



To: Sean Cronin, Executive Director, St. Vrain Left Hand Water Conservancy District

From: Emily Gallagher, Grassland Steward, Grama Grass & Livestock

RE: 7A Funding Request

Grama Grass & Livestock respectfully submits this application for funding from the *St. Vrain & Left Hand Water Conservancy District 5 Point Water Action Plan* for a Land Monitoring and Education Project to share the outcomes of what the impact of holistically managed livestock on private and public land are. This Project will include educating the public about regenerative agriculture, increasing drought resiliency, and reducing water runoff and erosion, all while producing local food. We appreciate your consideration of this project and look forward to our continued partnership in supporting the local food system and educating the community around us.

Sincerely,

Emily Gallagher

Description of Organization

Grama Grass & Livestock (Grama Grass) uses Holistic Management Practices¹ to effectively raise cattle for beef on both private and public land in Boulder County. These acres include both irrigated and non-irrigated lands. While Grama Grass' headquarters and multiple grazing properties are located within St. Vrain Left Hand Water Conservancy District (the District), some properties exist outside of the boundary lines, culminating to 460 acres of land impacted by our herd. Furthermore, Grama Grass' mission to impact native prairie lands in Boulder County means the acreage available to graze is ever changing. The stated "400 acres" above is a current idea for the land available to graze, but new opportunities become available everyday which can alter the amount of grazable acres. For example, in 2020 Grama Grass helped manage 78 acres, in 2021 that number increased to 330 acres, and in 2022 that number currently sits at 460 acres. Grama Grass doesn't own a single acre, instead it works on creating strong win-win partnerships to extend its reach. Grama Grass uses mainly cattle, and occasionally other livestock, to work towards specific objectives depending on the needs of the land and land owner.

¹ Holistic Management Practices are defined as a decision-making process that looks at the system as a whole, rather than one specific part. In the context of this project, when choosing to move animals or turn on irrigation, the stewards take into consideration the ecosystem, the animals' needs, the soil's needs (or lack thereof), and goals for the property, not just one symptom in particular. This mindset is evident in every decision from yearly planning to choosing which animal to slaughter.



These objectives include and are not limited to prairie dog mitigation, reduction of invasive plant species, riparian buffer repair, improved water usage, increased forage quality, and increased organic matter. Grama Grass & Livestock's staff will oversee this proposed Land Monitoring and Education Project, which will include pre- and post-animal impact monitoring, sample extraction for third party testing, the publication of a white paper, and facilitating education events. The team includes Grama Grass & Livestock CEO, Andy Breiter, who has over eight years of experience ranching and working with cattle in a holistic fashion. He also has a BsBa in Business Management from the University of Denver. Mr. Breiter has two employees; Melissa Helman has over three years of experience working with the native prairies of Colorado, and Emily Gallagher who has spent three years working on regenerative agriculture farms, earned a degree in Sustainable Agriculture, and is certified in Ecological Outcome Verification from the Savory Institute. Collectively, the team manages a yearly budget of \$250,000 to run the business.

Grama Grass has a history of working with other businesses and organizations within the community. These include other small farmers such as Bluebird Sky Farmstead, Ollin Farms, Speedwell Farm & Gardens, Artemis Flower Farm, which are all located within the St. Vrain Left Hand Water Conservancy District². It includes both the City of Boulder and Boulder County. And it includes NGOs such as the Humane Society of the US, Mad Agriculture, Flatirons Farmers Coalition, and Boulder Watershed Collective. Grama Grass will continue to work with these partners and more throughout the project.

The primary goal for Grama Grass is to restore native grasslands in and around Boulder County. Along with this process brings the opportunity to produce regeneratively raised, grassfed, local beef. Grama Grass delivers our live animals to local³, ethical processors, retrieves the meat once it's been butchered and packaged, and sells or donates the meat through online direct to consumer sales, company events, local CSAs, restaurants, wholesale, and schools. In 2021, Grama Grass sold 8 beef animals into the community. In 2022, Grama Grass is projected to sell 40 animals into the community. Grama Grass values their relationships with our beef buyers as it's a privilege to provide a nutritious food product to individuals and families in our area.

Project Background

Concerns for water scarcity and drought are ever increasing, not only in Colorado, but all over the world. Multiple institutions believe that agriculture has been a major contributor to the factors within and around water scarcity: erosion of topsoil, increased need for fertilizer, and contaminated waterways - to name a few. However, by creating and implementing a monitoring plan on the fields we graze our cattle, the Land Monitoring and Education Project will show how agriculture can have a positive or negative impact on our waterways while producing healthy, nutrient-dense food for our community. By testing soil, water infiltration, forage quality, brix

² See Map Below

³ Grama Grass & Livestock defines local processors as a location within 180 miles of our headquarters in Longmont, CO.



levels, bulk density, aggregate stability, and capturing photos on a yearly or bi-yearly basis. Grama Grass will show the impact livestock make on a landscape. From there we'd share our results with the broader community, so that our actions on the ground can be utilized and scaled to other operations throughout the District, Colorado, and beyond.

Strategic Alignment

The District identifies protecting water quality, education about water, growing local food, and storing water for dry years as key objectives under the *Five Point Water Action Plan*. This project seeks to meet those same objectives through maneuvering livestock in a strategic manner to improve ecosystem resiliency. The project can take place both within, and out of The District's boundaries. By implementing monitoring strategies before, during, and after animal impact, this project will be able to show how holistic management is working towards the goals of the *Five Point Water Action Plan*. For us, the primary reason for grazing livestock is to positively impact the land with the secondary intention being to produce local beef for the community in and around the District. The proposed project will demonstrate the truth behind this.

Through this project, Grama Grass & Livestock will be able to prove, using quantifiable/qualitative data, that livestock and ecosystems are dependent on one another. The Land Monitoring and Education Project will also show that this model is highly replicable. Proper utilization of livestock to improve water systems is applicable across multiple counties, ecosystems, and economic classes. From this project we'd be able to learn more about the interaction between all these things while drawing an important correlation to profitability. Progression of the project could include farmers and ranchers beyond Grama Grass & Livestock, as well as teams of monitors, and well attended educational events with experts within the field of regenerative agriculture and holistic management.

Approach

1. Grama Grass & Livestock will purchase appropriate monitoring equipment. The retrieval of this equipment will foster Grama Grass' ability to get consistent, precise data on one or multiple properties. Thus, creating effective and informative data to have in-house and to share with the public.
2. Grama Grass staff will complete a "pre-grazing" or "preliminary" monitoring session on properties within the project within a small frame of time during the spring, in the growing season. Monitoring at the same time every year is key for showing accurate data over time. Measurable indicators Grama Grass will track include, but are not limited to:
 - a. Mineral Soil Sample - requires third party testing



- i. Quantity dependent on size of property (1 sample for every divergent ecosystem on each property, average 3 per property)
- b. Biological Soil Sample - requires third party testing
 - i. Quantity dependent on size of property (1 sample for every divergent ecosystem on each property, average 3 per property)
 - ii. A biological soil sample will show the effectiveness of the soil and root community. Without a strong underground microbial community, the plants are not able to extract what they need from the soil, and the beings in the soil aren't able to receive what they need from the plant. Fostering and encouraging this relationship will increase soil organic matter, which will directly impact the land's ability to sequester water and fill deeper aquifers.
- c. Soil Water Holding Capacity Test - requires third party testing
 - i. Quantity dependent on size of property (1 sample for every divergent ecosystem on each property, average 3 per property)
- d. Forage Analysis - requires third party testing
 - i. Quantity dependent on size of property (1 sample for every divergent ecosystem on each property, average 3 per property)
 - ii. A forage analysis test will show the quality of the available forage. This information is vital for any farmer or rancher's ability to grow food. With forage lacking in nutrients, holistic management decisions will take this into consideration and potentially supplement the cattle with minerals, or off them more forage at one time. Seeing change in forage quality overtime is a direct reflection of the quality of the soil and ecosystem as a whole.
- e. Water Infiltration Test (1 sample for every divergent ecosystem on each property, average 3 per property)
- f. Photo Points
 - i. Photo Points will be taken twice a year, once during the cool season grasses growing season, and once during the warm season grasses growing season. Photos will take place in the same spot using location coordinates. The purpose of this is to determine growing plant species, ground cover, and plant or dung decomposition. All this information will allow stewards to make holistic management decisions and give the monitor more information to track year after year.
- g. Drone Photos
 - i. Drone photos will be taken twice a year, once during the cool season grasses growing season and once during the warm season grasses growing season. Taking photos from an aerial view gives a unique perspective and deeper understanding to the land utilized. From a 300ft to 500ft distance,



monitors can observe the paths of water runoff, significant bare ground areas, and land recovery from animal impact. All this information will allow stewards to make holistic management decisions and give the monitor more information to track year after year.

- h. Water Samples of property Streams or ponds - requires third party testing
3. Using a predetermined grazing plan, the appropriate livestock will be moved to specific properties, reflected in the schedule below. The construction of a grazing plan includes the amount of animal units (AU), available acreage, and available forage of a property. Given Grama Grass' opportunity to graze multiple properties throughout the year, the team creates one overall grazing plan to understand when the cows will move from property to property, as well as individual property grazing plans that'll show how the cows will move throughout the available acres, and the sizes of daily paddocks (size of paddock is flexible due to temporary fencing). However, given Grama Grass' desire to make holistic decisions, the predetermined grazing plans could alter throughout the year when situations arise such as not as much grass as anticipated, unexpected weather, new property availability, slaughter dates, and educational events. Determining how we create a grazing plan will be based on previous testing. All information about this action will be shared.
 - a. Additional land management plans will be created as our monitoring results come in. These plans include, but are not limited to water management plans, earthworks projects, additional livestock rotations, fertility programs, seeding, weed management and more.
 4. Data collection during the time period when cows are on the property will show the current state of the forage and how the cows are reacting to the land. These data points include, but are not limited to:
 - a. Cattle Weights
 - b. Body Condition Score
 - c. Noting unique qualitative data
 - d. Water usage (if applicable)
 5. Post-herd impact summary will give information to the land owner/contract holder about the animals' time on the land, these statistics include, but are not limited to:
 - a. Acres impacted
 - b. Animal weight gains/losses
 - c. Any unique situations or issues
 - d. Days spent on the property
 - e. Water/Irrigation information
 - f. Plan or important dates for the upcoming months
 6. Monitoring will take place once again at the location/property, during the growing season. Yearly monitoring will occur for the duration of the project. Every indicator collected during preliminary monitoring will be collected again, in the same way.



7. After a minimum of three monitoring sessions (year 0, year 1, and year 2), on-going reports will be available to the public to show the work completed by Grama Grass & Livestock. This will also be the time to go into the community and share the results of the monitoring events, this could include workshops, landwalks, lunch and learns, and other education opportunities, to show people the positive impacts of livestock on the land in regards to popular water issues. The hope would be that the monitoring program along with the educational opportunities continue indefinitely.

Budget

Grama Grass & Livestock Monitoring and Education Plan		
SVLHWCD Funding Request	Monitoring Tools	\$2,650.00
	Third Party Analysis	\$13,350.00
	Education	\$1,600.00
		\$17,600.00
Grama Grass & Livestock Contribution	Monitoring	\$8,400.00
	Planning	\$4,200.00
	Education	\$2,600.00
	Marketing	\$1,500.00
	Administration	\$1,000.00
		\$17,700.00
Total		\$35,300



Schedule

Grama Grass & Livestock Monitoring and Education Plan		2023												2024												2025												
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
		a	e	a	p	a	u	u	u	e	c	t	a	e	a	p	a	u	u	u	e	c	t	v	e	a	e	a	p	a	u	u	u	e	c	t	v	e
Predetermined Planning (for all properties)		█	█	█									█	█	█										█	█	█											
Scientific Monitoring (for all properties)				█	█										█	█												█	█									
Photo Points and Drone Footage						█				█							█					█							█				█					
Livestock on Rotation & on-going monitoring (this is an example Grazing Plan, a completed one for the project will be more detailed)	Left Hand Valley (78 acres dryland)		█	█							█						█	█							█	█								█	█			
	Belgrove (30 acres irrigated)	█																			█											█						
	Minnertista / Canino (86 acres irrigated)			█	█						█											█	█				█											
	Hartnagle Warner (30 acres irrigated)				█												█													█								
	Henry Laber (135 acres irrigated)						█	█									█	█															█	█				
	Andrus North (30 acres irrigated)					█												█													█							
	Chandler Open Space (39 acres irrigated)										█							█														█				█		
Publication and Education																												█	█	█	█	█	█	█	█	█		

Properties highlights in blue are outside of Distict's lines



Deliverables

1. Grama Grass & Livestock will host a land walk on a District desired property to explain our monitoring techniques and even allow hands-on participation in the monitoring itself.
2. After three monitoring sessions (year 0, year 1, and year 2) have been completed, Grama Grass & Livestock will share the findings with the public by publishing them on their website, hosting an event, and sharing graphics on social media.
3. Grama Grass & Livestock will host two educational events to reach at least 50 people in the Spring of 2025. The event will show the findings from the past three years as well as explain the importance of indicators monitored.
4. Grama Grass & Livestock will personally share findings with at least 7 other farmers or ranchers in the District.
5. The supplies purchased by funding this project will be available to other farmers, ranchers, and monitors in the area. Grama Grass & Livestock will work with at least 3 farms within The District boundaries to implement monitoring systems on their property, as well as at least 7 farms within Colorado to implement similar plans by the end of 2025.

District Recognition

1. The district will be identified as a funding partner on all established documents, presentations and speaking engagements. In the past month alone Grama Grass has spoken to 40 people about regenerative agriculture both on farm and off farm. If we win the proposed project the District would be mentioned at each of these engagements.
2. Grama Grass & Livestock will feature The District on our Instagram page and newsletter, explaining our relationship, gratitude for funding, and the project we will be able to implement because of The District. Grama Grass currently has 285 instagram followers and is projected to surpass 500 by the end of 2022. Our account was created in May of 2022.
3. Grama Grass & Livestock will dedicate a newsletter, sent to everyone on our email list, that will explain the *5 Point Water Action Plan*, the partnership between the District and Grama Grass, and a breakdown of our project. Grama Grass currently has 300 people on our email list. This listserv was launched in 2021.



District Map

