



# 2024-2025 Precision Agriculture Infrastructure Grant (PRO-AG) Grant Application (Docket C-5600)

Submit signed PDF applications with all attachments via email to [psc.broadband@nebraska.gov](mailto:psc.broadband@nebraska.gov) by **January 17, 2025, 5:00 p.m. Central Time.**

**IMPORTANT:** Applicants must carefully review the PRO-AG Program Guide and PRO-AG Scoring Reference Sheet for details on application requirements and scoring. This includes but is not limited to application field descriptions, attachment content, and other necessary documentation and requirements. These resources, along with examples of allowed and disallowed costs are available on our website at <https://psc.nebraska.gov/telecommunications/2024-2025-precision-agriculture-infrastructure-grant-program-c-5600>.

If additional space is needed for any section of the application, you may include extra pages if needed, noting the application Section, Subsection, and Field Number on the attachment.

NOTE: This application is a fillable PDF and should be submitted in its original format, rather than as a printed or scanned copy. If technical difficulties or other challenges prevent you from submitting the form in this format, please contact us to discuss alternative solutions.

## Subprogram Descriptions:

**Connectivity Subprogram:** Grants within the Connectivity Subprogram shall be used to provide adequate precision agriculture connectivity to on-farm structures and devices, including, but not limited to, tractors, combines, irrigation systems, livestock facilities, and farm offices. Adequate precision agriculture connectivity means at least 100 megabits per second download and 20 megabits per second download speeds (100/20 Mbps).

**Note:** Applications for the Connectivity Subprogram are permitted from Providers. Agricultural Cooperatives, Agronomists, and Agricultural Producers may apply only if partnered with a Provider.

**Devices and Technology Subprogram:** Grants within the Devices and Technology Subprogram shall be used to provide: (1) On-farm traceability solutions that satisfy food supply stakeholder demand, including blockchain. (2) Products that improve soil health, water management tools and sensors that facilitate judicious use of water resources, and products that promote the use of water efficiency seed technologies that lower agriculture's water, carbon, and nitrate footprint. (3) Products that use autonomous solutions in agricultural machinery, including but not limited to, grain carts, spreaders, precision drone scouting, and scouting robots.

NOTE: Each subprogram is designed to fulfill a specific purpose, and applicants can submit multiple project proposals in separate submissions. However, applicants must apply separately for each subprogram. It is important to note that each application will be assessed individually, and there will be no priority given to applicants who choose to apply for grants in both subprograms. Each application will be considered on its own merits within the subprogram in which it was filed.

## Eligible Applicant Types:

- **Provider:** A wireless network provider that provides adequate precision agriculture connectivity. Proof needed: Proof of business registration and service authorization in Nebraska.
- **Agricultural Cooperatives:** A business entity that is cooperatively owned and controlled by agricultural producers, in which members' resources are pooled, and which operates for its members' benefit rather than the benefit of outside investors. Proof needed: Articles of incorporation, membership information, and proof of registration as a cooperative in Nebraska.
- **Agronomist:** A scientist who specialized in the science of farming, including but not limited to crop production, soil control, or soil management. Proof needed: Professional certifications, degrees in relevant fields, and portfolio of agriculture-related projects.
- **Agricultural Producer:** An individual or entity directly engaged in the production of agricultural products, including the cultivating, growing, and harvesting of plants and crops, including farming; breeding, raising, feeding, or housing of livestock, including ranching; forestry products; hydroponics; nursery stock; or aquaculture, and whereby 50 percent or greater of their gross income is derived from these products. Proof needed: See "Agricultural Producer Affidavit" on our website.

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### Section I: Applicant Details *(Applies to all applicants)*

1. Subprogram Type: <i>(See Descriptions Above)</i>	Devices and Technology Subprogram
2. Applicant name (Legal name of the farm/business applying for the grant):	Ference Agronomy LLC
3. Applicant type: <i>(See Definitions Above)</i> Proof of applicant type should be included with application as Attachment B.	Agronomist
4. Applicant street address:	1712 O st
4a. Applicant city:	Ord
4b. Applicant state:	NE
4c. Applicant zip code:	68862
5. Applicant contact (first and last name):	Johnny Ference
6. Applicant e-mail:	ferenceagronomy@gmail.com
7. Applicant phone number:	308-730-2046

8. Executive Summary: Provide an overview of the applicant, detailing the history, mission, and goals of the farm or business. Include specific objectives related to precision agriculture connectivity or technology adoption. Ference Agronomy LLC is dedicated to bringing this advanced technology to local producers across central Nebraska. We have hit over 15,000 total acres over the past two years of drone application. Also we have mapped over 4,000 acres with drones for numerous projects. Currently, we offer services such as drone applications and camera imagery, but with increasing adoption rates, we recognize the need for expansion. Ference agronomy has been investing in drone technology for years and is a early adopter. These has made this company the mentor to at least 10 different business in Nebraska for drone technology.

Over the past year, we successfully treated more than 10,000 acres of crop ground with fertilizer, pesticides, and cover crops. Additionally, we conducted experimental treatments targeting cedar trees and invasive species on pastureland in the region. With the support of this grant, we aim to treat 14,000 acres of crop ground and 3,000 acres of pastureland in the coming year. This funding would enable Ference Agronomy LLC to grow our service capacity, making a significant impact on the local agricultural community.

The expansion of our operations through this grant would directly contribute to job creation in central Nebraska. Last year, Ference Agronomy LLC had two college student able to pay for their fall and spring semester because of this grant. We plan to employ two full-time workers to manage and oversee drone operations, maintenance, and data analysis. Additionally, we will hire three part-time workers to assist with field operations, equipment preparation, and administrative tasks. These roles will not only enhance our service efficiency but also provide meaningful employment opportunities within the community, supporting the local economy.



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### Section II: Project Details *(Applies to all applicants)*

1. Project name:	Application Drones
2. Precision agriculture production type:	Autonomous Solutions
<p>3. Project location description: (This should include a detailed description of the project area and location(s) to be served.)</p> <p>Our services focus on cropland within a 45-mile radius of Ord, Nebraska, and pastureland up to 90 miles away. By targeting these areas, we ensure our efforts address the specific needs of local farmers and ranchers, optimizing agricultural productivity and land management.</p>	
<p>4. Project Proposal: (a) Description of the precision agriculture project you plan to implement. -AND- (b) Explanation of how the on-farm connectivity or devices and technology will be utilized to enhance productivity, efficiency, and sustainability. <i>Please include information showing that the applicant is prepared to move forward immediately upon award of grant.</i></p> <p><b>(a) Description of the Precision Agriculture Project:</b>                  Our precision agriculture project is focused on purchasing two JP100 drones, which are specifically designed for crop spraying. These drones will help Ference Agronomy grow its operations, hire more employees, and support more farmers across Nebraska. The drones will allow us to provide efficient and precise applications of fertilizers, pesticides, and cover crops, which are essential for helping farmers succeed. This investment will also help us mentor young agriculturalists and show how new technology can make farming more productive and sustainable.</p> <p><b>(b) Utilization of On-Farm Connectivity and Technology:</b>                  Drones are becoming an essential tool in agriculture, and Ference Agronomy is working to help farmers adopt this technology. Using drones, we can improve the accuracy and safety of crop and pasture spraying. For example, drones provide consistent spraying heights, which ensures even application and reduces the risks associated with using planes or ATVs. Drones are also better at reaching difficult or dangerous areas, which makes the work safer and more efficient. This next year we are going to show the benefit of foliar feeding pastures to help promote growth and gain on cattle. By showing farmers the value of this technology, we can help them save money, reduce waste, and protect the environment, all while making their operations more successful.</p>	
5. Total Project Cost <i>(include allowable costs only):</i> See project budget instructions and examples on our website.	\$ <b>67,986.00</b>

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6. Total Match Commitment Amount (in dollars), <i>if applicable</i> : NOTE: The project budget (attachment A) must detail any matching funds committed by source. Additionally, documentation of match commitment must be submitted as Attachment E. See "Contribution Certification Form" on our website.	\$ 13,598.00
7. PRO-AG Grant Amount Requested:	\$ 54,388.00
8. Estimated number of locations served in project area:	45
9. Technology type(s) used in proposed project: EAVision J100 Drone	
10. Expected Start Date ( <i>Should <u>not</u> be prior to 4/15/25</i> ):	5/1/25
11. Expected completion date ( <i>Should <u>not</u> be after 4/15/26</i> ):	12/15/25
12. Timeline: Please outline the timeline for your project deployment, including clear milestones and indicators of readiness for immediate action upon grant award. Provide an explanation of any measures you have in place to address potential challenges during the implementation process. <b>Immediate Actions Upon Grant Award:</b>  Drone Procurement: Within 7 business days of receiving the grant funding, Ference Agronomy will place an order for the two JP100 drones. We will file the necessary reports with the FAA to ensure compliance with regulations.  Pilot Readiness: With two FAA-certified pilots already on staff and Ference Agronomy's Part 137 exemption in place, we will be ready to deploy the drones immediately upon their arrival.  Initial 30 Days:  Insurance Coverage: Both drones will be insured within the first 30 days to ensure full operational security and compliance with liability requirements.  Certification and Training: Ference Agronomy is actively certifying and training two additional team members to expand our operational capacity. This includes obtaining their Part 107 Remote Pilot Certification and the Nebraska Aerial Application License through the Department of Agriculture.  Ongoing Implementation and Monitoring:  Operations Launch: As soon as the drones are operational, we will begin serving our customers, ensuring precision applications of fertilizers, pesticides, and cover crops. Last year we always had two days planned out during the month of July. Pasture jobs are gaining speed so we will make sure we are a week planned out with these acres to keep them moving  Training Program Development: We have each new operator trains with the Owner of Ference agronomy. We make sure the trainee has at least 500 acres with Johnny Ference of application before going out. Also we have 50 acres training of only water to teach the process to the trainee.  Challenges and Mitigation Strategies:  Weather Delays: Weather can impact drone flights. To address this, we have established flexible scheduling and will prioritize tasks based on weather forecasts. Also we make sure the wind speed is below 12 mph for any application to make sure the job is done right.  Equipment Maintenance: We will implement a proactive maintenance schedule to minimize downtime and ensure the drones are always ready for deployment. These are morning checks, and after every jobs checks to make sure the drones are able to fly that day.  Regulatory Changes: By staying updated on FAA and Nebraska Department of Agriculture regulations, we will ensure full compliance and adapt quickly to any new requirements.	

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13. Sustainability: Provide an explanation of how the project will be sustainable for a minimum of five years; include strategies and considerations for long-term success. Attach any evidence of sustainability to the application as Attachment F.

Ference Agronomy LLC has developed a comprehensive plan to ensure the sustainability of this project for a minimum of five years, with strategies in place to support long-term success. The foundation of this plan is built on our experience with drone technology and sustainable agricultural practices, which have already delivered significant economic and agronomic benefits to producers in central Nebraska. Currently spraying 15,000 acres across the region. Also We have help start at least 10 businesses and demonstrated drones to over 100 farmers across the Midwest. When doing these demonstrations always recognizing the Nebraska Public service commission to making it possible.

To maintain compliance and operational efficiency, Owner Johnny Ference will oversee all legal aspects of the application business, ensuring that necessary approvals, including the Part 137 exemption permit, remain current. This strong regulatory foundation is critical for sustained operations. We are also trying to get our night time exemption and swarming to promote more sustainability and productivity of the drones.

The project will employ at least two full-time staff members, who will be thoroughly trained to manage drone operations effectively. This includes obtaining FAA Part 107 flight certifications and, for managers, an aerial commercial applicator's license. By building a skilled workforce, Ference Agronomy ensures the expertise needed to operate and maintain the drones well into the future.

Operational sustainability will be supported by maintenance schedule daily checks and mid day support checks. Bi-weekly or every-1,000-acre inspections will be conducted to identify potential issues early, minimizing downtime. Additionally, all lines and major hardware components will be replaced and tested annually each fall to prepare the drones for the next growing season. Consumable parts will also be replaced as needed to ensure continued reliability. Also Ference agronomy will budget 3000 dollars per drone for repairs and maintenance every year.

In the event of an unexpected landing or damage, Ference Agronomy LLC is committed to prompt repairs, ensuring that operations can resume without significant delays. This proactive approach to maintenance and repairs minimizes disruptions and extends the lifespan of the drones.

Through these measures, Ference Agronomy LLC is confident in its ability to sustain this project for at least five years and to create a framework for long-term success.

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<b>Section II Project Details – Subsection A: Applies to Connectivity subprogram ONLY</b>	
1. Farm Site Size (acres):	
2. Number of Key Operational Locations:	
3. Number of Connected On-Farm Entities:	
4. Current maximum connection speed bandwidth in project area in Mbps: <i>(Must be &lt; 25/3 Mbps)</i>	
5. Speeds upon completion: <i>(Must be ≥ 100/20 Mbps)</i>	
6. Do you certify that the farm site(s) to be served are currently unserved or lacking broadband Internet service at speeds of at least 25/3 Mbps download/upload?	
7. Do you certify that upon completion of the project, the farm site(s) served by the project will have access to minimum speeds of 100/20 Mbps for precision agriculture connectivity to on-farm structures and devices, as required by Neb. Rev. Stat. § 86-1404(2)(a)? NOTE: If the FCC National Broadband Map indicates that the location is already receiving speeds of 25/3Mbps or higher, applicants are required to submit evidence refuting the data on the broadband map. (Include as Attachment F)	

**Section III: Technical Summary (Applicants must complete the relevant subsection)**

**Section III: Technical Summary – Subsection A: Applies to Devices and Technology subprogram ONLY**

1. Applicant's Experience: Overview of the applicant's experience and expertise in precision agriculture devices and technology solutions, specifically as related to the devices/technology included in the application. In cases where the applicant lacks direct experience, an explanation is required on how they plan to acquire the necessary skills and knowledge to operate the equipment effectively. Provide details of past successful projects or initiatives related to precision agriculture or similar technologies.

Ference Agronomy LLC has extensive experience and expertise in utilizing precision agriculture devices and technology solutions. Over the past several years, we have successfully implemented drone-based applications and high-resolution imagery analysis to improve agricultural efficiency and productivity for producers in central Nebraska. These projects have covered over 15,000 acres of crop ground, where we applied fertilizers, pesticides, and cover crops with precision to optimize yield and minimize environmental impact. Additionally, we have mapped over 4,000 acres using drone technology, providing valuable data to farmers for informed decision-making.

Currently, Ference Agronomy LLC possesses the following certifications and licenses, ensuring compliance and operational excellence:

**FAA Part 107 Licensed Pilots:** Our team includes FAA-certified drone pilots equipped with the knowledge and skills to operate drones safely and effectively.

**FAA Part 137 Exemption:** We hold an exemption for overweight drones, enabling us to utilize drones over 55 pounds for agricultural applications.

**Drone Registration with the FAA:** All drones used in our operations are registered with the FAA, ensuring regulatory compliance.

**Aerial and Commercial Applicators License:** This license allows us to conduct commercial aerial applications safely and legally.

**Aerial Commercial Business License:** Issued through the Nebraska Department of Agriculture, this license enables us to operate as a commercial aerial application business.

**Certified Crop Agronomist:** Our team includes certified agronomist with expertise in crop management and precision agriculture practices.

**Pesticide Sale Permit:** This permit allows us to distribute and sell pesticides as part of our agronomic services.

**Employee Training Programs:** We offer ongoing training programs for employees, preparing them to obtain FAA Part 107 certifications and commercial applicator licenses, ensuring a skilled and compliant workforce.

These qualifications reflect Ference Agronomy LLC's commitment to maintaining the highest standards of professionalism and excellence in precision agriculture. By leveraging these certifications and licenses, we provide innovative and effective solutions to address the unique challenges faced by producers in central Nebraska.

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2. Program Details: Provide details about the proposed program involving precision agriculture devices and technology, including specifications and technical requirements. Include an explanation of how the chosen technologies align with the goals of the project.

The EAVision J100 is a cutting-edge agricultural drone designed to deliver high-efficiency performance, making it an ideal solution for modern farming operations. It stands out as the only drone on the market equipped with LiDAR technology, enabling precise navigation across diverse and challenging terrains. This will help great in central Nebraska for the difficult terrain fields. Also will help with pivots and other objects like tree on edges of fields, This technology make it more user friendly.

Featuring mist nozzles for 30-300 microns , the J100 ensures fine, even atomization with precise control over droplet size and spray patterns, making it suitable for a wide range of crop types. This allows for the correct application of foliar feeds and pesticide sprays for the producers.

With intelligent multi-function capabilities, including lifting, spreading, and surveying, the J100 streamlines complex agricultural tasks, reducing operational time while enhancing productivity. Its adaptability to various applications ensures unmatched accuracy and efficiency, setting a new standard for agricultural innovation.

Adding two more drones to our operations will significantly increase our capacity to cover more acres and serve a larger number of farmers. This expansion will enable us to complete applications more efficiently, ensuring timely service during critical planting and growing seasons. By increasing our reach, we can introduce precision agriculture to more producers, showcasing the benefits of advanced drone technology. This will not only enhance immediate productivity and sustainability but also encourage further adoption of innovative solutions in the future, driving the growth of precision agriculture across the region.

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3. Expected Useful Life: The expected useful life of devices/technology included in the request for funding. Please identify any components which may require more frequent repair or replacement. The expected useful life of the drones included in this funding request is approximately 15,000 acres per drone, with a lifespan of 7-8 years under normal operating conditions. However, certain components will require more frequent repair or replacement to maintain optimal functionality.

Batteries are a critical component that tend to degrade over time. To address this, we are allocating \$1,500 annually per drone to cover battery replacement costs and ensure consistent performance. Additionally, propellers typically require replacement after every 1,500 acres to maintain safe and efficient operation. That is a 1000 dollar per set.

We have also budgeted \$2,500 annually per drone for general maintenance, including inspections, repairs, and replacement of wear-and-tear components. This proactive maintenance budget ensures that the drones remain operational and reliable throughout their expected lifespan. Now you are always one crash away for a 5000- 8000 dollar repair.

To prevent software-related issues, we will prioritize thorough testing of programming updates before adoption, avoiding unproven upgrades. This approach addresses challenges experienced by other drone operators in the Midwest during 2023 and 2024, ensuring reliable and uninterrupted service throughout the drones' lifespan.



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4. Maintenance Plan: Applicants should explain how the devices/technology funded with PRO-AG grant funds will be maintained for at least five years following project completion.

Maintenance Plan:

**Storage and Winterization:** Drones will be stored indoors every night to protect them from environmental damage. At the end of each season, drones will undergo a thorough winterization process to prepare them for extended storage and the next operating cycle.

**Daily and Field Checks:** Daily pre-flight inspections and checks before each field operation will be conducted to identify and address potential issues, preventing crashes and ensuring safe operation.

**Repairs During the Year:** Pumps and consumable parts will be repaired or replaced as needed throughout the year to ensure consistent performance and minimize downtime.

**Propeller Replacement:** Propellers will be replaced every 1,500 acres to maintain optimal performance and safety.

**Annual Budgeting:** We allocate \$2,500 per drone annually for general maintenance and \$1,500 for battery replacement to cover essential upkeep and repairs.

**Annual Inspection:** Each winter, drones will undergo a comprehensive breakdown and inspection to identify hidden damage. This will either be conducted by hiring a professional technician or performed personally by trained staff to ensure all potential issues are addressed before the next season.

**Section III: Technical Summary – Subsection B: *Applies to Connectivity subprogram ONLY***

1. Applicant's Experience: Describe the applicant's experience providing precision agriculture on-farm connectivity solutions including their technical capability to meet the requirement to provide a minimum 100/20 Mbps. Include details of past successful projects or initiatives related to precision agriculture connectivity or similar technologies. Specifically, whether they currently provide broadband at the minimum 100Mbps/20Mbps speeds, and if so, where.

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2. Innovation and Technology: Provide a detailed description of the proposed network architecture including the specific technologies and strategies to provide service, a list of the on-farm structures and devices to be connected by project, placement of access points, data collection devices, and other key elements.

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3. Scalability Evaluation: Explain how the solution ensures reliable and scalable connectivity. This could include a plan for network expansion along with a description of strategies for preserving performance with increased device density.



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4. Maintenance Plan: Include details regarding the expected useful life of the facilities to be built. Include a statement as to the technological components used, and, if applicable, which components may require more frequent repair or replacement. Applicants should explain how the project will be maintained throughout the useful life of the facilities along with the applicant's plans to meet the minimum speed requirements in place for the PRO-AG grant for a minimum of five years following completion.

5. Latency: Include the expected latency of the network (in ms) upon completion. Explain how the expected latency aligns with the needs of your application. How does this latency impact the ability to perform real-time operations or data transfers in the context of precision agriculture?

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**Section IV: Legal** (*Applicants must complete the relevant subsection*)

**Section IV: Legal – Subsection A: Applies to Devices and Technology subprogram ONLY**

1. Provide a detailed outline of the pertinent qualifications and certifications essential for the proposed devices/technology. Explain whether the applicant currently holds the necessary qualifications and certifications, including any expiration dates. If not currently secured, define the planned steps and timelines for acquiring any essential qualifications and certifications.

FAA Part 107 Licensed Pilots: Our team includes FAA-certified drone pilots equipped with the knowledge and skills to operate drones safely and effectively. Currently have 2 on staff

FAA Part 137 Exemption: We hold an exemption for overweight drones, enabling us to utilize drones over 55 pounds for agricultural applications.

Drone Registration with the FAA: All drones used in our operations are registered with the FAA, ensuring regulatory compliance.

Aerial and Commercial Applicators License: This license allows us to conduct commercial aerial applications safely and legally. expires 2026

Aerial Commercial Business License: Issued through the Nebraska Department of Agriculture, this license enables us to operate as a commercial aerial application business. Renewing this month

Certified Crop Agronomist: Our team includes certified agronomist with expertise in crop management and precision agriculture practices. Renews in 2026

Pesticide Sale Permit: This permit allows us to distribute and sell pesticides as part of our agronomic services. Renewing this month

Employee Training Programs: We offer ongoing training programs for employees, preparing them to obtain FAA Part 107 certifications and commercial applicator licenses, ensuring a skilled and compliant workforce.

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2. Detail the applicant's strategies and commitments for sustaining the qualifications and certifications over the five-year post-deployment period.

Ference Agronomy LLC is committed to maintaining all necessary qualifications and certifications to ensure compliance and operational excellence throughout the five-year post-deployment period.

**Dedicated Staffing:** We will consistently employ at least two full-time staff members to operate the drones and manage daily operations. Additionally, two part-time staff members will provide support during peak seasons to ensure smooth and efficient workflows.

**License Renewals:** All required licenses, including FAA certifications and commercial applicator licenses, will be renewed promptly before each spraying season to guarantee legal compliance and uninterrupted service.

**Advanced Certifications:** We are committed to obtaining advanced certifications, including nighttime operation and swarming capabilities. These certifications will allow us to operate sustainably and efficiently by enabling nighttime spraying and managing multiple drones simultaneously. While our swarming plan includes the ability to run up to three drones at once, we plan to limit operations to two drones to maintain precision and control.

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**Section IV: Legal – Subsection B: Applies to Connectivity subprogram ONLY**

1. Applicant's Nebraska ETC Status:

2. Legal Representative Name (Must be licensed and in good standing to practice law in Nebraska or admitted pro hac vice)

3. Legal Representative Email:

4. Legal Representative Phone:

5. A description of any risk factors or legal challenges that must be addressed prior to or during the project in question (examples include local zoning, permitting, access to rights-of-way, etc.), as well as a plan for mitigation. Additionally, explain any engagement measures with proposed project location(s) or impacted communities.



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6. Has the applicant received letter(s) of support or approval from the owner of each farm site included in the grant application? Yes/No.  
NOTE: Letters of support must be attached to the application as attachment G and should clearly express the owner's consent for the connectivity project and their understanding of the proposed on-farm connectivity services and rates charged for service.

### Section V: Project Impact *(Applies to all applicants)*

1. Demonstrated Substantial Economic Benefit: Describe the significant economic impact your project will have on rural Nebraska. What tangible benefits can you quantify, such as job creation and income generation? Please provide illustrative examples.

The project spearheaded by Ference Agronomy LLC will have a transformative economic impact on rural Nebraska, offering tangible benefits such as job creation, income generation, and support for local businesses.

In the past year, Ference Agronomy provided employment opportunities that helped two individuals fund their first semesters of college. Both of these individuals are now pursuing entrepreneurial ventures in the agricultural sector, leveraging their experience with drones to enhance their cattle operations. The mentorship and support provided by Ference Agronomy have empowered them to explore drone technology as a supplemental income source, enabling them to sustain and grow their cattle herds.

The success of Ference Agronomy has directly influenced the establishment or growth of 10 other drone businesses in Nebraska, further multiplying the economic impact. Additionally, local educators have expressed interest in part-time summer roles within the business, viewing it as an opportunity to supplement their income amidst inflationary pressures. The flexibility of seasonal work aligns well with their schedules, creating a mutually beneficial arrangement.

Additionally, Ference Agronomy has demoed the drone technology to over 100 farmers across the Midwest and to local high school students, fostering awareness and excitement about the potential of precision agriculture. These demonstrations have inspired a new generation of agriculturalists and showcased how drone technology can revolutionize farming practices.

Ference Agronomy is contributing significantly to the support of local events and activities. The company prides itself on delivering economical, logistical, and agronomical solutions tailored to the needs of rural producers. Through third-party research, Ference Agronomy evaluates the return on investment (ROI) of new products, helping farmers make data-driven decisions. For example, in one project, a fungicide and foliar nutrition test on a 45-acre section of a 130-acre field resulted in a 15-bushel-per-acre increase. This translated to a \$60 gain for a \$20 input, providing a \$20,000 ROI if applied across the entire farm.

This type of innovation and verification is made possible by drones, empowering rural America to optimize operations and invest in the future of agriculture. Ference Agronomy LLC is committed to driving economic growth, fostering innovation, and creating sustainable opportunities for the agricultural community in Nebraska.

Moreover, this venture has allowed me and my young family to raise our two children in the best part of the country while giving back to the community that raised me. By supporting local farmers and businesses, we are creating a ripple effect of positivity and growth, reinforcing the strong sense of community that defines rural Nebraska.

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2. Continuing or Increasing Economic and Technological Impacts: How will your project provide ongoing economic and technological benefits over time? Outline the strategies you will implement to ensure sustained growth and progress beyond the initial implementation phase.

Ference Agronomy LLC is committed to providing ongoing economic and technological benefits to rural Nebraska, ensuring sustained growth and progress well beyond the initial implementation phase. Our strategy includes fostering a younger workforce by hiring individuals who are passionate about agriculture and technology. We aim to provide opportunities for students to fund their college expenses while gaining hands-on experience in agricultural practices. Every year, we plan to employ at least one graduating high school senior part-time, offering them the chance to learn about drone operations and agronomy directly in the field. This approach not only supports educational goals but also promotes the next generation of agricultural drone experts.

Additionally, Ference Agronomy plans to expand our full-time workforce to include specialists who will support drone operations as well as soil services and consulting. This will enable us to provide a comprehensive suite of services to local farmers, ensuring they receive the highest quality of support to optimize their operations. By offering such tailored services, we aim to uplift the local farming community, ultimately driving economic growth in the region.

To further support local agriculture, Ference Agronomy envisions bringing together a group of farmers to establish our own Practical Farm Research program in the Ord area, modeled after Beck's Practical Farm Research. This initiative will allow us to identify and implement farming practices that generate measurable returns on investment, benefiting both individual operations and the local economy.

Ference Agronomy is dedicated to staying at the forefront of agricultural innovation. We actively pursue advancements in drone technology and precision agriculture to enhance our offerings. This grant will accelerate our ability to adopt new technologies and expand our impact, ensuring we remain leaders in agricultural solutions for years to come.

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3. Water Conservation Focus: If applicable, please explain in what ways does your project prioritize water conservation? Explain the innovative strategies, technologies, or practices you plan to implement to promote sustainable water management and mitigate water usage.

Water conservation is an essential priority for Ference Agronomy LLC, as it directly impacts not just the current generation but future generations as well. Our project incorporates several innovative strategies and technologies to promote sustainable water management and mitigate water usage effectively.

One of our key strategies involves utilizing drones to scout pastures and fields for specific problem areas before applying treatments. This targeted approach reduces the need for mass treatments, minimizing the potential for pesticides or herbicides to enter the water system. By addressing only the problem spots, we conserve resources while protecting water quality.

We are also trialing methods to treat only lower-production acres experiencing insect pressure. This selective application approach keeps water usage in check and ensures sustainable management practices. Drones additionally enable the precise spreading of cover crops on erodible ground within standing crops. This practice significantly reduces soil erosion, preventing fertilizers from being washed away and preserving their effectiveness within the fields.

In wetland areas, we are actively working to control invasive phragmites, which choke out native cattails vital for water filtration. . By addressing phragmites early, particularly as they begin to encroach on Valley County, we aim to preserve wetland health and prevent herbicide contamination in water systems.

This year, Ference Agronomy also performed a job applying sterilants on irrigation canals to maintain their cleanliness for the next growing season. This practice helps mitigate potential disease pressures and ensures efficient water delivery for agricultural use.

**Section VI: Financial Projections (Applies to all applicants)**

1. Provide comprehensive financial projections for the project. This should include both short-term (1-3 years) and long-term (4+ years) forecasts, detailing anticipated costs, revenues, and key financial health indicators such as net cash flow and profitability ratios. The projections should demonstrate a realistic estimate of income and expenses and the overall financial impact of the project.

**Budget:**

**Cost:**

EAV J100s Drones with Batteries, Spreaders, and accessories for agricultural application: \$63,986  
 Generators for batteries: \$2,000 per drone 4000 total  
 Total: \$67,986

**Funding:**

Pro Ag Grant: 80% of the drone cost = 54,388  
 Ference Agronomy LLC: 13598.00 Total: \$67,986  
 If we receive this grant, Ference Agronomy LLC has the funds to match the proposal above.

**Financial Projections**

Year 1 (Both drones operating at minimum acreage):

**Income:**

Grant: 54,388  
 Acres covered by the drones (5,000 acres x \$12/acre): \$60,000  
 Product Sale with application: \$6,000  
 Total Income: \$120388

**Expenses (With drones paid off in the first year):**

2 EAVison J100s Drones with Batteries, Spreaders, and accessories: \$63,986  
 Generators for batteries: \$4,000  
 Plumbing for application: \$1,500  
 Labor: \$12,500  
 Training: \$500  
 Consumables: \$8,000  
 Fuel: \$1,500  
 Insurance: \$5,000  
 Trailer- 10,000  
 Potential interest: \$4,250  
 Total Expenses: \$111,236

Gross With Grant: Year 1 \$9,152 (with drones paid off in the first year).

Year 2 - Net - 39,000  
 Year 3 Net - 45,000  
 Year 4 Net- 48,000  
 Year 5 Net - 50,000      Total - 182,000

**Without Grant-**

Year 1 Net -\$ 51236  
 Year 2 Net 12,236  
 Year 3 Net 32,764  
 Year 4 Net 40,000  
 Year 5 Net 46,000  
 Total= 79,764



**Section VII: Cost Benefit Analysis (Applies to all applicants)**

1. Provide a detailed cost-benefit analysis for the project. This analysis should quantify the expected return on investment (ROI), outlining the financial impact of the project in both the short-term (1-3 years) and long-term (4+ years). The analysis should clearly demonstrate the financial returns of the investment.

**Cost-Benefit Analysis:**

**Short-Term Analysis (1-3 Years):**

In the first three years of the project, we plan to cover an additional 5,000 acres annually using drone technology. The total investment during this period is estimated at \$20,000, which includes costs for drones, maintenance, and batteries. Gross revenue from these operations is projected at \$60,000 per year, resulting in a net annual profit of \$40,000.

From this revenue, \$2,500 will be allocated annually for maintenance and \$1,500 for battery replacements to ensure the drones remain operational and efficient. This approach ensures financial stability and allows for reinvestment in operational improvements.

**Long-Term Analysis (4+ Years):**

By years 4-5, with established systems and processes in place, we aim to increase drone coverage to 8,000 acres annually. This increase in acreage will result in gross revenues of \$90,000 per year. The higher income will enable us to invest more in employee training, additional equipment, and operational efficiency.

With continued reinvestments, such as upgrading drones and expanding our workforce, the financial impact of the project is expected to grow, enhancing our capability to serve more farmers and sustain long-term profitability. The projected ROI demonstrates the scalability and sustainability of this project, delivering consistent economic benefits to Ference Agronomy LLC and the agricultural community it serves.

**Section VIII: Monitoring and Evaluation** *(Applies to all applicants)*

1. Clearly list the major milestones that will be used to track the progress of your project. This should include a timeline for deployment of connectivity OR devices and technology. Each milestone should include an expected completion date. Examples: (1) Installation of connectivity infrastructure by [insert date]. (2) Deployment of smart sensors by [insert date]. (3) Full project implementation by [insert date].

Cover at least 5,000 acres with drones to promote the efficiency of the company. 1500 of pasture ground. By October 1st 2025

Schedule acres in April and May for June and July months with a goal of 2,500 additional acres. Done by May 2025

Generate additional revenue of \$55,000 for Ference Agronomy LLC from drone applications. By October 2025



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2. Identify the specific Key Performance Indicators (KPIs) that will be used to measure the success of the project following implementation. Each KPI should be measurable and aligned with the project's objectives. Examples: (1) [X]% increase in crop yield by [insert date]. (2) [X]% reduction in water usage within [insert time frame]. (3) [X] number of devices connected to the system by [insert date]. (4) [X]% improvement in farm operational efficiency by [insert date].

KPI 1 Start operation with the new drone by June 1st.

KPI 2: June have over 750 acres covered with the drones

KPI 3 July 10th have at least 10,000 acres lined up funigicde spraying

KPI 4 September 1, line up the other 750 acres of pasture

KPI 5 - Start a growers group for research by May 15th

Adjust acre plans if monthly targets are not met.

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3. Please explain the plan for monitoring and evaluating the success of the precision agriculture project. Include a detailed explanation of how Key Performance Indicators (KPIs) included in Section VII, field 2 above will be tracked and monitored throughout the project. Include specific metrics, tools, and timelines that will be used to track progress and measure outcomes.

### Step KPI 1

We will have the paper sent and mail after we receive confirmation of the grant and get the drones in person.  
Get insurance within 30 days.

### KPI 2

Have 2 full time employes cerifited and train on pasture spraying.  
Also have acres lined up within the 90 mile radius of my area.

### KPI 3

We currently have 6000 acres for 2025.  
We will reach out to other growers the first week of March to sell products and services to get the other 4,000 acres

### KPI 4

August 30 reach out to maore ranchers to promote the service

### KPI 5

Have three studies for the growers to test on 1200 acres total by May 1  
Have a meeting set up in August 10th to see the visual results,  
November 15th get data from the farmers fields  
December 10th have a meeting to show results



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**Attach/Include (see Program Guide for details):**

**ALL Applicants Must Include:**

- Attachment A. Project Budget/Documentation
- Attachment B. Eligible Entity Documentation
- Attachment C. Cybersecurity
- Attachment D. DJI Attestation
- Attachment E. Match Documentation
- Attachment F. Other Supporting documentation (if applicable)

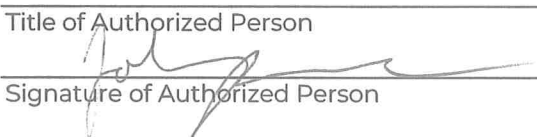
**Connectivity Subprogram Applicants Must Also Include:**

- Attachment G. Legal
- Attachment H. Technical
- Attachment I. Financial Statements
- Attachment J. Rate Comparability
- Attachment K. Shapefiles
- Attachment L. Project Diagram
- Attachment M. List of Key Operational Locations

**APPLICANT CERTIFICATION:**

I, the undersigned Ference Agronomy LLC representing Johnny Ference, hereby  
[Legal Name] [Farm/Business Name]  
certify the eligibility of our entity/project for the Precision Agriculture Grant (PRO-AG). By signing this statement, I confirm the legal name, contact details, size, and location of the farm site(s), along with our eligibility type as a **Agronomist**. Attached are supporting documents validating our eligibility, and I declare adherence to all requirements outlined in Precision Agriculture Connectivity Infrastructure Grant Act (Neb. Rev. Stat. § 86-1401 et seq.) & Commission Order C-5600. I certify that all information we have submitted on this application and its supporting documents is true and correct. I certify that we are not currently using, nor will we use, prohibited communications equipment and services developed by organizations on the Federal Communications Commission's Covered List pursuant to 47 U.S.C. § 1601. I understand that the submission of any false information or failure to comply with Commission requirements may result in penalties towards me and/or my organization.

Your signature confirms the accuracy and authenticity of the provided information. It will be considered binding for all purposes related to this application and any subsequent agreements or certifications.

Johnny Ference	1/16/20
Printed Name of Authorized Person	Date
Owner	
Title of Authorized Person	
	
Signature of Authorized Person	

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