



County of Yolo

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CARBON FARMING PARTNERSHIP

Proposed Early Action to Implement Resolution No. 20-114 Related to the Climate Crisis

PROPOSED ACTION

The proposed action will provide Yolo County (“County”) growers, including growers who identify as Black, Indigenous and People of Color (BIPOC) and new farmers with tools, training, and technical assistance to develop and implement Carbon Farm Plans and other practices to reduce carbon emissions and sequester carbon. The Center for Land-Based Learning (“Center”) would lead this project, in partnership with the Yolo Resource Conservation District, the Carbon Cycle Institute, and the Yolo Land Trust.

This proposed action would rapidly increase the pace and scale of carbon farm planning and implementation in the County, including completing three model carbon farm plans and educating growers about the climate and soil health benefits of proven conservation practices, including the Conservation Reserve Program, over the next two years. In addition to providing technical assistance and training to growers in carbon farming principles, the Center will integrate direct feedback from experienced growers, as well as new BIPOC farmers, into the County’s new Climate Action and Adaptation Plan process, ensuring the new plan is supported by the agricultural community. The Center would also integrate climate and carbon farm planning into the Center’s California Farm Academy to provide education to new and BIPOC farmers. Lastly, this action would engage the broader public and agricultural community about carbon farming practices through outreach, including site tours, social media and targeted outreach to BIPOC farmers. The Center would develop metrics to track uptake of carbon farming in the County.

BACKGROUND

According to the Carbon Cycle Institute, agricultural and natural lands are the most valuable tool to massively scale up rates of carbon sequestration across the globe while also building climate resilience and ecological health. The Institute asserts carbon sequestration must become the next value-added agricultural product. The County has been a leader in agricultural land conservation for over 150 years and is poised to become a leader in helping growers address climate change impacts as well. With 85 percent of County lands designated for agricultural use, agricultural lands are arguably the County’s most valuable resource for increasing carbon sequestration and mitigating climate change.

Carbon farming involves implementing practices known to improve the rate at which carbon dioxide is removed from the atmosphere and converted to plant material and/or soil organic matter.

Practices such as hedgerows, cover cropping, reduced tillage, and habitat restoration all have demonstrated carbon benefits. A set of online tools (COMET) developed by researchers at Colorado State University, the Natural Resource Conservation Service, the Climate Change Institute, and the Marin Carbon Project, allows the quantification of greenhouse gas emission reduction benefits. Enhancing working land carbon, whether in plants or soils, results in beneficial changes in a wide array of system attributes, including soil fertility, water holding capacity, biodiversity, and resilience to drought and flood. Increasing carbon capture on working lands also helps to slow rising levels of carbon dioxide and other greenhouse gases in the atmosphere. According to an August 2020 report by scientists at the Lawrence Livermore Laboratory, California can increase the uptake of carbon on natural and working lands. The report estimates California can remove over 25 million metric tons of carbon dioxide by 2045, of which California's soils could store 3.9 million metric tons through carbon farming implementation.¹

The California Department of Food and Agriculture (CDFA) administers programs that promote carbon farming practices. CDFA's Healthy Soils Program (HSP) has two components: the HSP Incentives Program and the HSP Demonstration Project. The HSP Incentives Program provides financial assistance for implementation of conservation management that improves soil health, sequesters carbon and reduces greenhouse gas emissions. Between 2017 and 2020, the Incentives Program funded 604 projects that yielded 109,089 MT CO₂e reductions.² During that same period, the Demonstration Projects resulted in 71 projects with associated 3,900 MTCO₂e reductions. In 2021, CDFA received 1,328 applications for HSP incentives requesting \$90.52 million and 12 applications for HSP Demonstration Projects requesting \$2.02 million.

The Center for Land-Based Learning has already implemented a suite of carbon-beneficial practices at its Maples Farm north of Woodland and has identified others in its current draft Carbon Farm Plan. Practices implemented to date include over 2,500 feet of native plant hedgerows, a pollinator bioswale, perennial conservation cover, cover cropping, and compost application. Additional practices in the planning stages, or pending funding, include a 5-acre olive orchard with a research component using biochar and compost treatments, alley cropping, riparian restoration on Cache Creek frontage property, field trials using microbial inoculant and other soil amendments, perennial grain cropping, tree and shrub establishment, windbreaks, and additional hedgerows and perennial conservation cover. All these practices are designed as demonstration sites for training and educational purposes and all incorporate ecological monitoring to track changes in soil health (including soil carbon) and biodiversity.

CONSISTENCY WITH EXISTING POLICIES

Sequestering carbon in agricultural landscapes also supports strategies outlined in February 2021 *Yolo County Sustainability Plan*. Specifically, the *Yolo County Sustainability Plan* includes the following relevant strategies:

- Strategy EH-1: Update the County's Climate Action Plan to protect people, ecosystems, community assets, and resources from the anticipated effects of climate change
- Strategy EH-3: Prioritize nature-based solutions

¹ Baker, S. E., et al. (2020). Lawrence Livermore National Laboratory, LLNL-TR-796100. Retrieved from https://www-gs.llnl.gov/content/assets/docs/energy/Getting_to_Neutral.pdf

² Healthy Soils Program. (2021). Incentives Program 2017-2020 Summary by the Numbers. California Department of Food and Agriculture. Retrieved from https://www.cdfa.ca.gov/oefi/healthysoils/docs/HSP_incentives_program_level_data_funded_projects.pdf

- Strategy AG-1: Preserve Yolo’s agricultural land and ensure a strong local agricultural economy
- Strategy AG-2: Increase carbon sequestration of farmlands
- Strategy ED-1: Raise public awareness of sustainability topics and the public’s role in furthering the County’s sustainability goals

The proposed action also supports the following measures outlined in the 2011 *Yolo County Climate Action Plan*:

- A-6: Sequester carbon in agricultural landscapes
- AD-1: Prepare for the effects of climate change on agriculture

Furthermore, the 2015 *Yolo County Climate Action Plan Status Update Report* recommends that “Soil-Carbon as a form of Sequestration” and “Agricultural Easement and Agricultural Land Conservation Programs” be added to the list of agricultural measures in the next Climate Action Plan.

BENEFITS TO DISADVANTAGED/VULNERABLE COMMUNITIES

This action would benefit BIPOC farmers.

GREENHOUSE GAS EMISSION REDUCTION/CARBON SEQUESTRATION

In the short term, this action will not reduce greenhouse gas emissions or sequester carbon because it is focused on education, planning, and outreach. However, carbon farm planning is a dynamic process, and the Center has already identified priority implementation practices that can serve as demonstration sites for other Yolo County growers. Yolo County expects implementation of the plans developed through this early action to result in carbon sequestration on working lands, although the amount is unknown and carbon sequestration will not directly result from the planning process. The Center for Land-Based Learning will include processes to measure carbon sequestration resulting from implementation, as approved by Yolo County for consistency with the updated Yolo Climate Action and Adaptation Plan, in their model carbon farm plans.

CO-BENEFITS

The proposed action will increase awareness of the role of agriculture in protecting biodiversity and climate. The proposed action may improve local food security, provide greater economic equity and opportunities, strengthen the local agriculture economy, and provide support to new and BIPOC farmers. Other benefits include increased biodiversity, restored habitat, and improved air quality.

TRANSFORMATIVE/REPLICABLE ELEMENTS

This proposed action would create replicable models of Carbon Farming Plans and the Center would create replicable series of climate trainings and associated curriculum which could be adopted by other jurisdictions. The curriculum will also be translated into Spanish.

DEGREE OF READINESS

As the initial work to develop this partnership was completed in the summer of 2021, the Center is ready to begin implementation of this program immediately.

COSTS

The proposed action requests \$149,845.

FUNDING

County staff recommend the County allocated \$149,845 in American Rescue Plan funds to this program.

CONCERNS

COVID-19 may make implementation of this proposed action difficult if in-person gatherings are restricted.

PARTNERS

- Center for Land Based Learning
- Yolo Resources Conservation District
- Carbon Cycle Institute
- Yolo Land Trust
- U.S. Department of Agriculture Natural Resource Conservation Service

PERSONNEL

In the chart below, please list names, role, and contact information for all project leader(s) and project partners.

Name	Role (Lead or Partner)	Email	Phone
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