



December 21, 2022

Terry Cosby, Chief
Karen Woodrich, Deputy Chief
Alyssa Charney, Chief of Staff
Natural Resources Conservation Service (NRCS)

Submitted via Federal eRulemaking Portal at <http://www.regulations.gov>

Re: Mississippi River Network (MRN) Comments for Docket ID: NRCS-2022-0015 “Request for Public Input About Implementation of the Inflation Reduction Act Funding”

Dear Chief Cosby, Deputy Chief Woodrich, and Chief of Staff Charney:

The Mississippi River Network (MRN) appreciates this opportunity to submit a public comment regarding Docket ID: NRCS-2022-0015 “Request for Public Input About Implementation of the Inflation Reduction Act Funding.” We urge NRCS to implement this historic Inflation Reduction Act (IRA) funding in a way that is not only impactful for our environment and our communities that depend on it, but also efficient and expeditious. We understand how this may require NRCS to balance its real capacity constraints with the IRA’s stated goals to “improve soil carbon, reduce nitrogen losses, or reduce, capture, avoid, [and] sequester carbon dioxide, methane, or nitrous oxide emissions.” To that end, our comments are focused on specific practices and considerations that maximize benefits to our communities and the environments that sustain them. We are also focused on recommendations that reduce the need to apply nitrogen in the first place. Our hope is that these comments will enable NRCS to be more efficient in its implementation of IRA funds all while maximizing environmental outcomes.

MRN is a coalition of over 60 organizations, small businesses, and partners working together for a healthy Mississippi River for people, land, wildlife, and water.¹ The Network seeks to influence not only policies that impact the River, but also people’s perceptions of and connections to the River. MRN’s policy program works in tandem with our public education and advocacy program called *1 Mississippi* to urge decision makers to create federal and state policies that improve the health of the River. MRN educates both its 60+ member organizations and the public on how River-friendly policies may promote a healthier Mississippi River, and MRN amplifies opportunities to reach decision makers and advocate for such policies.

¹ To learn more, please visit MRN’s website at <https://mississippiriver.org/>

MRN is a participating member of the National Sustainable Agriculture Coalition (NSAC), and we participate in the Clean Water for All's (CWfA) Nutrient Pollution Working Group. We support the comments our colleagues at NSAC and CWfA have submitted through this RFI. MRN sees IRA implementation as a tremendous opportunity to make investments in the health and resilience of the Mississippi River in a holistic and impactful way.

RFI Question 1: What systems of quantification should NRCS use to measure the carbon sequestration and carbon dioxide, methane, and nitrous oxide emissions outcomes associated with activities funded through IRA?

MRN urges NRCS to seek out the best available science and to emphasize the use of quantification systems that provide a holistic, lifecycle account of climate change impacts. We would like to see NRCS take ecosystem-level approaches to considering how to measure the benefits of any practice. In other words, measurements should not only quantify reductions in the IRA's three target greenhouse gasses (GHGs), but also measure the suite of intersecting ecosystem benefits. Life cycle assessments should also include social, community, and equity metrics, such as those embedded and being explored in True Cost Accounting systems or Social Life Cycle Analysis (S-LCAs).

MRN urges NRCS to consider water (in addition to air) as it assesses the "prevent nitrogen losses" component of IRA funding prioritization. In the Mississippi River Basin, nearly 40 percent of streams have high levels of nitrogen and "in the Upper Mississippi River sub-basin, where 61 percent of the land area is used for agricultural production, 50 percent of streams have high levels of nitrogen."² Excess fertilizer pollution (also referred to as nitrogen pollution or nutrient pollution) threatens drinking water, public health, and habitats all along our Mississippi River and throughout its vast watershed.

What's more, the very process of creating and transporting synthetic nitrogen fertilizer contributes to carbon dioxide, methane, and nitrous oxide emissions.^{3,4} A study by Cornell University researchers suggests that the fertilizer industry's emissions of methane – which has 80 times the warming potential of carbon dioxide – may be 100 times higher than the industry's self-reported estimates.⁵

Considering the emissions inherent to the full nitrogen fertilizer lifecycle, MRN urges NRCS to prioritize practices that either reduce the need to apply synthetic nitrogen fertilizers in the first place or promote crop and cropping systems that require fewer nitrogen inputs to be productive. The quantification systems for measuring nitrogen losses should take the full lifecycle of nitrogen inputs into account, and the existing methods for monitoring and quantifying nitrogen pollution also need increased investment. Researchers at the University of Wisconsin are developing life cycle analysis tools for net GHG, nutrient

² U.S. Environmental Protection Agency (EPA), 'Nitrogen and Phosphorus Pollution in the Mississippi River Basin: Findings of the Wadeable Streams Assessment,' https://www.epa.gov/sites/default/files/2015-03/documents/epa-marb-fact-sheet-112911_508.pdf

³ Healthy Gulf, 'Fertilized to Death From mining, to production, to application, to the Gulf Dead Zone nitrogen and phosphorus pollution devastates Gulf communities,' <https://storymaps.arcgis.com/stories/215ab2977f7d466fb2973435bedf4c76>

⁴ Menegat, S., Ledo, A. & Tirado, R. Greenhouse gas emissions from global production and use of nitrogen synthetic fertilisers in agriculture. *Sci Rep* 12, 14490 (2022). <https://doi.org/10.1038/s41598-022-18773-w>

⁵ Friends of the Mississippi River, https://fmr.org/updates/water-legislative/cornell-research-fertilizer-plants-emit-100-times-more-methane-reported#_ftnref1

loss, and resource consumption (land, energy, water) for organic dairy operations in each of the major U.S. agro-ecoregions.⁶ We urge NRCS to invest in such lifecycle and systemic quantification systems.

Regarding GHG quantification, we encourage further investment in establishing the scientific rigor of measurements and data collection for the models that inform COMET-Farm⁷ through meta-analyses of current scientific literature. Our research focused MRN partner organizations are looking at the modeling used by the Intergovernmental Panel on Climate Change (IPCC) and recommend that NRCS engage those scientists working with IPCC. This collaboration with international fora may also help translate the impact of IRA funding to our shared international climate agreements.

MRN urges NRCS to explore, evaluate, and eventually employ sound practice-based approaches from Partnerships for Climate Smart Commodities projects, given that each incorporates a Measuring, Monitoring, Reporting, and Verification (MMRV) element.

Finally, MRN urges NRCS to make the data gathered from these quantification and monitoring systems publicly available and easily accessible (with farm/producer details de-identified and anonymized as appropriate). The substantial influx of public dollars into these climate-related conservation practices is a tremendous research and communications opportunity that should not be wasted. We encourage NRCS to make the most of this opportunity and make the data as widely available and accessible as possible. MRN looks forward to amplifying this information and NRCS' accomplishments.

RFI Question 2: How can NRCS engage the private sector and private philanthropy to leverage the IRA investments, including for systems of quantification?

MRN would like to see NRCS encourage and develop accessible opportunities for philanthropic partners to co-fund NRCS-supported research and outreach partners and projects. This would enable interested private grantors and philanthropic organizations to supplement project budgets that are partially funded by USDA programs.

MRN urges NRCS to support public private partnerships that have already demonstrated local success and have a track record of promoting environmental outcomes through robust verification practices. One example in the Mississippi River watershed is the Soil and Water Outcomes Fund in Dubuque County, IA. This Fund is a good example for how to verify outcomes, and it may be a model to use to help standardize a market for ecosystem services and carbon sequestration.

We encourage NRCS to develop strong standards and verification practices for private partnerships to prevent opportunistic entities from taking advantage of an unregulated market at the expense of environmental outcomes. With the current limitations on NRCS field staff and capacity constraints, we appreciate that there is room for private partnerships to bolster NRCS' ability to administer IRA funds; however, we caution against an over-reliance on private entities whose prerogative is *not* to increase the public good or environmental restoration. We would like to see NRCS to consider private

⁶ Larson, R. 2021. Evaluating Environmental Impact of Organic Dairy Facilities using Life Cycle Assessment Tools. ORG award 2021-51106-35492 . Project summary and progress report, <https://www.nifa.usda.gov/data/data-gateway>

⁷ COMET-Farm is a tool developed by Colorado State University in conjunction with the USDA and NRCS that estimates the 'carbon footprint' of farm/ranch operation carbon.<http://climatesmartfarming.org/tools/comet-farm/#:~:text=COMET%2DFarm%20is%20a%20tool,emissions%20and%20sequestering%20more%20carbon>.

partnerships thoughtfully and encourage strong, transparent verification and reporting expectations in those partnerships.

RFI Question 3: How should NRCS target IRA funding to maximize improvements to soil carbon, reductions in nitrogen losses, and the reduction, capture, avoidance, or sequestration of carbon dioxide, methane, or nitrous oxide emissions, associated with agricultural production?

MRN reviewed NRCS' Climate-Smart Agriculture and Forestry (CSAF) Mitigation Activities List for FY2023⁸, and we note that not all Conservation Practice Standards (CPS) are equal in their ability to improve soil carbon, reduce nitrogen losses, or reduce, capture, avoid, or sequester carbon dioxide, methane, or nitrous oxide. The historic opportunity provided by IRA could be used to ramp up largely "business as usual" practices *or* this funding could be used to shift investments at the scale we need to see meaningful change; we're hopeful NRCS' decisions will demonstrate the latter. At the end of this section of our comment letter, we outline specific CPS and enhancements we urge NRCS to prioritize, discourage, remove, and add to the CSAF FY23 list.

MRN urges NRCS to prioritize practices that provide the most co-benefits⁹ to our communities and the environments that sustain them and reduce the need to apply nitrogen in the first place. A focus on such practices may enable NRCS to be more efficient in its implementation of IRA funds all while maximizing environmental outcomes.

An example of a framework to prioritize funding and efficiently using NRCS resources is Continuous Living Cover (CLC) farming. CLC strategies keep living plant cover and roots in the ground as much of the year as possible and can include agroforestry practices, cover crops, perennial grains, forage, and biomass. CLC farming can significantly improve conditions for the resources of concern to NRCS, farmers, and communities.

Some "climate smart" practices have single or narrowly focused benefits, do not deliver long-term benefits, and do not contribute to positive systemic changes. For example, while "precision agriculture" technologies (covered through two enhancements under CPS 590) can make fertilizer application more precise and efficient for a producer, the practice still requires nitrogen inputs (and therefore, contributes to greenhouse gas emissions as mentioned earlier) and have no other additive benefits to the agricultural system (e.g. using precision ag technology does not also create habitat or filter other pollutants the way a cover crop practice, as one comparison, would). Precision agriculture practices require expensive equipment and are used predominantly by large scale industrial ag operations who have the capital to invest in such equipment. We know that as soil health improves, fewer nitrogen inputs are necessary. And yet, many of the enhancements under CPS 590 may have the unintended consequence of locking in large scale producers into a practice that is not actually building soil health over time.

Instead of using IRA funds to increase CPS 590 practices, we urge NRCS to utilize the funds to support farmers to better estimate actual need through soil health assessments that include potentially

⁸NRCS, Climate-Smart Agriculture and Forestry (CSAF) Mitigation Activities List FY2023, https://www.nrcs.usda.gov/sites/default/files/2022-10/CSAF%20Mitigation%20Activities%202023_1028.pdf

⁹ By "co-benefits" we mean the multiple, additional environmental benefits any given CPS may have in addition to GHG reductions.

mineralizable nitrogen and/or side-by-side nitrogen rate trials, to build soil health and nitrogen mineralization capacity to further reduce the need for nitrogenous fertilizer, to substitute organic nitrogen sources (legumes, compost, etc.) for soluble nitrogen, and to budget inputs of nitrogen, phosphorous, and other nutrients to maintain but not exceed optimal soil nutrient levels.

MRN urges NRCS to remove CPS 366 (Anaerobic Digester) from its climate-smart practices list, and we hope that no IRA funds will be allocated to harmful biogas projects that turn animal waste into energy. Anaerobic digesters—the main technology used by the hog industry to cap waste lagoons to capture methane and make biogas—generate more methane than conventional lagoons, and open secondary lagoons that store digester waste releasing excess ammonia emissions. On-site or off-site venting and flaring of hog waste gasses also emit greenhouse gasses and other pollutants. Most hog operations utilizing digesters store waste in open lagoons where it emits methane, nitrous oxide, and ammonia¹⁰; use high-pressure sprayers to land-apply digester waste rather than injection or other methods that minimize emissions or potential water quality impacts¹¹; and vent and flare biogas on-site without any limitations. Multiple studies have found that making biogas in this irresponsible way has potential to dramatically reduce, if not eliminate, any climate benefits.¹² In addition, biogas sales rely on destructive fossil fuel infrastructure that harms the environment and is prone to methane leaks, and biogas-derived “natural gas” can displace less expensive, less carbon-intensive generation sources. When the entire life cycle is considered, biogas can unintentionally increase greenhouse gas emissions relative to the status quo.¹³

In terms of preventing nitrogen losses into water (in addition to air emissions), MRN urges NRCS to consider the geographic placement of conservation practices. Our Mississippi River’s watershed is tremendous and interconnected. All or part of 32 states and two Canadian provinces drain into the Mississippi River, totaling over 40 percent of the contiguous United States. Our Mississippi River basin also accounts for 90 percent of the freshwater flow to the Gulf of Mexico. Conservation practices in the Upper Mississippi River have an impact on the Lower River and on the Gulf. If IRA implementation considers investments in a holistic watershed-level way, then the impact of the suite of investments will be greater than the sum of its parts.

¹⁰ RICHARD BAINES, REDUCING GREENHOUSE GAS EMISSIONS FROM LIVESTOCK PRODUCTION 144–45.

¹¹ See Swine Farm Digester Waste Management General Permit, N.C. Dep’t of Env’t Quality (June 30, 2022), <https://deq.nc.gov/media/30375/download?attachment>

¹² Alessandra Fusi et al., Life Cycle Environmental Impacts of Electricity from Biogas Produced by Anaerobic Digestion, *FRONTIERS IN BIOENGINEERING & BIOTECHNOLOGY* 1, Mar. 11, 2016, <https://www.frontiersin.org/articles/10.3389/fbioe.2016.00026/full> (“If mitigation of climate change is the main aim, other renewables have a greater potential to reduce GHG emissions. If, in addition to this, other impacts are considered, then hydro, wind, and geothermal power are better alternatives to biogas electricity.”); Emily Grubert, At Scale, Renewable Natural Gas Systems Could be Climate Intensive: The Influence of Methane Feedstock and Leakage Rates, 15 *ENV’T RSCH. LETTERS*, Aug. 11, 2020, at 7, <https://iopscience.iop.org/article/10.1088/1748-9326/ab9335/pdf> (“Under some system leakage rates that have been observed for biogas systems, RNG might not even meet the less stringent threshold of outperforming FNG [fracked natural gas] from a GHG [greenhouse gas] perspective.”).

¹³ Alessandra Fusi et al., Life Cycle Environmental Impacts of Electricity from Biogas Produced by Anaerobic Digestion, *FRONTIERS IN BIOENGINEERING & BIOTECHNOLOGY* 1, Mar. 11, 2016, <https://www.frontiersin.org/articles/10.3389/fbioe.2016.00026/full> (“If mitigation of climate change is the main aim, other renewables have a greater potential to reduce GHG emissions. If, in addition to this, other impacts are considered, then hydro, wind, and geothermal power are better alternatives to biogas electricity.”)

MRN supports new, innovative conservation practices such as STRIPS (Science-Based Trials of Rowcrops Integrated with Prairie Strips) that have numerous environmental benefits and improved productivity for farmers. STRIPS are eligible for the Conservation Reserve Program and should be expanded to encourage use in other conservation programs.

Voluntary conservation easement programs have the potential to deliver big climate benefits. The majority of land in the Mississippi River basin is privately owned, and voluntary easements focused in this region may have a profound impact on the watershed as a whole. We urge NRCS not to reimpose Agricultural Land Easements (ALE) plans as part of IRA funding for Agricultural Conservation Easement Program (ACEP). We Urge NRCS to make Regional Conservation Partnership Programs (RCPP) easements an IRA priority.

In the below specific recommendations, MRN has focused on maximizing IRA investments by prioritizing practices that have multiple positive environmental outcomes or co-benefits. In other words, most of these practices not only reduce nitrogen losses (or decrease the need for nitrogen inputs in the first place), but also increase soil carbon, create habitat, or restore hydrologic functions. Most of these practices also contribute to increasing resilience of the ecosystem in the long run with benefits increasing over time.

We encourage NRCS to weigh practices with co-benefits more highly than practices with single or one-time benefits. We urge NRCS to avoid using IRA funds to invest in practices that do not deliver long-term benefits, do not contribute to increasing resilience of our agricultural systems over time, and may even have hidden emissions built into the lifecycle of the practice.

MRN urges NRCS to **prioritize** these CPS and enhancements when implementing IRA:

- CPS 311 Alley Cropping
- CPS 327 Conservation Cover
- CPS 328 Conservation Crop Rotation, especially this enhancement:
 - E328O Perennial grain crop conservation rotation
- CPS 329 Residue and Tillage Management, No Till
- CPS 332 Contour Buffer Strips
- CPS 340 Cover Crop
- CPS 393 Filter Strips
- CPS 412 Grassed Waterways
- CPS 512 Pasture and Hay Planting, especially the following enhancements:
 - E512A Cropland conversion to grass-based agriculture to reduce soil erosion
 - E512C Cropland conversion to grass for soil organic matter improvement
 - E512I Establish pollinator and/or beneficial insect and/or monarch habitat and
 - E512J Establish wildlife corridors to provide habitat continuity or access to water
 - E512M Forage plantings that improve wildlife habitat cover and shelter or structure and composition
- CPS 528 Prescribed Grazing, especially the following enhancements:
 - E528D Grazing management for improving quantity and quality of food or cover and shelter for wildlife
 - E528E Improved grazing management for enhanced plant structure and composition for wildlife

- E528H Prescribed grazing to improve/maintain riparian and watershed function - elevated water temperature
- E528I Grazing management that protects sensitive areas - surface or groundwater from nutrients
- E528L Prescribed grazing that improves or maintains riparian and watershed function - erosion
- E528P Implementing Bale or Swath Grazing to increase organic matter and reduce nutrients in surface water
- E528R Management intensive rotational grazing
- CPS 342 Critical Planting Area
- CPS 381 Silvopasture
- CPS 390 Riparian Herbaceous Cover
- CPS 391 Riparian Forest Buffer
- CPS 340 Wildlife Habitat Planting
- CPS 612 Tree/Shrub Establishment, especially enhancement:
 - E612A Cropland conversion to trees or shrubs for long term improvement of water quality
 - E612B Planting for high carbon sequestration rate
 - E612C Establishing tree/shrub species to restore native plant communities

MRN urges NRCS to **discourage** these CPS and enhancements when implementing IRA:

- Three Enhancement Practices in CPS 590 Nutrient Management:
 - E590A – Improving nutrient uptake efficiency and reducing risk of nutrient losses (which is intended only for "commercial fertilizers" and not organic sources of nitrogen, functionally excluding organic producers)
 - E590B Reduce risks of nutrient loss to surface water by utilizing precision agriculture technologies
 - E590D Reduce risks of nutrient losses to surface and groundwater by increasing setback awareness via precision technology

MRN urges NRCS to **remove** this CPS when implementing IRA:

- CPS 366 Anaerobic Digester

MRN urge NRCS to **add** these CPS and enhancements (not included in the current CSAF Mitigation Activities List) when implementing IRA:

- CPS Bundle for organic (B000CPL21), which includes the following enhancements
 - E484A: Mulching to improve soil health
 - E590A: Improving nutrient uptake efficiency and reducing risk of nutrient losses
 - E595B: Reduce risk of pesticides in surface water and air by utilizing IPM PAMS techniques
 - E393A: Extend existing filter strip to reduce water quality impacts
 - E612D: Adding food-producing trees and shrubs to existing plantings

RFI Question 4: How should NRCS streamline and improve program delivery to increase efficiencies and expand access to IRA funded programs and projects for producers, particularly underserved producers?

We encourage NRCS to implement IRA funds as quickly as possible for the practices that have the greatest benefits to our communities and the environments that sustain them. We support NRCS in making needed adjustments to increase their capacity and expedite the administration of these funds, for example through working more with private CCAs to expedite contracting, hiring/retaining technical assistance providers (especially those who have relationships to BIPOC¹⁴ communities), hiring/retaining conservation agronomists with specific expertise in climate smart practices, and strengthening relationships with local BIPOC led and serving organizations. We also encourage NRCS to pursue longer-term contracts wherever possible in the first year of IRA spending, especially for those practices we know may need longer timelines to demonstrate positive outcomes.

MRN urges NRCS to expand partnership and cooperative agreement funding programs while also reducing the administrative burdens of lengthy, detailed contracting negotiations and strict budgeting protocols. For example, NRCS can simplify budget modifications by increasing minimum percentage change to the total budget and request processes, and can loosen restrictions on how program participant payments are budgeted. The administrative complexities are disproportionately burdensome for underserved, beginning, and under-resourced producers or partner organizations.

RFI Question 5: How can NRCS expand capacity among partners to assist in providing outreach and technical assistance to support the implementation of IRA funding?

We encourage NRCS to use IRA funds to dramatically increase funding for the racial equity cooperative agreements (funded out of NRCS's Conservation Technical Assistance budget line) and ensure that more BIPOC-led organizations are prioritized for this funding. MRN can speak to this as a recipient of these funds for our "Equipping Next Gen Ag" mentorship program that we run with Green Lands Blue Waters.¹⁵ Relatedly, many "mentorship" type programs were funded through the FY 2022 Racial Equity Cooperative Agreements. What kinds of "bridge" programs could be encouraged in future cooperative agreements that support BIPOC young professionals to find careers and/or for state NRCS offices to be equipped to sustain a workforce that includes more staff of color? It will take more than mentorship to ensure conservation and ag work environments are places that welcome and benefit from BIPOC leaders. This is also a pipeline that would increase technical assistance capacity for NRCS, but right now, the direct link from mentorship to actual job placement is missing.

In addition to technical skills and program knowledge, there remains a need to improve the outreach skills of NRCS field staff so that county level offices are better prepared to build trust in BIPOC communities they seek to serve. NRCS should enter into cooperative agreements with BIPOC led and serving organizations that work directly with BIPOC farmers so those organizations can train NRCS field staff on how to improve their outreach efforts. Examples of this exist in the awards made via NRCS Racial Equity Cooperative Agreements, and we recommend that similar agreements continue to be made with IRA funding.

¹⁴ Black Indigenous, and other People of Color.

¹⁵ Learn more about our "Equipping Next Gen Ag Leaders" Program here <https://greenlandsbluewater.org/next-gen-ag-leaders/>

For the sake of our Mississippi River basin and our communities that depend on it, we urge NRCS to make the most of the historic funding opportunity presented by IRA. Thank you for considering our comments.

Sincerely,

A handwritten signature in black ink that reads "Maisah Khan". The signature is written in a cursive, flowing style.

Maisah Khan
Policy Director
Mississippi River Network
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