AL 105 / DRONE – PASTURE PLANTING

PURPOSE - Using a drone to seed perennial grasses for cattle winter grazing offers a fast, precise, and low-impact method to improve pasture health and extend grazing seasons. Drones can access fields even when the soil is too wet for heavy machinery, minimizing soil compaction. They allow for targeted seeding between rows of standing crops or over existing forage, helping to establish high-quality forage for cattle during winter. This not only supports livestock nutrition but also enhances soil health, reduces erosion, and improves overall pasture resilience.

RESOURCE CONCERN - The purpose of this conservation practice is to enhance pasture and soil health while supporting sustainable livestock production. Specifically, using drones for inter-seeding perennial grasses allows for:

- Efficient and timely seeding without compacting wet soils
- Improved forage availability for winter grazing
- Better soil health through reduced erosion and increased organic matter
- Extended grazing seasons, reducing the need for stored feed
- Greater resilience of pasture systems to environmental stress

MANAGEMENT - Establishing perennial grasses and overseeding pastures for winter grazing using drones requires thoughtful planning and execution. **Timing and species selection** are crucial—select appropriate forage varieties and planting windows based on seasonal conditions, soil type, and livestock needs. This includes choosing cool-season species for overseeding warm-season pastures to extend grazing into the winter months. A thorough **field assessment** should identify areas suitable for drone seeding, such as thin spots in existing pastures, areas between standing crops, or open forage fields.

Effective **drone operation** involves calibrating the equipment for precise seed delivery, adjusting flight paths, seeding rates, and altitude to ensure even and efficient coverage. After seeding, **follow-up monitoring** is essential to evaluate germination, plant establishment, and forage quality, helping determine whether adjustments are needed for future applications. Lastly, **integration with grazing plans** ensures that seeded areas are managed properly, allowing adequate time for establishment before grazing and coordinating livestock rotations to prevent overgrazing. These practices support healthy pasture growth and improved forage availability during winter months.

REQUIREMENTS –

Site Suitability – Assess fields for soil condition, drainage, slope, and existing vegetation. Ensure drone access is not obstructed by trees or other barriers.

Seed Selection & Timing – Use regionally adapted forage species that enhance soil health and support livestock needs. Time seeding for optimal germination (e.g., late summer to early fall for winter grazing).

Seeding Specifications – Follow recommended broadcast seeding rates and use shallow-seeding species suitable for drone application. Calibrate drones for even seed distribution.

Soil Health Protection – Maintain at least 70% soil cover during vulnerable seasons. Chosen species should reduce erosion and enhance soil organic matter and water infiltration.

Grazing Integration – Select forages that meet winter grazing needs without compromising regrowth or soil protection. Use managed grazing to avoid overuse of newly seeded areas.

Monitoring & Documentation – Keep records of seeding details and drone settings. Monitor establishment, soil stability, and forage utilization over time.

COST ESTIMATE - The applicant will provide the District Administrative Coordinator with a detailed cost estimate for the proposed conservation practice.