it becomes a fatal one. Responsible wind power development should include towers that are properly sited, marked and lit.

Let's Be Fair About Sharing The Air

Learn more at www.agaviation.org/towers

A MESSAGE BROUGHT TO YOU BY



Find The 198-Foot Tower.



Now Imagine Finding It While Flying 130 mph.

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A MESSAGE BROUGHT TO YOU BY



Figure 3 - The photographic illustrations above are part of a 15-year NAAA campaign to encourage the marking and logging of unmarked towers by depicting the difficulty in locating unmarked towers visually, and their prevalence in crop growing regions throughout the U.S.

NAAA's Comments on FAA-2024-2574 – Proposed Rule to Require Filing Notice for Meteorological Towers (METs) and Other Wind Energy Systems, Logging All METs and Marking Newly Constructed or Altered METs

The NAAA would like to commend the FAA in detailing the real aviation safety concerns with unmarked meteorological towers as referenced in the NPRM for Docket Number FAA-2024-2574, not only in detailing the fatal accidents that have occurred but also by listing the multitude of state laws that have attempted to prevent this loss of life by enacting their own marking statutes. These recommendations, set by nearly one-third of states in the U.S., include creating and maintaining a database for the required registration of certain towers and a requirement to mark and light (where feasible) certain towers. Since so much of aviation involves interstate commerce, including low altitude aerial application, having a national database of towers and marking requirements will greatly contribute to the safety of these important contributors to general aviation, to farmers and to the agricultural economy.

NAAA also commends the agency's efforts for partially addressing recommendations in NTSB's 2014 Special Investigation Report on the Safety of Agricultural Aircraft Operations (NTSB/SIR-14/01 PB2014-105983) that includes A-13-16 and A-13-17 to amend 14 CFR Part 77 to require that all meteorological towers be registered, marked, and—where feasible—lighted, and create and maintain a publicly accessible national database for the required registration of all [meteorological towers], respectively.

NAAA concurs with FAA's authority to promulgate these tower marking and database logging regulations as authorized under 49 U.S.C. 40103(b) and 44701(a)(5) that provides the FAA Administrator authority to issue rules on aviation safety and authority under §2110 of the 2016 FAA Extension, Safety, and Security Act, as amended by §576 of the 2018 FAA Reauthorization Act, and §355 of the FAA Reauthorization Act of 2024 (Pub. L. 118-63), that exact marking and informational requirements on covered towers, including meteorological towers.

NAAA appreciates the FAA requiring the logging of ALL (existing, proposed, altered) meteorological towers between 50-200 feet to be available on the FAA's official database. Downloading the towers' geospatial coordinates from the FAA database into an aircraft's GPS system to identify their exact location will be helpful for low altitude pilots, including aerial applicators, and ALL aerial applicators are equipped with the technology which will result in the safety benefit being universal for the entire population of ag pilots. Also, the cost and time estimates in the NPRM of \$7 to file Form 7460-1 (\$28.34 x 0.25 hours) and \$3 to file Form 7460-2 (\$28.34 x 0.10 hours), are minimal for tower sponsors and simple to obey.

Regarding the costs of marking new (or existing) towers, enabling low-altitude aviators from ag to air ambulance pilots to see them, NAAA would add that it is far cheaper for their sponsors to log and mark such towers than to face the legal costs for not logging and marking. Case in point, in September of 2014 a settlement was reached on the wrongful death action filed by the family of California agricultural aviator Steve Allen in the amount \$6.7 million against a group of defendants representing tower manufacturing, wind energy, land-owning and farming interests for not marking or making aware the location of an unmarked meteorological tower to protect the pilot.¹³ The settlement established a standard of care as to the use of unmarked and unlogged towers in agricultural areas.

¹³ <https://www.dbbwc.com/case-results/>

The accident, referenced in this NPRM, occurred January 10, 2011, when Northern California agricultural pilot Steve Allen struck a meteorological tower resulting in his death. The tower was an eight-inch galvanized, unmarked, unlit structure reaching 197 feet, falling just short of the 200-foot threshold whereby FAA regulations would have required it to be marked in a more visible fashion to low flying aviators. The defendants in the case were mindful that the FAA had a requirement of marking and lighting such a tower if it exceeded 200 feet. By attempting to erect a tower literally inches under 200 feet, they believed the tower was not required to be evaluated or registered with the FAA, nor compliant with the requirements that it be marked and made visible if over 200 feet. The defendants, through their insurance carriers, contributed to settle this matter for the sum of \$6.7 million. On the day of the fatal incident, Allen, who had logged more than 26,000 accident-free hours in his agricultural aircraft, was never made aware of the existence of the tower by the farming company, and from eyewitness accounts, it was clear he never saw it before he struck it. The settlement in this case was reached before the state of California enacted tower marking requirements. Tower sponsors that fall under these marking requirements and mark and log their towers will protect themselves from a far greater financial burden of the legal costs and settlement costs associated with liability due to death or injury in a civil case in the event their unmarked towers are struck by a low altitude aviator.

NAAA does have a concern with the portion of the NPRM that appears to treat existing meteorological towers differently from altered or newly constructed ones. As NAAA understands the NPRM, existing meteorological tower sponsors are required to file notice with the agency for it to evaluate if a meteorological tower is a hazard to air navigation and the FAA may issue a determination that only *recommends* conditions and limitations; whereas, each newly constructed or altered meteorological tower sponsor must file with the agency and would receive *required* conditions and limitations that include, at a minimum, marking requirements based upon FAA's AC 70/7460-1. If NAAA understands this correctly—that altered and new meteorological towers might have marking requirements that existing towers would not have to fulfill. NAAA strongly urges FAA require that existing towers should have to abide by the same required conditions and limitations based upon FAA's AC 70/7460-1. Our logic as to this uniformity is that the danger and difficulty associated with low-altitude pilots challenge in observing unmarked towers, whether existing, new, or altered, is the same, hence they should have the exact same requirements. The NTSB did not differentiate between the risk of existing or new/altered towers in its recommendations that they be marked. The NTSB SIR mentioned that “additional meteorological tower collisions resulting in loss of life would occur without requiring registration, marking, and the creation of a publicly accessible national meteorological tower database.” Also, as referenced above in the 2014 legal settlement in the Steve Allen case, the risk of existing, unmarked towers remains and also poses a liability risk to their sponsors.

NAAA is greatly concerned that the NPRM, to the FAA's admission, only “partially addresses...statutory mandates,” of §2110 of the 2016 FAA Extension, Safety, and Security Act, as amended by §576 of the 2018 FAA Reauthorization Act. Missing are requirements for unmarked towers, other than meteorological towers, to either be marked or logged into a database. Specifically, all towers should be covered and subject to marking and logging requirements if it meets the following:

- It is 10 feet or less in diameter at the above-ground base, excluding concrete footing
- The highest point of the structure is at least 50 feet above ground level and is not more than 200 feet above ground level
- It has accessory facilities on which an antenna, sensor, camera, meteorological instrument, or other equipment is mounted
- It is located on land that is in a rural area; and used for agricultural purposes or immediately adjacent to such land.

Unfortunately, the FAA erroneously determined in the NPRM that the non-meteorological §2110 covered towers do not pose a hazard to aviation safety “given that the FAA has no accident data involving these structures.” The NTSB does have this data, and NAAA has included a list of collisions between ag aircraft and towers, both meteorological and non-meteorological, between 2004 and 2022 in these comments (*see Table 1*). This includes 22 ag aviation accidents with non-meteorological towers, nine of which were fatal and five of which involved towers less than 200 feet in height. As previously stated, this is a safety issue with other sectors of general aviation as well. Helicopter Air Ambulance operations have incurred 3 accidents resulting in 4 fatalities from collisions with non-meteorological towers during the same period (*see Table 2*).

This will continue to be a safety issue for low altitude pilots moving forward. According to the Wireless Infrastructure Association there were 142,100 cell towers in the U.S. in 2022 ¹⁴ with 23,333 added each year. Coupling this expected growth in cell towers with that in radio towers, towers for rural broadband, and other communication towers with the above accident data, it is clear that the FAA should require the marking or logging of non-meteorological towers as required by the statute. NAAA advocated those towers meeting the covered conditions in the 2016 statute be both marked *and* logged into a database. Unfortunately, the statute was modified in 2018 due to lobbying efforts by the communications industry to require marking *or* logging communication towers into a database, but not requiring both, thereby diluting low-altitude aviation industry efforts to make its airspace safer. Nevertheless, the statute does require the FAA to include other towers as part of either the marking requirements or database logging requirements. Accident data and projected growth in numbers of these towers underscore the necessity for the FAA to include them in these marking and/or database logging requirements.

Moreover, the NTSB recommends marking/logging for these towers. In its Safety Alert (SA-016)¹⁵ “The Hazards of Unmarked Towers,” it urged pilots to be vigilant for unmarked GPS and telecommunications towers, in addition to meteorological towers. The Safety Alert reads, in part, “FAA published AC 70/7460-1L, which recommends the marking of METs and provides marking guidance. However, the NTSB is concerned that the application of the AC is voluntary and, without mandatory application and marking requirements for METs and other kinds of towers less than 200 feet tall, many of these towers will continue to be constructed without notice to the aviation community and will fail to be marked appropriately.” Unfortunately, the revised Safety Alert was issued in November 2018, shortly after the 2018 FAA Reauthorization was passed that diluted the requirement for communications and other towers to both log towers into a database and mark them.

As a final point, documented earlier in these comments, the NAAA 2024 nationwide survey of U.S. aerial application operators indicated an influx of obstructions in ag pilots’ treatable areas. The FAA can proactively address this growing safety issue by including towers other than meteorological ones to the database logging or marking requirements as the statute directs it to. This action will save low altitude pilots’ lives.

NAAA supports the FAA’s objective of revising AC 70/7460-1 as stated in the proposed rule to modify the marking layout for towers to include orange spherical markers or cable balls and anchor sleeves, etc. NAAA would like to have the opportunity to comment on the marking provisions when the AC is updated. One recommendation we have is that anchor sleeves that enhance visibility by having an orange, fluorescent hue or similar notable color characteristic reach a height well beyond the canopy level for full grown crops. For example, a full-grown corn stalk will be as high as 12 feet, and an almond tree’s height is approximately 15 feet so the anchor sleeves in these instances should reach well beyond these measurements so that a low altitude pilot will be able to see them regardless of time within the growing season.

¹⁴ <https://wia.org/wireless-infrastructure-by-the-numbers-2022-key-statistics/>

¹⁵ <https://www.ntsb.gov/Advocacy/safety-alerts/Documents/SA-016.pdf>

In addition, FAA AC 70/7460-1 should be modified to follow the FAA's Safety Alert for Operators (SAFO 18010)¹⁶ emphasizing the importance of incorporating procedures for the avoidance of equipping obstacles marked with LED obstruction lights. This is based on a helicopter-air-ambulance pilot utilizing night vision goggles (NVGs) reporting a near miss with a tower marked with LED obstruction lighting. This may have occurred because some LED lighting systems fall outside the combined visible and near-infrared spectrum detected by NVGs. An unaided crewmember saw the tower that was not seen by the pilot utilizing NVGs. This is an important issue for ag pilots and aerial fire-fighters as well since a growing number of them are using NVGs to do aerial application work at night.¹⁷ According to NAAA's 2019 Aerial Application Industry survey, 1.9 million acres are treated after dark and seven percent of agricultural aviation operations are conducting evening flights—many of these using NVGs.

Conclusion

NAAA appreciates the work that went into this NPRM to mark and log into a database meteorological towers. It urges the agency to abide by the NTSB's recommendations and the statute giving it marking and database logging authority and ensure that not only new and altered meteorological towers are required to be marked and have their geospatial coordinates logged into a database, but existing meteorological towers are required to do the same. NAAA also urges the agency to abide by the statute and NTSB recommendations to ensure that other unmarked towers that pose an equal safety risk to low altitude ag pilots and that fit the statute's definition of covered towers, such as communication towers, are required to either be marked or logged into a database.

Thank you for this opportunity to comment.

Sincerely,

A handwritten signature in dark ink, appearing to read "Andrew D. Moore". The signature is fluid and cursive, with the first name "Andrew" being more prominent than the last name "Moore".

Andrew D. Moore
NAAA CEO

¹⁶ https://www.faa.gov/sites/faa.gov/files/other_visit/aviation_industry/airline_operators/airline_safety/SAFO18010.pdf

¹⁷ https://www.agaviationmagazine.org/agriculturalaviation/library/item/fall_2023/4143582/