



RINs: 2120-AL82 and 2120-AL33

**Executive Order 12866 Meeting, White House Office of Information and Regulatory Affairs
June 5, 2025 – 1:00 PM EST**

The Impact of the Beyond Visual Line-of-Sight (BVLOS) Rulemaking on Agriculture

Introduction:

The United States boasts nearly nine hundred million acres of farmland, a vast expanse that demands efficient monitoring and management for the good of the American economy and the American people.¹ Unmanned Aircraft Systems (UAS or drones), present the most effective solution for this task. However, the absence of a clear regulatory framework to allow for scaled beyond visual line-of-sight (BVLOS) operations has stifled U.S. innovation, hindered economic growth, and been disadvantageous to American farmers. Enabling standardized BVLOS operations—as would be made possible by this rulemaking—is critical for enabling scalability within the customer base, driving demand, and allowing U.S. manufacturers to expand production, reduce costs, and compete globally. Further, this rulemaking would assist in the reduction of U.S. reliance on foreign-made agricultural drones which can pose a significant national security risk.

Drone Use in Agriculture:

Aerial application is a 103-year-old industry that has been largely dominated by airplanes and helicopters. On a yearly basis over 120 million acres in the U.S. are treated by agricultural aircraft.² The current model for aerial application is unsustainable for several reasons. First, aerial application with manned aircraft is inherently dangerous—pilots are required to fly 10-40 feet above the ground at speeds exceeding 170mph, leaving little room for error to avoid obstacles such as trees, powerlines, and windmills. Between 2010 and 2020, 81 pilots were killed in agricultural aviation accidents in the United States.³ Second, application with traditional manned aircraft can be imprecise, resulting in excess use

¹ *Census of Agriculture Highlights*, United States Department of Agriculture (2022), https://www.nass.usda.gov/Publications/Highlights/2024/Census22_HL_FarmsFarmland.pdf.

² *Aerial application of crop protection products is an essential tool for American farmers*, National Agricultural Aviation Association, <https://www.agaviation.org/about/about-ag-aviation/industry-facts-faqs/>.

³ Bill Lavender, NTSB Final Report 2020, *AgAir Update* (Feb. 23, 2021), <https://agairupdate.com/2021/02/23/ntsb-final-report-2020/>.

of agrichemicals. And third, traditional aerial agriculture can be prohibitively expensive, particularly for smaller farms, with some operational cost estimates at over \$1,100 per hour.⁴

Drones provide a natural alternative to traditional means of aerial agriculture because they are safer, more cost effective, and more precise. Equipped with advanced sensors, drones can assess plant health, detect diseases, and identify pests early in the planting process. Studies have shown that drones can distinguish weeds from main crops with up to 93% accuracy, even at early growth stages.⁵ Drones also excel in precision spraying, targeting specific areas with precise amounts of water or agrichemicals, making the process more efficient and cost-effective compared to traditional methods. This targeted approach not only reduces maintenance costs per acre but also enhances overall agricultural efficiency.

Because of these advantages, drone use can result in substantial savings for farmers. One study found that precision agriculture using drones could save American farmers approximately \$700 million annually.⁶ At an average cost of \$5-8 per acre for high resolution surveying, drones are typically within the budget from most large farms.⁷ Drones efficiencies typically increase and costs decrease as drones service greater areas. Additionally, more widespread use of drones will also help to address growing labor shortages in the agricultural sector. A 2024 report by the Government Accountability Office (GAO) on precision agriculture highlighted how increased drone use can decrease agricultural labor requirements by reducing the need for workers to check vegetable crops individually and other labor-intensive necessities.⁸

The Impact of Scaled BVLOS Operations on Drone Agriculture Operations:

The ability to operate in a BVLOS environment is essential to fully scaling drone aerial agriculture operations. Because of the size of most farms in the United States, it is practically and economically infeasible for farmers to constantly monitor drones as they traverse hundreds of acres of farmland. BVLOS operations would remove this restriction and allow for automated drone operations over large areas. And because most farms are located in low-population areas and in Class G airspace, the risk to people on the ground from these operations is quite low.

Below are just some of the ways in which standardized BVLOS operations would support the aerial agriculture industry:

Unlock Industry Investment

The lack of regulatory clarity for BVLOS operations does not allow agricultural drone manufacturers to adequately scale their operations in a way that is economically viable. This lack of predictability has a chilling effect on raising capital needed for the industry to expand. This freezing out of capital occurs

⁴ Bill Lavender, *How much does it cost?*, *AgAir Update* (Apr. 3, 2017), <https://agairupdate.com/2017/04/03/how-much-does-it-cost/>.

⁵ Ridha Guebsi, Sonia Mami, and Karem Chokmani, *Drones in Precision Agriculture: A Comprehensive Review of Applications, Technologies, and Challenges*, *Drones* 2024, 686 (2024), <https://www.mdpi.com/2504-446X/8/11/686>.

⁶ Levitate Capital White Paper, *Enterprise Market* 2020, at 12.

⁷ Levitate Capital, *The Future of the Drone Economy: A Comprehensive Analysis of the Economic Potential, Market Opportunities, and Strategic Considerations in the Drone Economy* 56 (2020), <https://levitatecap.com/levitate/wp-content/uploads/2020/12/White-Paper-v4.pdf>.

⁸ Government Accountability Office, *Precision Agriculture: Benefits and Challenges for Technology Adoption and Use* 35, Jan. 2024. <https://www.gao.gov/products/gao-24-105962>.

both at the early stages of business development because the current regulatory structure does not allow for the development of a competitive product, and at a later phase when capital is needed to scale operations to produce more aircraft. Without changes to the BVLOS structure, many promising companies are at risk of failing, and the domestic drone industry will continue to fall behind its international competitors in both scope and scale.

Standardized BVLOS operations would enable large-scale flight operations, making it financially viable for farmers to scale their drone operations and, as a result, for manufacturers to meet this growing demand by building more drones. This would attract more capital to the industry, which in turn would allow for greater expansion and technological innovation. It would also reduce barriers to entry for aviation start-ups, allowing them to utilize the full capabilities of UAS technology. Ultimately, unlocking investment in this sector benefits the American economy, empowers American companies, supports the American workforce, and helps to position the United States as a leader in agricultural drone innovation.

Enable International Competition

As U.S. companies are mired by poor policy and an outdated regulatory structure, our peers and adversaries have surged ahead in the development of innovative and scalable agricultural drone products. China is now the world's largest producer of agricultural drones,⁹ thanks in part to a more favorable regulatory structure and generous government subsidies. Not only does this hurt the ability for American companies to compete with foreign manufacturers, but it also creates significant national security concerns at a time when agroterrorism is a growing threat.¹⁰ Further, because of the current regulatory structure, many U.S. agricultural drone manufacturers focus their efforts on international, resulting in job creation and technical expertise being developed abroad rather than at home.

Creating a pathway for standardized BVLOS operations would provide American manufacturers with a means to develop innovative technological products able to be sold both domestically and internationally. This would reduce domestic reliance on foreign-made agricultural drones while also increasing American technological and economic presence overseas. The result is both a win for our national security and for the growth and long-term development of the commercial drone industry.

Support Small Farmers

The current regulatory structure also creates a barrier which prevents small farmers in rural communities from accessing the benefits of agricultural drones. Smaller farmers often do not have the time or resources to navigate the current maze of regulations surrounding BVLOS operations. By streamlining the regulatory structure, these farmers could more quickly and easily incorporate agricultural drones into their operations, making their farms more competitive and self-sustaining for the long term.

Create New Jobs and Training Initiatives

Countless companies are working to support community based economic development and workforce training initiatives to support aerial drone activities. With a BVLOS regulation in place, these affordable community workforce training programs could naturally attract, nurture, and maintain a

⁹ See Claris Diaz and Emilian Kavalski, *Beyond TikTok—The National Security Risk of Chinese Agricultural Drones*, War on the Rocks (Nov. 25, 2024), <https://warontherocks.com/2024/11/beyond-tiktok-the-national-security-risks-of-chinese-agricultural-drones-2/>.

¹⁰ See *id.*

talented and technically proficient workforce. This workforce would then be able to deliver essential agricultural services to their underserved communities across the United States.

A BVLOS rule would also enable streamlined processes and flight operations at a much larger scale, making it financially viable for a passionate entrepreneur to take a newly learned skill set and turn it into a scalable and successful business. As an example, Beaufort County Community College stood up its newly founded “UAS Operations Training Institute,”¹¹ and has trained over 200 career and technical education students on skill sets ranging from Part 107 test preparation to advanced UAS operations like HAZMAT, asset inspection and photogrammetry. A BVLOS rule would result in new job opportunities for those supporting UAS operations which would enable further training initiatives.

Conclusion:

We strongly urge the Office of Information and Regulatory Affairs to expedite the BVLOS rulemaking. Even after the final rule is released, it will still take 5 to 10 years to scale BVLOS implementation. The timely introduction of large agricultural UAS to the market is crucial for the survival of companies in this sector. Investors are eager to inject capital into the industry, but they remain cautious until a clear path to commercialization through scaled BVLOS operations is established. The time to act is now. The BVLOS rule is essential to secure America's leadership in aviation innovation and ensure the prosperity of the agricultural UAS industry for coming decades.

¹¹ UAS Operations Training Institute – Drones – Aviation, Beaufort County Community College, <https://www.beaufortccc.edu/continuing-education/workforce-programs/uas-operations/>.