



MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE
RESILIENCY PROJECT
WORKPLAN

1. OVERALL PROJECT SUMMARY AND APPROACH

Montana, with 28% forested and 62% agricultural land, can sequester significant carbon dioxide. The Montana Department of Natural Resources & Conservation (DNRC) aims to reverse the trend of these lands becoming net carbon emitters. The DNRC is applying for a grant to implement seven measures that will reduce greenhouse gas (GHG) emissions, reduce criteria air pollutants (CAPs) and hazardous air pollutants (HAPS), benefit disadvantaged communities, and pursue innovative policies. The overarching goal of these seven measures is returning Montana's forests and agricultural lands to their natural ability to store carbon as a strategic move toward a more sustainable and resilient future.

Table 1 State Roles and Responsibilities

Entity	Roles and Responsibilities
Lead Agency Montana Department of Natural Resources and Conservation (DNRC)	<ul style="list-style-type: none"> • Issuing subawards to agency partners in accordance with EPA's Subaward Policy • Coordinating with agencies on hiring a program administrator to oversee subrecipients, and/or contractors and vendors • Tracking and reporting on project progress on timelines and milestones, expenditures and purchases • Submitting required semi-annual progress reports and detailed final report on grant implementation to the EPA • Community and stakeholder outreach and education
Agency Subawards <ul style="list-style-type: none"> • Montana Department of Agriculture (DOAg) • Montana Department of Environmental Quality Water Bureau (DEQ) 	<ul style="list-style-type: none"> • Complying with subrecipient requirements under EPA's Subaward Policy • Tracking and reporting to DNRC on project progress, expenditures and purchases • Tracking, measuring, and reporting to DNRC on accomplishments and proposed timelines and milestones • Community and stakeholder outreach and education

a. DESCRIPTION OF GHG REDUCTION MEASURES

Montana Climate Pollution Reduction Priorities (PCAP) (Appendix C) selected priorities for GHG reduction. This grant application focuses on Healthy, Resilient Forests and Innovative Agricultural Practices. Within each focus area, measures were identified to advance GHG emission reductions in line with the goals of the EPA's Climate Pollution Reduction Grant (CPRG) program.

The GHG reduction and enhanced carbon removal priority measures within the two focus areas are:

- Healthy, Resilient Forests
 - Forest Management and Wildfire Mitigation – Carbon Removal Measure
 - Expand Healthy Urban and Community Forests – Carbon Removal Measure
 - Mitigate and Extinguish Coal Seam Fires - Carbon Removal Measure
- Innovative Agricultural Practices
 - Nonpoint Source Pollution Reductions – Carbon Removal Measure & Agricultural Sector
 - Fertilizer Use Innovation for Improved Soil Health- – Agricultural Sector
 - Ranchland Stewardship Program – Agricultural Sector
 - Incentivize Innovation in the Cattle and Beef Industry – Agricultural Sector

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

Healthy, Resilient Forests – Montana’s vast landscapes contribute to its unique outdoor heritage, with forests playing a crucial role in maintaining a healthy environment by improving air quality and water cleanliness. However, these forests are currently facing significant health issues and wildfire risks due to factors such as excessive summer smoke, increased insect and disease outbreaks, and overstocked stands. Despite these challenges, the forests support thriving industries, jobs, and tourism.

Without proper management, unhealthy forests can quickly become disaster zones. Currently, Montana’s forests are struggling, with forest fires and decay transforming them from carbon sinks to net greenhouse gas (GHG) emitters. The 2020 Montana Forest Action Plan identified 3.9 million acres as priority areas for focused attention, using a data-informed geospatial model to pinpoint landscapes in need of restoration and management.

The Department of Natural Resources and Conservation (DNRC) runs programs to improve forest health and reduce wildfire risk on both private and public lands. However, these programs are consistently overdrawn, resulting in a backlog of critical projects lacking funding. Additional federal funding could help reduce this backlog, support workforce development, and train Montanans in forestry-related careers.

A suite of forestry measures aims to reverse this trend, protect Montana communities, and reduce GHG emissions. These measures would also inject new funding into the existing Urban & Community Forestry program, helping underserved communities develop and maintain local forestry programs. Trees play a vital role in urban and community landscapes, especially in a warming climate, by improving air quality, aesthetics, reducing stormwater runoff, and mitigating urban heat island effects. The program currently supports around 75 communities each year through nearly \$150,000 per year in grants. Additional funding would allow more communities to take advantage of the program and leverage millions of dollars to improve carbon sinks and enhance community resiliency.

The DNRC has identified burning coal seams as a significant threat to Montana’s environment, public safety, and climate planning efforts. These underground fires act as uncontrolled point sources of harmful greenhouse gases and pose additional risks, including degrading air quality, endangering firefighters and communities, and destroying valuable ecosystems.

Increasing drought and dry conditions have led to a rise in coal seam fires. In 2021, it was estimated that 60% of Rosebud County’s roughly 70 wildland fires were ignited by coal seams. The Northern Cheyenne Reservation recorded 74 fires in 2021, and in August of the same year, the largest-known coal seam caused wildfire burned 170,000 surface acres in Rosebud County and the Northern Cheyenne Reservation.

Measure 1 – Forest Management and Wildfire Mitigation - This measure aims to meet the CPRG program goals through reforestation, wildfire mitigation, and fossil fuel replacement. It involves collecting cones, growing 2.5 million seedlings, and planting in wildlands. The measure is prioritized due to significant forest loss in Montana from climate change and wildfires. It includes managing 8,000 acres of forest land to reduce tree density, mitigate wildfire risk, and use forest slash residuals as a fuel source.

Measure 2 – Expand Healthy Urban and Community Forests - This measure incentivizes the expansion of urban and community forests by maximizing grant funding for local urban forestry and green

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

infrastructure programs, particularly in underserved communities. It addresses climate pollution reduction and DEQ Priority Climate Action Plan needs.

Measure 3 – Mitigate and Extinguish Coal Seam Fires – This measure focuses on the Powder River Basin in Montana, including the Northern Cheyenne Reservation and Big Horn, Rosebud, Custer, and Powder River Counties. DNRC will support County and Tribal fire programs in the region, contract with coal seam fire contractors for extinguishment, and purchase equipment for mitigation.

Innovative Agricultural Practices & Working Lands- Agriculture is crucial to Montana’s economy and contributes significantly to its emissions. This section includes measures that support sustainable agriculture through soil management, water conservation, and waste management.

Ag producers experience firsthand the impacts of a changing climate and are critical stewards of Montana’s lands for future generations. The majority of Montana’s agriculture production is exported out of state for further processing resulting in a large carbon footprint. Montana is uniquely positioned to invest in emerging technologies that reduce greenhouse gas emissions and create value by upcycling resources now being wasted or underutilized. Healthy soils play a big role in capturing and storing carbon and mitigating the impacts of climate change. Montana has over 8.75 million acres of rangeland, most of which is in fair to poor condition - most of those soils may contain less than 1% soil carbon, whereas historically they contained 8-12%. Improving soil health can increase carbon sequestration while also supporting higher profitability operations.

The following measures include projects that support the research, development, and practice of sustainable agriculture through soil management, water conservation, and waste (manure) management – all of which have the potential to reduce greenhouse gases by thousands to millions of tons.

Measure 4 – Reduce Nonpoint Source Pollution and Associated Algal Blooms - DEQ will implement projects that reduce pollution and algal blooms. The measure proposes to increase funding to an existing grant program. Projects will sequester carbon, reduce nutrient pollution, and reduce algal blooms.

Measure 5 – Fertilizer Use Innovation for Improved Soil Health – The DOAg will implement nitrogen-based fertilizer use innovations that reduce greenhouse gas emissions, improve soil health, reduce volatilization, and capture more carbon in the soil.

Measure 6 – Ranchland Stewardship Program – DOAg will implement a program that improves grazing management planning and encourages adaptive strategies that improve soil health in Montana. The project leverages data-driven adaptive management decision-making tools that lead to increased carbon storage in the soil. By partnering with non-profit ag organizations, industry groups, state and federal agency supporters, and university experiment stations and extension offices, Montana has established itself as a leader in the adoption of regenerative management practice.

Measure 7 – Incentivize Innovation in the Cattle and Beef Industry - The State of Montana proposes to implement a Feedlot Innovation Program that provides technical assistance and cost-share opportunities to implement innovative animal waste management systems. This grant program will support equipment upgrades and use of web-based planning and documentation tools to improve efficiency and reduce the environmental impacts of the beef supply chain.

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

Table 2 Measure Tasks and Milestones

Measure #	Task #	Task Description	Anticipated Milestone Dates
1	1	Seed sourcing, Cone Collecting, Processing & Banking	Year 1-5
1	2	Seedling Production at the Conservation Seedling Nursery	Year 1-5
1	3	Tree Planting on underserved lands	Year 1-5
1	4	Forest thinning to reduce wildfire risk	Year 1-5
1	5	Forest slash grinding to produce biomass product	Year 1-5
1	6	Biomass utilized as fuel source	Year 1-5
2	1	Build and staff up urban forestry programs	Year 1-2
2	2	Conduct the canopy analysis	Year 1-2
2	3	Develop tree initiatives	Year 1-2
2	4	Plan and set goals	Year 1-2
2	5	Workforce capacity efforts	Year 1-2
2	6	Initiate Subaward programs – Standards will be created to verify projects provide qualitative data, climate-based measurements and benefits	Year 1-2
2	7	Build on program with more subgrant opportunities and awards cycles	Year 2-5
3	1	Hire DNRC Grant Administrator to oversee sub awards consistent with 2 CFR Part 200	Upon Award
3	2	Prepare Subaward template, guidelines and outreach material	Award + 2 Mo.
3	3	Education, Outreach, and Program Guides distributed through county and tribal fire programs	Award + 5 Mo.
3	4	Extinguishment contractors contracted	Award + 6 Mo.
3	5	Subawards to County Fire programs	Award + 6 Mo.
4	1	Community Engagement, Outreach, and Program Promotion	October 2024– January 2025
4	2	Open Call for Applications through competitive procurement consistent with 2 CFR Part 200.	January – February 2025
4	3	Review applications, notify successful applicants, develop contracts	February – September 2025
4	4	Initiate contracts and provide technical assistance to project sponsors for duration of the project. Project implementation, monitoring, and reporting	October 2025– October 2028
4	5	Update Call for Applications and contracting templates as needed. Repeat steps 1 – 4 yearly until 2029	
5	1	Hire and deploy agent to conduct outreach and implementation activities	Year 1
5	2	Increase the number of farms and ranches using precision agriculture	Year 2-5
6	1	Agriculture industry engagement around program design specifics	Upon Award
6	2	Hire and deploy a program manager to conduct outreach and design subawards consistent with 2 CFR Part 200	Upon Award
6	3	Selection of planning and documentation service provider to provide on-ground technical grazing management planning assistance and	Award + 6 mo

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

Measure #	Task #	Task Description	Anticipated Milestone Dates
		monitoring, through competitive procurement consistent with 2 CFR Part 200	
6	4	Deliver subaward support for participating landscape improvements. Initiate Subaward programs – Standards will be created to verify projects provide qualitative data, climate-based measurements and benefits	Year 1-5
6	5	Continue education and recruitment efforts to increase the number of Montana acres utilizing regenerative management practices to increase soil carbon sequestration	Year 2-5
7	1	Hire DOAg Grant Administrator to oversee sub awards consistent with 2 CFR Part 200	Upon Award
7	2	Agriculture industry engagement around program design specifics	September 2024 – December 2024
7	3	Preparation of a grant program guide, application, and promotional materials and community engagement around these materials	November 2024 - January 2025
7	4	Educate stakeholders and communities about program guide and solicit applications for projects	December 2024 – March 2025
7	5	Review applications, select projects, and enter into agreements with subaward recipients. Initiate Subaward programs – Standards will be created to verify projects provide qualitative data, climate-based measurements and benefits	Year(s) 2 and 4
7	6	Provide grant disbursement assistance and continued community engagement during and following project implementation	Years 2-5

Table 3 Risks and Mitigation Strategies

Measure #	Risk	Effect on GHG emission reductions	Mitigation Strategy
1	Survivability of Plantings	Planting losses would result in less mature trees, therefore resulting in less Carbon sequestration over time.	Hire professional planters and time plantings for optimal survivability.
1	Wildfire	High-severity wildfire occurrence before acres are treated would result in rapid release of carbon from forest stands.	Promptly contract forest management services and ensure projects completed in a timely manner.
2	Survivability of Plantings	Planting losses would result in less mature trees, therefore resulting in less Carbon sequestration over time.	Hire professional planters and time plantings for optimal survivability.
3	Access to Coal Seam fires and Severe weather/Seasonality	May delay or reduce cumulative GHG emission reductions in the near-term (2025 – 2030).	Placing resources at the local level allows quick response.

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

Measure #	Risk	Effect on GHG emission reductions	Mitigation Strategy
3	Private lands access	May reduce cumulative GHG reductions in the near term.	Targeted outreach to landowners where fires are mapped.
4	Program undersubscribed in priority areas	GHG emission reductions and criteria co-benefits may not occur over the same geographic scope as anticipated	Target outreach to priority geographies. Continue a “Focus Watershed” strategy that builds capacity of local organization.
5	Farmer recruitment delays.	May delay or reduce cumulative GHG emission reductions in the near-term (2025 – 2030)	Additional education and outreach.
6	Projects implemented are less effective than anticipated	GHG sequestration rate may not occur at the same scale as anticipated	Monitoring in place to inform regenerative management practices. Continue to learn from effectiveness monitoring and identify the most suitable locations.
7	Estimated capital investment in the planning, design, and installation of critical infrastructure development and deployment is estimated to exceed \$50 million.	May delay or reduce cumulative GHG emission reductions in the near-term (2025 – 2030)	Private investment base buy-in secured through MT Business Attraction and industry support.

Measure 1 - Forest Management and Wildfire Mitigation - This measure aims to achieve the CPRG program goals through reforestation. It involves sourcing seeds, producing, and planting 2.5 million tree seedlings over a 5-year grant term in identified low-income and disadvantaged communities, including Tribal nations. The reforestation efforts, supported by DNRC partner American Forests, will reduce pollutants and sequester carbon. The model can be scaled up annually with increased capacity at the Conservation Seedling Nursery. As a climate pollutant reduction measure, woody biomass will be used as an energy source to replace fossil fuel consumption. Grant investments will subsidize the creation of an in-woods biomass product, which will be transported to a manufacturing facility and used as a complete replacement for fossil fuel needs for heat generation.

Measure 2 - Expand Healthy Urban and Community Forests - This initiative aims to expand urban and community forests by maximizing grant funding, particularly in underserved areas. According to the 2020 Montana Forest Action Plan, about 70% of Montana’s population resides in towns and unincorporated centers. As population and development increase, community trees face challenges such as fragmentation, canopy loss, and various socio-economic issues.

Healthy urban forests, which provide over \$17 million per year in benefits, can help communities manage climate-related threats. For every dollar spent on managing these forests, nearly two dollars are returned in environmental services and property value increases. They provide shade, reducing peak temperatures by 20-45 °F, and serve as windbreaks in rural areas, capturing three times more carbon than natural forests.

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

Montana's public urban forests save over \$1.8 million in energy and intercept more than 122 million gallons of storm water annually, easing the load on water treatment facilities. They also sequester about 9.5 million pounds of carbon and remove over 20 metric tons of pollutants from the air each year. However, Montana's urban forests are aging and lack diversity, making them vulnerable to invasive insects and diseases. Three species - ash, maple, and crabapple - make up nearly 42% of the total urban forest tree population, increasing their susceptibility to species-specific threats.

Measure 3 - Mitigate and Extinguish Coal Seam Fires - Implements Montana's PCAP by funding a proactive approach to extinguishing and mitigating coal seam fires in the state's LIDAC areas, utilizing existing county and tribal resources. Grant funds would provide support for programs that deliver significant community benefits, including the reduction of Criteria Air Pollutants (CAPs) and Hazardous Air Pollutants (HAPs) in LIDAC communities. Grant funds would result in safeguards for LIDAC communities and their local farming/ranching economies from range fires ignited by burning coal seams and promoting the employment of the local workforce by contractors. Grant funds would supplement other funding sources in neighboring jurisdictions that perform similar work but are not applicable to private lands, such as the State Abandoned Mine Lands Program and federal fire resources from the USDA/USFS and USDOJ/BLM. Funding to extinguish and mitigate coal seam fires would aid in developing collaborative efforts across the region yield an economy of scale for the extinguishment of coal seam fires.

Measure 4 - Nonpoint Source Pollution Reductions - The NPS and Wetlands Program of DEQ has a longstanding track record in spearheading projects aimed at reducing NPS nutrient pollution. In Montana, the primary culprit behind water quality degradation is NPS pollution. A holistic strategy to curb nutrient pollution is essential to sustainably diminish the occurrence of algal blooms and their related greenhouse gas emissions. Measure 4 is set to launch a specific NPS pollution reduction initiative, concentrating on lakes and upstream waters known for algal blooms or state waters that fail to serve their beneficial uses due to nutrients.

The execution of Measure 4 brings the added advantage of lowering the energy consumption and greenhouse gas emissions linked with nutrient removal required for the treatment of municipal drinking water and wastewater. The reduction in energy required for water purification and treatment is particularly crucial in several of our rural communities, which are categorized as low-income and where energy expenses are higher than average.

Measure 4 works in harmony with Measure 6 and other funding resources currently utilized by Montana, including Federal §319, Montana House Bill 6, and State Revolving Funds. By expanding the reach and magnitude of NPS reduction projects and endorsing projects beyond municipal facilities, the greenhouse gas reductions from pollution reduction strategies will be optimized for the benefit of Montana's communities.

Measure 5 - Fertilizer Use Innovation for Improved Soil Health - The agricultural sector can diminish its greenhouse gas emissions by adopting innovative practices and cutting-edge technologies. Techniques such as the precise application of Nitrogen-based fertilizers and the use of Nitrogen-fixing cover crops can boost efficiency and curb emissions. The adoption of these advancements not only fosters sustainability but also mitigates the disproportionate impact of emissions on susceptible communities.

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

Measure 6 - Ranchland Stewardship Program - Regenerative grazing employs a four-tiered strategy for ranchland management, leading to enhanced soil health and a potential ten-fold surge in soil carbon storage.

- Emphasizing sufficient rest/recovery periods that generate ground cover (plant debris in contact with the soil surface) to help curb erosion potential, conserve moisture, buffer against compaction, and enable plants to regularly produce seeds.
- Pledging to shorter grazing periods with high livestock density (non-selective grazing, avoiding grazing of regrowth, trampling uneaten plant material, even distribution of manure and urine).
- Grazing forage upwards during the growing season (as opposed to downwards); plants grazed swiftly by large moving herds experience stimulated growth if allowed to fully recover post-grazing.
- Implementing planning and adaptive management, which depends on observation, adapting/evolving practices, and monitoring.

Measure 7 - Manure management strategies and technologies can:

- Facilitate the addition of manure- and food-waste-based carbon to the soil.
- Enhance efficiencies of transportation and land application.
- Separate phosphorus and nitrogen for more strategic uses and transportation efficiencies.
- Decrease or compensate for GHG emissions from the crop and soil fertility supply chain.
- Integrate with the strategic use of commercial fertilizers.
- Simultaneously improve water quality and climate outcomes.

Table 4. Measures Alignment with State of Montana's PCAP

Measure #	DNRC Measures	MT PCAP Page #
1	Expand Forest Management & Wildfire Mitigation	9-12
2	Expand Healthy Urban & Community Forests	12-16
3	Mitigate and Extinguish Coal Seam Fires	16-19
	MT DEQ Subaward	
4	Nonpoint Source Pollution	30-33
	MT DOAg Subaward	
5	Fertilizer Use Innovation for Improved Soil Health	22-24
6	Ranchland Stewardship Program	24-27
7	Incentivize Innovation in the Cattle and Beef Industry	27-30

b. DEMONSTRATION OF FUNDING NEED

CPRG implementation funding is necessary to fully implement the proposed measures. The State of Montana has applied for related grants; however, these grants are not sufficient to fully implement the proposed measures. Table 5 lists federal and non-federal funding sources that the State of Montana has explored, applied for, or received related to the proposed measures.

Table 2 Funding Sources Explored for Proposed Measures

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

Measure #	Grant Name	Funding Agency	Need for CPRG funding
1	Montana Forest Action Plan Grant	MT State funds	Funding is utilized to support forest management activities to reduce wildfire risk and improve forest health and resiliency. Scope and scale of forest management needs exceed funds available through this grant program. Funding is not permissible to use for chipping/hauling forest slash to replace fossil fuel consumption.
2	Inflation Reduction Act Urban Forestry Program	State allocated Federal Funds from Forest Service, not directly applicable	MT UCF received less than 9% of requested funds; does not specifically address climate measures.
3	Abandoned Mine Lands DEQ	Office of Surface Mining and Enforcement	Funding from OSME cannot be used for coal seam fires outside of areas previously mined. The majority of coal seam fires in Montana are on private lands.
4	Clean Water Act §319(h) funds: US EPA	Received, \$1,000,000 annually	On average the §319(h) Call for Applications receives 54% more funding requests than funding available. Funded projects are restricted to areas with approved watershed restoration plans. CPRG funding would not be restricted to these areas, benefiting LIDAC.
	House Bill 6, Montana DNRC	Received, \$500,000/year for 2 years	House Bill 6 (HB6) funding is a one-time infusion of new funding intended to complement the §319(h) by filling the 40% non-federal match requirement.
5	Fertilizer Assessment Program	Received, \$500,000/year	Commercial fertilizer educational and experimental programs fund research stages but leave a gap in promoting the adoption of existing industry tools.
6	Montana Growth Through Agriculture (GTA) Grant Program	MT Department of Agriculture (Less than \$1M/year)	GTA grant awards are capped at \$50,000 and must be directed toward value-added ag business. Land management improvements are not eligible.
7	ARPA Agriculture Infrastructure Grant Program	\$7.8M Federal COVID relief funds were used to support statewide value-added agriculture	Due to COVID food shortages, federal dollars were used to support increased meat processing, doubling the state's slaughter capacity. However, downstream food producers such as ranchers and feedlot operators were not eligible.

c. TRANSFORMATIVE IMPACT

The measures proposed in this application have the potential to create transformative impacts that lead to further significant additional GHG emission reductions.

Measure 1 - Forest Management and Wildfire Mitigation - Reforestation can pioneer the reduction of greenhouse gas emissions by boosting carbon sequestration, managing the water cycle, conserving

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

biodiversity, and encouraging sustainable development practices. These actions are vital parts of worldwide strategies to alleviate climate change and fortify resilience to its effects.

This measure increases funding for a vital array of activities, such as fuel reduction, controlled burns, pest control, reforestation initiatives, and biomass utilization. Its main goal is to persistently improve forest resilience against wildfires, pests, and diseases, while fostering carbon sequestration in forest ecosystems and substituting fossil fuels used by wood product facilities.

Measure 2 - Expand Healthy Urban and Community Forests - Urban and community forestry (UCF) is a crucial program to tackle the effects of climate change. Urban forest cover is a significant intermediary between climate change impacts and particularly susceptible population demographics. DNRC will pinpoint high-demand areas, i.e., urban heat islands, canopy disparities, urban forest health issues, and imbalances in ecosystem benefits through geospatial mapping. The DNRC UCF program will then execute subawards for strategic projects that address these needs while aligning with essential carbon and GHG reduction objectives.

Measure 3 – Mitigate and Extinguish Coal Seam Fires – Reducing actively burning coal seam fires will decrease GHG by 1) halting the release to the environment, and 2) preventing wild land fires caused by burning coal seams. Implementing a continuous mitigation program will encourage a reduction in GHG emissions. Restoration of vegetation and soils in the areas of burning coal will result in long term ecosystem services that sequester carbon. Training and equipping local fire departments with the tools needed to mitigate coal seam fires will result in a perpetuating program of work beyond the life of the grant.

Measure 4 - Nonpoint Source Pollution Reductions - Nonpoint source (NPS) pollution reduction projects often stimulate interest from neighboring landowners and municipalities, generating momentum for additional projects that have a pioneering impact on the resource of concern. To better comprehend our impact beyond project boundaries, we can quantify the number of landowners and municipalities inquiring about and participating in projects.

Measure 5 - Fertilizer Use Innovation for Improved Soil Health - Precision agriculture has evolved over the past few decades into a management approach for inputs like Nitrogen (N) fertilizer that account for spatial variation at relatively high resolution across fields. Enhancing the efficiency of agricultural inputs, including N fertilizer, is a crucial step in transitioning modern agriculture towards sustainability.

Measure 6 – Ranchland Stewardship Program - Regenerative Grazing is a planned, adaptive approach to managing livestock that puts the animal, vegetation, and soil into a reciprocal, mutually beneficial relationship, closely mimicking the synergistic relationship between grazers and grasslands that has evolved over millennia prior to human involvement. Montana alone has over 8.75 million acres of rangeland, most of which is in fair to poor condition. This means that most of those soils may contain less than 1% soil carbon, whereas historically they contained 8-12%. To return to these levels, ranchers must bunch cattle more densely, for shorter periods of time, on smaller plots of land; followed by longer recovery periods for plants to grow both above and below ground (sequestering carbon). 0.5 tons CO₂ per year is a conservative average given a progressive grazing system prioritizing rest, implemented on degraded rangelands in the West.

Measure 7 - Incentivize Innovation in the Cattle and Beef Industry - Advanced waste treatment minimizes environmental impacts by capturing resources before they become pollution, producing renewable energy, clean water, and precision low-carbon and organic fertilizers. Adopting these advancements not only promotes sustainability but also addresses the disproportionate effects of emissions on vulnerable communities.

2. IMPACT OF GHG REDUCTION MEASURES

Table 6 provides estimates of the cumulative emission reductions in million metric tons of carbon dioxide equivalent (mmtCO₂e) anticipated from implementation of the proposed measure(s) for two time periods: 2025 – 2030 and 2025-2050. Further details on quantification methods, relevant assumptions, annual emission reduction estimates, and any uncertainties associated with the estimates are provided in the Technical Appendix ([Appendix B](#)) to this application.

Table 3 Cumulative GHG Emission Reductions and Cost Effectiveness Anticipated from Implementation of Proposed Measures

Measure No.	Measure	Requested CPRG Funding	Cumulative GHG Emission Reductions		Cost Effectiveness
			(MMT CO ₂ e)		\$/MT CO ₂ e
			By 2030	By 2050	2025 - 2030
1	Forest Management and Wildfire Mitigation	\$8,215,955	0.037	0.11	\$224
2	Expand Healthy Urban and Community Forests	\$9,737,193	0.1	0.72	\$97
3	Mitigate and Extinguish Coal Seam Fires	\$9,816,744	1.6	12	\$6
4	Non-point source reductions	\$1,000,000	8.24E-05	6.32E-04	\$12,129
5	Fertilizer Use Innovation for Improved Soil Health	\$1,000,000	0.07	0.57	\$13
6	Ranchland Stewardship Program	\$10,000,000	0.13	1.13	\$80
7	Incentivize Innovation in the Cattle and Beef Industry	\$10,000,000	0.37	3.28	\$27
TOTAL		\$49,769,892	1.9	14.6	\$26

Measure 1 - Forest Management and Wildfire Mitigation - Greenhouse gas emissions will be sustained in the long-term from the reforestation and afforestation efforts as proposed. Post-planting monitoring will be conducted with communities for data collection and assessment of planting sites' long-term viability. Planting sites are intended to grow into mature stands in perpetuity, thereby sequestering the maximum tonnage of Carbon per acre per species.

Forest succession, the lifecycle of forest ecosystems, can be maximized through sustainable management interventions to sequester and store carbon as a long-duration cycle comprised of tree establishment, growth, storage, and capture. This measure reduces forest stand densities to maximize carbon sequestration, while simultaneously mitigating the rapid loss of carbon resulting from severe wildfire impacts. Management interventions will result in conditions sustained for a period 15+ years before the next intervention is necessary. During the implementation of the forest management interventions, activity by products (biomass) will be generated and utilized to replace fossil fuel consumption at a local wood products facility.

Measure 2 – Expand Healthy Urban and Community Forests - Funds from this grant will establish baseline information for tracking canopy change over time, and drive efforts towards improving shade equity and economy of scale in disadvantaged communities. The benefits of this project will continue for decades and beyond. Quantifiable, measurable, and sustainable outcomes include increased shade and canopy cover in urban areas; emission reductions (i.e. carbon sequestered); energy conservation; improved air and water quality; thousands of new trees in communities; established green infrastructure and green space; improved urban forest health; and multiple increased benefits in human health, wellness, and economic vitality. These outcomes will be tracked and monitored every ten years for a change analysis, using comparisons of urban forest data and software managed by the DNRC UCF Program long into the future and utilized for planning, assessments, and public information.

Measure 3 – Mitigate and Extinguish Coal Seam Fires - Subawards to county fire programs to map and extinguish coal seam fires will result in direct and measurable GHG emission reductions. In the long term, well equipped and trained county fire programs will provide a valuable resource in continuing to map and extinguish coal seam fires beyond the lifespan of the grant funds. Additionally, lands that are impacted by coal seam fires will have degraded vegetation and damage to the soil ecology caused by the replacement of O₂ by CO₂, impacts of heat and changes to the soil pH. Following coal seam fire mitigation projects, surface soils are reshaped, treated, and revegetated. Restoring vegetation and ecosystem functions will continue to capture and store carbon in the long term.

Measure 4 – Nonpoint Source Pollution Reductions - Nonpoint source pollution reduction projects will only be funded if they result in significant pollution reductions that result from restoration of self-sustaining stream, lake or wetland processes. Contracts require landowner agreements that ensure maintenance for the lifespan of the project.

Measure 5 – Fertilizer Use Innovation for Improved Soil Health - Low nitrogen use efficiency (NUE) is ubiquitous in agricultural systems, with mounting global scale consequences for both atmospheric aspects of climate and downstream ecosystems. Increasing input costs and environmental awareness encourage long-term deployment of more efficient nutrient management systems.

Measure 6 – Ranchland Stewardship Program - Regenerative grazing systems support long-term commitments by steadily increasing return on investment for the landowner over time. When managed correctly livestock can build soil health, reduce nutrient loss, reduce farm inputs, and diversify farm income.

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

Measure 7 – Incentivize Innovation in the Cattle and Beef Industry - Capital investments in durable infrastructure (digesters and other innovative technological measures) will increase number of reduced-emission cattle feeding operations and the number of cattle fed in reduced-emission environments in MT providing direct benefit as well as encouraging replicable production model changes across the state. Reduced transportation emissions from an increase in strategic and economic use of commercial fertilizers in concert with manure will remain permanently available.

3. ENVIRONMENTAL RESULTS – OUTPUTS, OUTCOMES, AND PERFORMANCE MEASURES

a. EXPECTED OUTPUTS AND OUTCOMES

Measure 1 - Forest Management and Wildfire Mitigation

Outputs:

- 44,000 tons of forest slash will be utilized as woody biomass fuel and will subsequently avoid the fate of being burned in open-air slash piles
- 2,500,000 trees grown and planted
- 8,000 acres of forests managed to increase rates of carbon sequestration and maintain resiliency to the impacts of high-severity wildfire

Outcomes:

- Slash biomass utilization will have beneficial impacts of eliminating the creation of temporal unhealthy ambient air quality.
- Support for forestry professionals and the forest products industry.
- Seasonal tree climbing and planting crews, primarily in Tribal communities.

Measure 2 - Expand Healthy Urban and Community Forests

Outputs:

- 5 million Subaward Program funds for CPRG grants projects, implementing 20-70 projects for community forestry throughout the state. Projects will report qualitative data, climate-based measurements, and benefits. Example projects: green infrastructure for tree planting in hardscapes; bioswales, structural soils, creating new greenscapes, large-scale tree plantings.
- Statewide canopy cover/equity assessment of communities identified from the CEJST map ranging from 45-70 communities.
- Large-scale tree planting initiatives, planting 100,000 trees to meet GHG projection measures and carbon reduction goals.
- Increasing canopy cover percentages in communities by 1-3%.
- Workforce/capacity hires through subawards, direct hires, consults, contracting, estimated at 10-20 job equivalents retained or created.
- Develop resources and educational information for Montana residents for climate-related urban forestry, species suitability lists, and landscaping tips to reduce carbon footprints.
- Tree propagation, plant materials improvement for climate-hardy species, municipal tree stock and nursery partnerships Climate-based metrics reporting and statistics for all subaward projects.

Outcomes:

- Increased biodiversity, forest health by planting more varieties of trees that are also climate-hardy and perform high in carbon sequestration, restorative plantings in degraded urban areas

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

- Success stories, story maps, geospatial information.
- Community orchards, food forests and food security projects, sustainability initiatives.
- Public health metrics, heat mitigation and temperature comparison assessments, wildland-urban interface landscaping, erosion mitigation.
- Projects for analyzing, planning for climate adaptation and resiliency, environmental, economic justice, tree equity and education.

The following are additional pollutant removal calculations for urban forestry. These are derived from existing data representing roughly 25% of the full extent of urban forest measurements. From left to right are calculations at 1 year, projections at 5 years, and at 20 years. These numbers are in fact much higher when utilizing full (100%) urban forest representation.

Pollutant	Air Pollution Removal (US Short Ton) 1 year	Air Pollution Removal (US Short Ton) 5 years	Air Pollution Removal (US Short Ton) 20 years
Carbon Monoxide	0.385	1.932	7.546
Ozone	27.34	137.96	547.531
Nitrogen Dioxide	1.016	5.130	20.253
Sulfur Dioxide	1.483	7.483	29.29
PM2.5	24.83	126.678	507.275

Measure 3 - Mitigate and Extinguish Coal Seam Fires

Outputs:

- Measure acres of coal seam fires extinguished annually.
- Measure tons/acre of burning coal seams extinguished.
- Measure acres of forest and rangeland soils restored by revegetating lands above and around coal seam fires which will provide carbon sequestration.
- Coal seam fire mitigation projects in LIDACs.

Outcomes: This measure would measurably improve air quality by eliminating burning coal seams that release greenhouse gases and harmful pollutants including sulfur dioxide, mercury, and particulate matter (Kolker, Allan, et al. *Emissions from coal fires and their impact on the environment*. No. 2009-3084. US Geological Survey, 2009.). Extinguishing burning coal seams eliminates ignition sources that degrade forests grasslands and waterways crucial for carbon sequestration.

- Estimate tons of CO2 emissions eliminated by the tons/acre of coal seam fires extinguished.
- Estimate tons of CO2 emissions eliminated by extinguishing a wildfire source.
- Estimate CAP and HAP emission reductions eliminated by the tons/acre of coal seam fires extinguished.

Measure 4 - Nonpoint Source Pollution Reductions

Outputs:

- Miles of stream and acres of wetland restored.
- Up to eight nonpoint source pollution reduction projects
- Improved water quality as measured by EPA approved load reduction models.
- Final project reports and compelling before and after photo points

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

Outcomes: This measure is a bold step by incorporating greenhouse gas emission reduction strategies for agriculture and land use and municipal water sectors. And at the same time working to provide clean water, a basic human right, to all of Montana's communities.

- Cumulative yearly CO₂e from nitrous oxide and methane reductions resulting from funded nutrient pollution reduction activities.
- Increased resilience of aquatic resources to climate change impacts measured by the Best Practices implemented.

Measure 5 - Fertilizer Use Innovation for Improved Soil Health

Outputs: Precision Ag coordinator distinctive number of outreach and education efforts, meetings and work groups. Training materials and outreach measures.

Outcomes: This measure addresses a leading source of greenhouse gas emissions in Montana, volatilization of nitrogen-based fertilizer. Ammonia volatilization from urea and other N fertilizers is controlled by a number of diverse soil properties and environmental conditions that make losses difficult to predict in the field. Understanding these factors can help crop producers avoid applying urea and other nitrogen fertilizers in situations that may promote substantial volatilization, select best management practices to minimize loss, and increase nitrogen use efficiency. Additionally, this work will improve the delivery of nutrient management information to fertilizer users and promote voluntary reporting mechanisms to identify and track management practices and principles with the intent of reducing nutrient loss and related emissions.

Measure 6 - Ranchland Stewardship Program –

Outputs: distinctive number of outreach and education efforts, meetings and work groups. Training materials and outreach measures. Number and amount of subawards. Data collection and monitoring reports.

Outcomes: This measure supports increased adoption of regenerative agricultural principles that sequester atmospheric carbon dioxide. Overgrazing causes soil to be exposed, which leads to the release of carbon. Rotational grazing systems allow the soil and plants to recover between grazings, keeping the carbon in the soil. The proposed project leverages data-driven management tools that help landowners improve grazing plans and track carbon storage outcomes across Montana's native grasslands. Work under this grant will increase soil carbon sequestration through natural regenerative processes on Montana's expansive and diverse grasslands.

Measure 7 - Incentivize Innovation in the Cattle and Beef Industry

Outputs: distinctive number of outreach and education efforts, meetings and work groups. Training materials and outreach measures. Number and amount of subawards. Data collection and monitoring reports.

Outcomes: New and emerging livestock production technologies have created a timely opportunity for Montana's concentrated animal feed operations to reduce greenhouse gas emissions, including CO₂, N₂O, and CH₄. Indoor barns can help improve animal welfare, increase production, and facilitate proper waste management and resource recovery and beef is the last animal production industry to move CAFOs indoors. Montana is well-positioned, with a robust cattle production industry, but limited established concentrated feed infrastructure to demonstrate the environmental impact and market viability of this new model.

Outcomes will reduce waste and emissions associated with animal manure through strategic deployment of manure nutrient practices deployed in site or operation-specific manners. Manure management and

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

processing practices can be catered to support diverse uses on the landscape beyond crop production such as remediation and reclamation, green industry and turf farming, and erosion and sediment control.

Strategic manure management, even with traditional technologies can improve soil quality/health by sequestering carbon, reduce transportation costs and emissions for certain commercial fertilizers, support strategic and economic use of commercial fertilizers in concert with manure, and support closed loops of nutrient and carbon cycling with fewer losses to the environment.

Combined, the seven measures will result reduction in cumulative million metric tons of GHG emissions:

- **2025 – 2030: 1.9 metric tons CO₂e**
- **2025 – 2050: 14.6 metric tons CO₂e**

b. PERFORMANCE MEASURES AND PLAN

DNRC as the Recipient is accountable to EPA for oversight of all grant funded actions including all subrecipients in accordance with 2 CFR 200 and EPA's Subaward Policy. DNRC will require reporting from all subrecipients to meet the GHG reduction measures, timeline and milestones, applicable federal statutes, regulations, and reporting requirements.

Measure 1 - Forest Management and Wildfire Mitigation

- Quantity of trees grown and planted
- Area treated to achieve stand conditions that optimize carbon sequestration and storage
- Amount of biomass produced for replacing fossil fuels
- Estimates of GHG emission reduction
- Benefits to LIDAC communities

Measure 2 - Expand Healthy Urban and Community Forests

- Quantity of trees planted
- Volunteer hours and funds utilized
- Funds utilized
- Benefits to LIDAC communities
- Quantity of grants and funding amounts awarded
- Estimates of GHG emission reduction
- Tree inventory data with calculations of environmental benefits

Measure 3 - Mitigate and Extinguish Coal Seam Fires

- Number of subawards for coal seam fire mitigation projects
- Acres of coal seam fires extinguished
- Tons of coal seam fire extinguished
- Acres of soil and revegetation
- GHG emission reduction estimates
- LIDAC community benefits

Measure 4 - Nonpoint Source Pollution Reductions - DEQ established the following performance measures to track progress concerning successful processes and output and outcome strategies.

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

- Quantity of subawards for NPS pollution reduction projects
- Estimates of carbon sequestration and emissions reductions based on EPA approved load reductions used for reporting \$319 grant funding
- Benefits to LIDAC communities

Measure 5 - Fertilizer Use Innovation for Improved Soil Health –

- Quantity of farm acres adopting the use of on-field precision technology to identify and deliver optimum fertilizer application rates
- Benefits to LIDAC communities

Measure 6 - Ranchland Stewardship Program -

- Quantity of participating ranches through reporting of data-driven rangeland health metrics, including increased stocking density, decreased pasture size, decreased graze period length, increased number of pastures, greater water source availability, and longer recovery periods
- Benefits to LIDAC communities

Measure 7 - Incentivize Innovation in the Cattle and Beef Industry –

- Quantitative and qualitative data collection methods, such as surveys, articles, media coverage, site visits, and GIS mapping. The evaluation will collect feedback and statistics to improve the project's effectiveness
- Quantity of subawards to communities, particularly LIDACs, directly working with stakeholders and organizations to understand needs, gather input and feedback, and provide technical assistance and support to produce on-the-ground results

c. AUTHORITIES, IMPLEMENTATION TIMELINE, AND MILESTONES

Table 7 Implementing Entities, Roles & Responsibilities and Legal Authority

Measure	Implementing Entities	Measure-Specific Roles and Responsibilities	Legal Authority
1	DNRC Forestry & Trust Lands	Implement critical range of activities, including fuel reduction, controlled burns, pest management, reforestation projects, and biomass utilization.	Montana Code Annotated: Title 76, Chapter 13
		1600 acres of thinning per year for 5 years, 8,800 tons of slash chipped and hauled to biomass facility per year for 5 years, collect seed, grow and plant 500,000 seedlings per year for 5 years.	
2	DNRC Urban & Community Forestry	Year 1-2 will focus on building and staffing up urban forestry programs, conduct the canopy analysis, develop tree initiatives, plan and set goals, workforce capacity efforts, and initiating the subaward programs.	Montana Code Annotated: Title 76, Chapter 13
		Years 2-5 will further build from the establishment of the expanded program, with more subgrant opportunities and awards cycles, continued workforce development, implementation of projects.	
3	DNRC/CARDD	Lead Agency	Montana Code Annotated: Title 76, Chapter 13
	County/Tribal Fire programs	Year 1 - 2 Mapping and Coal Seam Fire Project Planning and Design Years 2 - 5 Coal Seam Fire Project Implementation	Montana Code Annotated: Title 7 Chapter 33
4	DEQ NPS and Wetland Program	Year 1 - 2 Administer RFP and Subawards	\$319 of the Federal Clean Water Act and Montana Code Annotated Title 75, Chapter 5
	Individual Project Sub-Awardees	Year 2 - 5 Individual project implementation, monitoring, and reporting.	
5	DOAg	Year 1: Hire and deploy agent to conduct outreach and educational activities.	Montana Code Annotated Title 80 Chapter 1
		Years 2-5: Continue recruitment efforts and increase the number of Montana farms using precision agriculture.	
6	DOAg	Year 1: Hire and deploy agent to conduct outreach and implementation activities.	Montana Code Annotated Title 80 Chapter 1
		Years 2-5: Continue recruitment efforts and increase the number of Montana acres utilizing regenerative management practices to increase soil carbon sequestration	
7	DOAg	Year 1: Develop subaward program	Montana Code Annotated Title 80 Chapter 1
		Year 2: Execute subaward agreements.	
		Year 3: Conduct Monitoring and Reporting Activities	
		Year 4: Execute subaward agreements.	
		Year 5: Conduct Monitoring and Reporting Activities	

4. LOW-INCOME AND DISADVANTAGED COMMUNITIES

a. COMMUNITY BENEFITS

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

The measures proposed in this application are expected to offer significant benefits to low-income and disadvantaged communities (LIDACs), aligning with the EPA's Environmental Justice 40 Initiative. An appendix (Appendix D) lists all LIDAC census tracts impacted by this proposal.

Measure 1 – Forest Management and Wildfire Mitigation - This measure addresses the increased risks faced by LIDACs due to climate change and their limited resources for adaptation or recovery. It also aims to protect public health by reducing wildfire smoke, a major source of air pollution, and supports rural economies through the development of sustainable wood products markets and improved biodiversity and water quality.

Measure 2 – Expand Healthy Urban and Community Forests - The Urban and Community Forests (UCF) Program will significantly and directly benefit Montana's LIDACs. The program currently serves an average of 75 communities a year and these funds will allow for expanded financial, educational, and technical assistance. The UCF proposal aligns with the Justice40 Initiative by focusing on community-based solutions that improve environmental quality, health, and well-being for all residents, especially those historically underserved.

Measure 3 – Mitigate and Extinguish Coal Seam Fires - This measure targets Montana counties and Tribal lands designated as "Disadvantaged" or "Partially Disadvantaged" using the Climate and Economic Justice Screening Tool (CEJST).

Measure 4 – Nonpoint Source Pollution Reductions - By combining CPRG funding with §319 Nonpoint Source funding, this measure better targets resources to communities experiencing environmental injustice. Priority will be given to projects that benefit LIDAC communities, with CPRG funding removing the match requirement for these communities.

Measure 5 – Fertilizer Use Innovation for Improved Soil Health - This measure promotes the adoption of innovative operational practices and emerging technologies in the agriculture sector to reduce its greenhouse gas footprint. These practices not only promote sustainability but also address the disproportionate effects of emissions on vulnerable communities.

Measure 6 – Ranchland Stewardship Program & Measure 7 – Incentivize Innovation in the Cattle and Beef Industry - The state of Montana has established relationships with several local and regional tribal government agencies, NGOs, and other entities interested in pursuing similar climate-related interests. This will enable the engagement of these partners to develop programs that will benefit their members and communities.

b. COMMUNITY ENGAGEMENT LETTERS OF SUPPORT (APPENDIX F)

The Montana Department of Environmental Quality (DEQ) conducted comprehensive outreach to communities, including Low-Income and Disadvantaged Communities (LIDACs), while formulating the measures in the Priority Climate Action Plan (PCAP). The DEQ identified LIDACs using the Climate and Economic Justice Screening Tool (CEJST) from the Environmental Protection Agency (EPA). The implementation of seven measures by the Department of Natural Resources and Conservation (DNRC) is expected to bring substantial benefits to LIDACs across Montana, in both urban and rural areas.

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

The DNRC, along with Subaward Agencies (Department of Agriculture (DOAg) and DEQ), plans to maintain active engagement with LIDACs during and after the implementation. This engagement includes:

- Formulating an outreach and engagement strategy to provide early, frequent, and ongoing community engagement opportunities.
- Organizing community consultations or public input meetings.
- Making a public list of all future community engagement opportunities, such as listening sessions, outreach, Q&A sessions, door-to-door visits, and community meetings.
- Conducting outreach to LIDACs about the impacts, needs, benefits, and challenges of grid resilience projects.
- Prioritizing projects in LIDAC communities and communities vulnerable to wildfires.
- Hosting discussions with LIDAC communities to gather feedback on funding opportunities and projects, using methods like in-person and virtual meetings, workshops, roundtable discussions, etc., tailored to each community.
- Requiring subaward recipients to engage with the communities where the projects are located and commit to ongoing community engagement throughout the project period.
- Awarding additional points to projects that include innovative and inclusive approaches and a detailed plan for community engagement when scoring applications.
- Displaying signage that includes the funding source logo and a brief description of the project, its goals, and benefits.
- Including information about the funding source in all press releases, news articles, and promotional materials related to the project.
- Using the DNRC website and Urban and Community Forestry (UCF) webpage to track projects, provide updates, share information about the project's goals and benefits, and offer resources related to urban forestry.
- Preparing and submitting financial and progress reports for grants, highlighting project metrics, maps, photos, stories, accomplishments, challenges, and recommendations for improving project outcomes.
- Reaching out to the Montana Agricultural Business Association (MABA), Montana Farm Bureau, Montana League of Cities and Towns, and Montana Stockgrowers Association and their members.

5. JOB QUALITY

Measure 1 - Forest Management and Wildfire Mitigation - The CPRG award will fund high-quality job opportunities in forestry, hiring professional tree climbers and planters seasonally over a 5-year term. Recognizing the workforce decline in forestry and natural resource professionals, DNRC will conduct a survey to understand existing workforce development opportunities. The aim is to tailor these opportunities to meet the needs of secondary and post-secondary education. Upon completion of the assessment, DNRC will implement an integrated natural resource workforce training program across the state.

Measure 2 - Expand Healthy Urban and Community Forests - This measure aims to build local workforce capacity and promote equity in urban forestry. A portion of subawards will be allocated to increase pathways into the field and expand the pool of urban forestry professionals. The focus will be on

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

developing opportunities for LIDACs and marginalized groups in Montana, supporting the development of training programs and learning modules. The goal is to cultivate a larger, more diverse workforce in urban forestry and the tree care industry.

Measure 3 - Mitigate and Extinguish Coal Seam Fires – Measure 3 will extend firefighting to a year-round activity, providing well-paying skilled positions in an area that is completely LIDAC. This measure will ensure job creation even during winter when coal seam fires are fought.

Measure 4 – Nonpoint Source Pollution Reductions – NPS pollution reduction projects will help maintain family-sustaining ranches by reducing maintenance efforts, improving forage and crop production, and reducing land loss. A majority of passthrough funding will support local subcontractors, such as fencing contractors or machinery operators used to recontour stream banks.

Measure 5 – Fertilizer Use Innovation for Improved Soil Health – Precision agriculture presents an opportunity to modernize farming practices and incorporate the latest emerging agricultural technologies. These new technologies will support high-paying jobs across the design, maintenance, and operating career spectrum.

Measure 6 – Ranchland Stewardship Program – Regenerative grazing projects will help maintain family-sustaining ranches by improving land productivity through soil health improvements, greater water absorption, increased plant diversity, noxious weed control, and efficient year-round animal forage. Subaward funding will support ongoing monitoring and measurement activities and technical consultation to better understand place-based management opportunities and maximize carbon market participation.

Measure 7 – Incentivize Innovation in the Cattle and Beef Industry – Increased adoption of new and emerging feedlot technologies will support new jobs in the industry by providing high-quality opportunities to participate in established food production methods paired with leading-edge environmental stewardship, modern plant design engineering, maintenance, and operation. Improved worksite manure management practices will attract labor to a historically depleted workforce.

6. PROGRAMMATIC CAPABILITY AND PAST PERFORMANCE

DNRC is a diverse agency which has employees that specialize in Forestry, Firefighting, State Trust Lands Administration, Water Rights, Conservation, and Financial Administration. As the lead agency for this proposal, DNRC is well equipped to execute all measures through direct agency actions and through subawards to its sister agencies and partners.

MT Dept of Environmental Quality (DEQ) employs experts in nonpoint source pollution reduction and greenhouse gas emissions from the transportation and energy sectors. DEQ has a successful track record of distributing federal funding for projects that reduce water pollution, greenhouse gas emissions and prevent and remediate soil contamination.

Montana Department of Agriculture (DOAg) is an agency of the state of Montana with expertise in soil health and monitoring, fertilizer management, rangeland management, environmental stewardship, and agricultural research and education. DOAg promotes Montana's primary industry by providing agricultural, public, and environmental services and protection. DOAg administers cooperative

MONTANA FOREST, COMMUNITY AND WORKING LANDSCAPES CLIMATE RESILIENCY PROJECT

agreements with the USDA, Food and Drug Administration and Environmental Protection Agency provide services and jurisdiction in areas of interstate commerce and international trade.

a. FEDERAL AWARDS PERFORMANCE (APPENDIX G)

DNRC has an exemplary record in managing federal awards. It administers federal support funding typically for infrastructure design and construction, and programs. Some of the grants DNRC has managed include:

- EPA Columbia River Basin Restoration (CRBR) Grant
- American Recovery Plan Act (ARPA), Sec. 602
- EPA DWSRF and WPCSRF
- EPA Water Infrastructure Improvements for the Nation
- NRCS Emergency Watershed Protection Program
- Sustainable Urban Forest Resilience Grant

b. REPORTING REQUIREMENTS

DNRC, as the recipient, is responsible for tracking and compiling reports for each of the seven measures. Reports to the EPA include quarterly check-ins, semi-annual progress reports, final report, additional information, or performance monitoring as requested by EPA, and Federal Funding Accountability and Transparency Act (FFATA) reporting.

c. STAFF EXPERTISE (APPENDIX E)

The DNRC CARDD and Forestry Divisions are proficient in managing federal grants amounting to millions of dollars across the state. These divisions of DNRC distribute federal grant funds to various entities such as state agencies, cities, counties, and Tribes. These funds are used to support projects that align with the objectives of the federal awards.

To combat coal fires, DNRC is committed to assigning two staff members to kickstart a dedicated eradication program. This program will also be supported by three full-time FTEs who will be responsible for its comprehensive implementation, management, monitoring, and reporting.

The organizations and individuals contributing to this project are in sync with the project's objectives and are ready to execute projects immediately. They bring to the table a wealth of experience in collaborating with tribal communities, offering technical support and resources, and leading community-centric projects. Their qualifications and expertise equip them to carry out project implementation, monitoring, and outcome assessment/reporting. All key partners play a crucial role in collaboration, ensuring the project is executed efficiently, caters to community needs, and achieves its set goals. Key personnel biographies are highlighted in Appendix E.