



Case Studies of Performance-based RCPP Projects



ENVIRONMENTAL POLICY
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ABOUT

The Environmental Policy Innovation Center (EPIC) is a national nonprofit with the mission of building policies that deliver spectacular improvement in the speed and scale of conservation. We focus on a narrow set of strategies:

- Improving policies that allow private sector funding or stewardship to expand or supplant public or charitable conservation work
- Transforming government policies to focus on what matters—outcomes
- Eliminating the organizational barriers that prevent public agencies from adapting to 21st century solutions

We believe that innovation and speed are central to broadening efforts to conserve wildlife, to restore special natural places, and to deliver to people and nature with the clean water they need to thrive. To achieve those goals, conservation programs must evolve to accommodate our modern understanding of human behavior and incentives and the challenges posed by humanity's expanding footprint. We embrace experimentation with novel ideas in conservation policy, to learn quickly from mistakes and iteratively design effective approaches to be even more successful.

EPIC's agriculture program uses cutting-edge technologies and novel policy solutions to 1) develop new sources of demand for conservation outcomes, 2) ensure conservation dollars are spent as cost-effectively and quickly as possible, and 3) incentivize the creation of new solutions to the most pressing resource concerns.

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EXECUTIVE SUMMARY

The Regional Conservation Partnership Program (RCPP) is the only US Department of Agriculture (USDA) program explicitly authorized to pay for environmental outcomes, through what it calls “performance-based payments”. Since the creation of alternative funding arrangements (AFAs) within RCPP as part of the 2018 Farm Bill, a diverse set of projects have been successfully executed to pay for over \$32 million worth of outcomes.

Between 2020 and 2022, NRCS awarded 33 AFA projects, at least seven of which used performance-based payments. Two similar projects are described together. The RCPP projects paying for environmental outcomes are:

- [Vermont’s Pay-for-Phosphorus Program](#) compensates farmers for the pounds of phosphorus prevented from leaving their fields. The project has enrolled 28,000 acres, promoting practices like reduced tillage and cover crops.
- [Soil and Water Outcomes Fund](#) operates two projects across five states, paying farmers for nitrogen runoff reductions and using carbon credits sold to private buyers as match.
- In partnership with the Maryland Department of the Environment, EPIC’s [Clean Water Commerce](#) project pays for nitrogen reductions achieved through various conservation practices by mirroring the state’s groundbreaking Clean Water Commerce program.
- The [Saginaw Watershed ASSET Program](#) pays sugar beet farmers in Michigan for the reductions in sediment runoff generated by strip tillage.
- In Texas, the Pecan Bayou SWCD’s [Drought Resilience Incentive Program](#) pays ranchers for water savings generated by the removal of invasive woody species and reseeded of native grasses.
- [Financing Climate Smart Ag in Ohio’s Miami River Valley](#) pays farmers based on soil carbon content, rewarding early adopters and incentivizing improvements.

These projects highlight the diversity in outcome quantification, baseline setting, and cost-effectiveness benchmarking. While many are operating effectively, there are still significant issues. Common challenges included unfamiliarity by Natural Resources Conservation Service (NRCS) staff with performance-based payments and compliance requirements that complicated project execution, such as the [National Environmental Policy Act](#) and the [National Historic Preservation Act](#).

RCPP and its performance-based payments could herald a transformative shift in USDA’s approach to conservation funding. To support more of these innovative projects and improve execution, the NRCS can clarify performance-based payment guidelines in funding notices and provide priority points for performance-based projects. They should also impress upon staff that performance-based payment projects are to be encouraged, such as by allowing cost-effectiveness to be benchmarked against established environmental markets (not just cost-share rates). To allow structural practices to generate outcomes, NRCS should publicize its allowance of flexibility in payment structures and project timelines. Congress should define performance-based payments and conservation benefits in statute, fund quantification models, and remove the cap on AFAs.

Most importantly, potential applicants can do much more to increase the prevalence of performance-based projects by developing performance-based projects and applying for the record funding available. Current awardees can help new performance-based awardees and promote the details of their successful projects.

RCPP Project	Location	Awardee	Outcome	Model	Funding
Vermont Pay-for-Phosphorus Program	Vermont	Vermont Agency of Agriculture, Food, and Markets	Phosphorus	FarmPREP for APEX	\$7M
Soil and Water Outcomes Fund	Priority watersheds within Iowa, Illinois, Indiana, Missouri, and Ohio	Reharvest Partners	Nitrogen and phosphorus	Nutrient Tracking Tool	\$15.8M
Maryland Clean Water Commerce Outcomes	Chesapeake Bay watershed in Maryland	Environmental Policy Innovation Center	Nitrogen	Chesapeake Assessment Scenario Tool	\$2.7M
Saginaw Watershed ASSET Program	Saginaw Bay watershed in Michigan	The Nature Conservancy	Sediment	SEDMOD and Revised Universal Soil Loss Equation	\$1.9M
Financing Climate Smart Agriculture in Ohio's Miami Valley	Miami, Montgomery, Champaign, Clark, Greene, and Clinton counties in Ohio	one.two.five Benefit Corp.	Soil organic carbon	Direct measurement	\$2.9M
Drought Resilience Incentive Program	Lake Pallopinto, Lake Brownwood, and Lake OH Ivie watersheds in Brown County, Texas	Pecan Bayou Soil and Water Conservation District	Consumptive water use	Soil & Water Assessment Tool and Ecological Dynamics Simulation	\$1.8M

INTRODUCTION

The Farm Bill, Congress' five-year omnibus legislation to set agricultural and food assistance policy, has long been described as a policy fight that falls not so much along party lines but between different regions: cotton-growing versus wheat-growing regions in the Commodity title, Great Lakes versus the Chesapeake Bay in the Conservation title, and so on. In the 2014 Farm Bill, Congress prudently took steps to reduce the contest over dollars among regional and other factions.

One of those steps was the creation of the Regional Conservation Partnership Program (RCPP). This program consolidated previously competing regional schemes into a unified initiative aimed at fostering collaborations between conservation organizations and farmers. Such partnerships might attract farmer participation in ways that the Natural Resources Conservation Service (NRCS) alone could not—and in the process, relieve some understaffed NRCS offices.

When RCPP was created, it functioned less as its own program and more as a way to allocate chunks of funding from “covered” conservation programs (EQIP, CSP ACEP, etc.) for specific geographic areas based on applications by partners—including soil conservation districts, nonprofits, or state departments of agriculture. The idea was that these organizations would receive funding to provide technical assistance to recruit farmers and help them plan conservation measures. The farmers would then sign contracts with NRCS to be compensated (what NRCS calls “financial assistance”) for implementing conservation projects using existing funding mechanisms.

The 2018 Farm Bill, however, separated RCPP from the covered programs, transforming it into a standalone program—but one that was still supposed to carry out the functions of the covered programs. This is a subtle but important distinction. For farmers, the change involved signing an RCPP contract instead of an EQIP contract, but little else was different. Also noteworthy in the 2018 Farm Bill was the addition of a new subprogram called “alternative funding arrangements” (AFAs). This subprogram allows both the financial assistance funds (which eventually go to farmers) and the technical assistance funds (which were always spent by the partner on outreach and design) to flow through the partner. These arrangements were meant to expedite funds to farmers, spur inventive projects, and simplify farmer contracts. Unfortunately, this initiative was capped at just 15 projects per year.

The AFA statute was specifically written to encourage projects that include “the provision of performance-based payments to producers and support an environmental market”. While these terms weren't defined within the statute, applicants were eager to work with NRCS to propose and execute projects that could deliver on this premise. For the purpose of this report, performance-based projects are loosely defined as any that provides financial assistance to producers based on a dollar figure per provision of a unit of environmental outcomes, such as \$100 per ton of carbon sequestered or \$30 per pound of nitrogen prevented from entering waterways.

Paying for conservation outcomes instead of practices can be financially beneficial because it creates an equitable way—through proposal scoring—to target the most cost-effective projects. And by creating a single unit (e.g., dollar per pound of nitrogen) that can be compared against different proposals, it becomes clearer to decision-makers which projects should be funded. Additionally, when operating correctly, that structure reduces administrative burdens and allows farmers the flexibility to create new, better ways of generating those outcomes. Outcomes-based programs can circumvent technical service bottlenecks and free farmers from paperwork that disincentives applications.

Since the first RCPP solicitation under the rules of the 2018 Farm Bill was released in 2020, at least seven projects using performance-based payments have completed contracting and seven more have received awards. This report gives an overview of the seven confirmed awardees, including two very similar awards grouped together in a single case study. The aim of the analysis below is to describe the successes, stumbling blocks, and occasional failures of RCPP projects seeking to pay for environmental outcomes. Hopefully, the insights and recommendations distilled from these case studies will lead to more applications for performance-based projects and to changes in policy and procedure that make such projects more common and easier to execute.

The [Vermont Agency for Agriculture, Food, and Markets's Pay-for-Phosphorus program](#) pays farmers for pounds of phosphorus prevented from leaving their fields and entering waterways. These reductions are calculated relative to the assumed management practices in the [Lake Champlain Basin Total Maximum Daily Load](#), and farms must first meet a 40% phosphorus reduction before further reductions can be eligible for a \$100 per pound payment (up to \$50,000 per year).

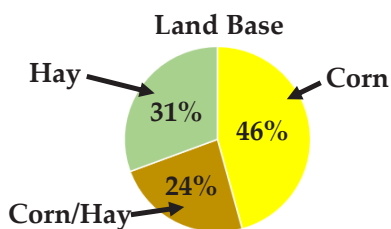
In addition to that main payment per pound of phosphorus, this seven-million-dollar project has two other ways farmers can be compensated. First-time enrollees receive a \$15 per acre (up to \$4000) payment for them to enter their management data; this allows staff to determine eligibility. In addition, farms that show they have reduced their phosphorus losses to less than 1 lb per acre or less than 0.5 lb per acre across their entire farm can receive \$3 or \$8 respectively per acre.

The starting conditions and reductions are calculated using the [FarmPREP](#) interface, which is built on the [APEX](#) model. These results require an up-to-date [nutrient management plan](#), which includes soil and manure testing. To smooth season-to-season variability, the phosphorus results are calculated as a 30-year average of the impact of practices but are paid out annually. The \$100 per pound price was agreed upon after comparing it to the cost of generating reductions from other sectors, such as wastewater treatment.

In each of the two years since completing USDA contracting, Vermont has enrolled 28,000 unique acres in the program. The most common practices are reduced tillage, cover crops, grazing management, and reduced nutrient application. FarmPrep can model the benefits of grassed waterways, but the project has not yet paid for outcomes generated by them or any other structural practices. Grassed waterways are not a very common practice in Vermont and program staff are concerned about the capacity needed to complete National Historic Preservation Act paperwork required for ground disturbing practices. In addition, it's unclear when benefits lasting longer than the length of the RCPP award would be paid out.

Farm #1

This dairy farm manages 430 acres with fields primarily located on poorly drained silt loams in corn, hay, and corn/hay rotations.



Field Management

- Nutrient Management Planning
- Extended crop rotations
- No-till on annual crops
- Cover crops
- Surface applied manure

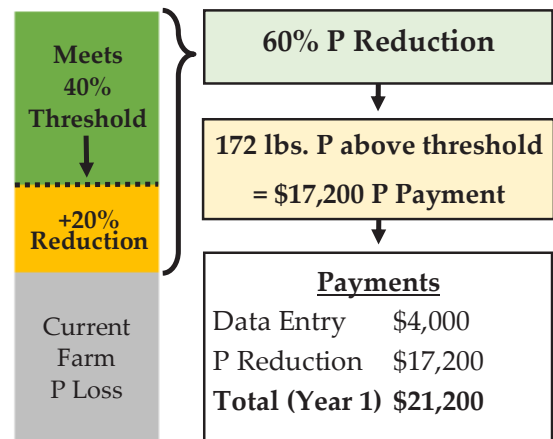


Image Credit: Vermont Agency for Agriculture, Food, and Markets

The Soil and Water Outcomes Fund has pioneered the use of performance-based payments perhaps more than any other entity and has used a variety of innovative financial mechanisms to do so. This case study actually includes two distinct RCPP AFA projects they have managed across five states: Indiana, Illinois, Iowa, Ohio, and Missouri. Both projects, totaling \$15.8 million, pay farmers for the reductions in nitrogen and phosphorus runoff generated by in-field practices, as calculated by the [Nutrient Tracking Tool](#).

Soil and Water Outcomes Fund was founded in 2020 by subsidiaries of [Quantified Ventures](#) and the [Iowa Soybean Association](#). Very cleverly, the organization was originally capitalized with a \$7.5 million [investment \(not loan\)](#) from the [Iowa State Revolving Fund](#) and [Iowa Finance Authority](#). The outcomes fund's purpose is to make incentive payments to farmers and then sell the ecosystem services generated to public and private buyers. This means that while USDA is paying for nitrogen and phosphorus reductions, a private company such as [Cargill](#) may be paying for the carbon sequestration generated by the same practices. RCPP is just one source of funding that makes these payments possible.

The project pays for nitrogen and phosphorus reductions generated from in-field practices, such as cover crops; no, strip, and reduced tillage; and conservation cover. Farms get recruited via field staff and partnership with commodity groups and others. They are paid 50% at sign-up and 50% at verification. The Outcomes Fund verifies 100% of enrolled fields through field visits, and NRCS verifies a subset, with exact verification requirements varying by state.

In addition to running a before and after simulation using the Nutrient Tracking Tool to calculate farmer payments from RCPP, they also use [COMET-Farm](#) to calculate carbon sequestration and use this to scale payments from matching corporate dollars. The nutrient reduction payments are benchmarked both against the EQIP cost-share rates for the practices and against the cost of upgrading wastewater treatment facilities to achieve similar reductions.

Across the two projects, approximately 1500 fields per year have been enrolled. This scale of data can be challenging to manage for verification of practices, calculation of payment, and especially compliance with USDA requirements like the National Environmental Policy Act and [Swampbuster and Sodbuster](#). To keep track of all their projects and payments, the Outcomes Fund has developed an internal data platform they describe as "crucial" to the implementation of the RCPP projects.

Jensen Marsh, Madison County, Iowa



Maryland [upgraded](#) its Clean Water Commerce program to pay farmers directly for the pounds of nitrogen that conservation practices prevent from running into the Chesapeake Bay. The [Environmental Policy Innovation Center](#) (EPIC) partnered with the [Maryland Department of Environment](#) to submit an RCPP AFA that would as closely as possible mirror the agency's Clean Water Commerce program—with state funds serving as match.

The Clean Water Commerce program was originally established in 2017 to pay for the most cost-effective upgrades to wastewater treatment plants, but after seeing that green infrastructure could be more cost-effective, legislators expanded the eligibility of projects (while reserving at least 35% for agriculture) and doubled the funding to \$20 million per year. The new Clean Water Commerce program allows applicants to submit a project description, cost, and the expected nitrogen reductions as modeled by the [Chesapeake Assessment Scenario Tool](#). The Department then calculates a cost per pound of nitrogen and selects only the projects that provide the best value.

After being notified of the RCPP award in September 2021, EPIC worked with Maryland Department of the Environment to develop scoring criteria and a solicitation for state or federal funds that was released in June 2022. Projects were selected in the spring of 2023 ranked (primarily) on the cost per pound of nitrogen reduced and also climate change mitigation and adaptation co-benefits, phosphorus and sediment load reductions, and the inclusion of historically underserved producers. The Department of Environment, EPIC, and the [Maryland Department of Agriculture](#) (which had some funding available for drainage water management projects) then determined which projects were most appropriate for each funding source.

During this time, RCPP contract negotiations between EPIC and NRCS were also occurring. These negotiations were slowed by turnover of the state coordinator and unfamiliarity with AFAs, but national and state staff were eventually able to find ways to complete an agreement that closely follows the Clean Water Commerce program and allows for reimbursement on a per-pound basis. One of the particular innovations in this project is not defining the nitrogen price in the RCPP agreement but allowing it to be set by the market with provisions in the agreement to benchmark that price.

After the first round of project selections, EPIC is now funding three projects that generate nitrogen reductions from oyster aquaculture. The reductions are calculated based on the size and [ploidy](#) of oysters when they are harvested from farms in or near the Chesapeake Bay. Those harvest records are already provided to the state [Department of Natural Resources](#), which has agreed to share them for verification. The price per pound of nitrogen varies from \$30 to \$52.

The next round of projects is currently being evaluated and will hopefully obligate the remaining approximately two million dollars of financial assistance funds. EPIC hopes to provide the first performance-based payments for structural practices next year.

Swallow Falls, Maryland



Standard advice for RCPP applicants is that the most successful projects tend to be ones that are already operational and just looking to RCPP to continue or scale up. The Saginaw Bay Watershed ASSET Program was started almost a decade ago to pay for sediment reductions generated by strip tillage on sugar beet farms. It was originally funded by the [Great Lakes Restoration Initiative](#) and then briefly by [Kellogg's](#), a private company. But after receiving an RCPP award in 2022, the existing outcomes-based program has struggled to execute performance-based payments due to requirements added by state RCPP staff.

The limiting factor to water quality improvements in the Saginaw Bay is the amount of phosphorus in waterways. However, due to tile drainage, it can be difficult to distinguish between runoff of dissolved reactive phosphorus and inorganic phosphorus. Thus, [The Nature Conservancy](#) chose to use sediment reductions as a more easily measurable proxy. Nature Conservancy staff use the [Great Lakes Watershed Management System](#) to combine modeling from the [Revised Universal Soil Loss Equation](#) (which calculates soil lost from a field) and the [SEDMOD](#) model (which calculates how much of that lost soil actually reaches waterways). After a few years of trial and error (under Great Lakes Restoration Initiative funding), they settled on \$225 per ton of sediment prevented from entering waterways. This means that the payment per acre of strip tillage could vary from \$4 to \$100.

Since not all farmers continued to strip till after payments ended in pre-RCPP program years, The Nature Conservancy wanted to increase the permanence of their practices by paying for part of the purchase of expensive strip till equipment. They included this in their proposal and lined up an equipment manufacturer to offer discounts and unlimited technical assistance, which both counted towards the partner contribution. But during contracting, they were informed that RCPP funds cannot pay for equipment, which eliminated that partner contribution and necessitated a reduction in the RCPP award.

But their biggest issue is being told by NRCS that under no circumstances could their projects exceed the cost-share rate for strip tillage under EQIP of \$17 per acre of strip tillage. While other states have allowed performance-based payments to be benchmarked against established environmental markets, this was not provided as an option under this project. By capping payment rates at \$17 per acre, they will not be able enroll farmers whose strip tillage makes the biggest impact on water quality. Since most farmers offered below about \$10 an acre are not interested, the project will have such small variation in payments between producers that it hardly qualifies as performance-based.

The project has completed its contracting. They are currently trying to identify a technical service provider within NRCS or a Soil and Water Conservation District with the job approval authority to verify strip tillage has occurred—although their preference would be for NRCS to delegate that authority to the project manager. Once that detail is resolved, The Nature Conservancy will work with its existing network of farmers to recruit participants.

Sugar beet harvest



The Drought Resilience Incentive Program pays ranchers for the quantified reduction in water use generated by brush management. Invasive honey mesquite and ashe juniper can pull hundreds of gallons of water per plant out of the soil per day so the impact of their removal on municipal water sources can be calculated using the [Soil & Water Assessment Tool](#) and [Ecological Dynamics Simulation](#) models.

Texas's brush control programs have ebbed and flowed. A statewide brush control program ended in the early 2010s and then was reconstituted only from 2011-2017 as the Water Supply Enhancement Program. The Pecan Bayou Soil and Water Conservation District was looking for other funding sources for this activity and turned to RCPP. Initially, they proposed the performance-based payments just to increase their chances of being awarded.

“There are generally just benefits to pay for performance, not really any downsides to doing it over cost-share.” -Cy Tongate, Project Coordinator

The program pays farmers \$170 per acre-foot in the Lake Brownwood watershed, which is where all the work so far has occurred but could pay \$700 in the OH Ivie watershed, and \$118 in the Pallo Pinto watershed. All of these average out to about \$348 per acre of brush management—although rates can be higher for historically underserved producers—which is equivalent to the cost-share rate for brush management plus \$48 for reseeding. The goal is to enhance water yield by reverting the land to its prairie grassland state while reducing wildfire risks. Because the project is using modeling to target the top 5% of properties on which brush management is most effective, the payment rates per acre don't vary much between properties.

Recruiting producers has been straightforward, thanks to their established conservation district network. Participants are typically those already interested in brush control or those who missed out on other NRCS funding. Dozers and excavators are used to mechanically remove invasives, and native grasses are seeded. Verification and compliance processes mirror those used for EQIP contracts, involving logged hours, equipment logs, and on-site inspections. For the conservation district to receive USDA reimbursement they submit contracts with producers, maps, and photos.

Overall, Pecan Bayou reported fewer challenges than other awardees, which they attribute to experienced staff in their state NRCS office. They did have some trouble with defining the unit of environmental outcome because NRCS insisted that it be defined in gallons (the model's output) even though acre-feet is a measure more commonly used by ranchers.

Despite any challenges, they have fully completed contracting and have obligated 830 acres-worth of payments, with 380 acres treated and receiving payment. Over the course of the project, they plan to treat about 4,000 acres. Beyond that, they are interested in developing a project using brush management to produce biodiversity credits.

Lake Brownwood, Texas



FINANCING CLIMATE SMART AG IN THE MIAMI RIVER VALLEY

Unlike some other projects, the Miami River Valley project pays farmers for the amount of carbon in their soil relative to its inherent capacity for organic carbon storage, not how it changes. Their system not only considers the amount of carbon built up since the start of the evaluation period (the most used measure of additionality) but also historical performance of carbon capture. Measurable soil organic carbon changes following adoption of conservation practices typically take longer than a five-year RCPP window and higher rates of carbon increase occur in farms with the most degraded soil rather than those that have been responsibly farming for decades.

Soils across even a small geography can have significantly different capacities for storing carbon. To address this fairly, the project pays farms based on how their soil organic carbon compares to other farms nearby with similar soil carbon storage capacity, land use, and geography. The combined percentage of clay and silt in soil is used as a proxy for different storage capacities across fields. For example, in the Indiana and Ohio Till Plain Major Land Resource Area in Ohio, a farm with 800 grams of silt and clay per kilogram of soil (a relatively high storage capacity) that has between 59 and 63 metric tons of carbon per hectare would receive \$10,147 in year 1 and any subsequent years they continue to be in that range. If by year 4, the farm has increased its soil organic carbon to between 63.1 and 70.8 metric tons per hectare, it would be eligible for a payment of approximately \$15,221 (in 2024 dollars). This unique structure rewards early adopters while still incentivizing improvements.

The [one.two.five Benefit Corporation](#), started by two Ohio-based environmental professionals in 2021, received its \$2.9 million RCPP award in 2022 but has not yet been able to deploy conservation dollars to farmers. They have completed contracting and are about to begin environmental evaluations. Financial assistance will cover the cost of the soil testing and pay farmers this performance-based incentive to allow the testing. The project also involves technical assistance to help farmers apply for and receive other funding for 60 conservation practices that can increase soil carbon. These practices are mostly in-field and do not include any practices requiring construction - this is due to the same National Historic Preservation Act requirements that prevented Vermont from using them.

The project places special emphasis on working with historically underserved producers. And one of the goals is to understand the behavioral economics of farmer adoption of climate smart practices. The project leads are experts in soil science and sociology, so they understand both how to produce environmental outcomes and the nuance required to get farmers to do it.

Because this project is unique even for an AFA, the contracting took an especially long time. Some farms that were recruited had to ultimately be rejected because they participated in the Conservation Stewardship Program, a little-known prohibition. But soon soil testing will begin, and hopefully farms will improve their soil carbon stores over time.

Ohio Farmland



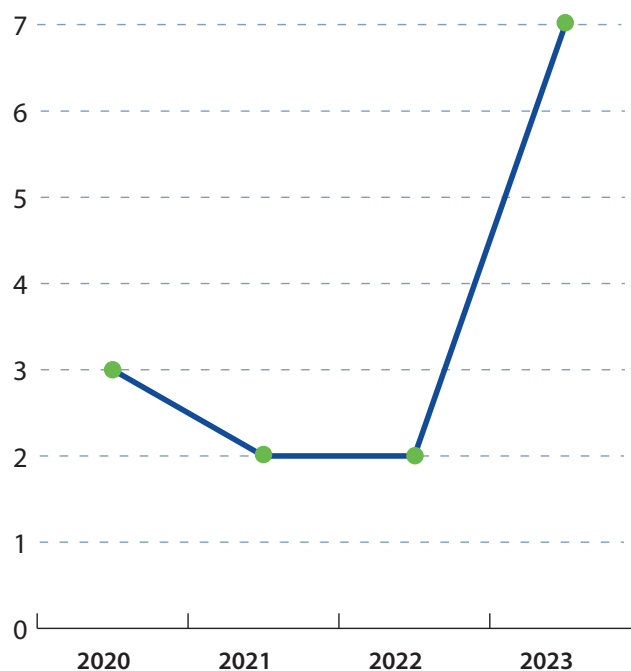
2023 PROJECTS

A number of the projects awarded in the 2023 funding round are potentially planning to use performance-based payments. Although these projects are not far enough along in contracting to be included as full case studies, it's worth noting the sheer volume that were awarded. Previously, 2020 held the record for the highest number of projects using performance-based payments: three. It's not especially surprising that all of these projects are focused on climate, since that makes them eligible for Inflation Reduction Act funding, which does not cap the number of AFAs. What is somewhat surprising is the overwhelming focus on dairies. But RCPP's partner-led nature can easily result in a promising concept being repeated across the landscape.

Awardee	Project Title	Lead State
Newtrient LLC	Reducing Greenhouse Gas Emissions on Idaho Dairy Farms	ID
Newtrient LLC	Methane Avoidance on Dairy Farms in Michigan Milk Producers Association Region	MI
Agropur	Agropur Dairy Producers Best Management Practices Project	SD
Maryland Department of Natural Resources	Nature's Climate Solution: Planting Forests and Building Resiliency in Maryland	MD
Newtrient LLC	Accelerating Methane Emission Reductions in Wisconsin, Michigan, and Indiana Dairy Producers	WI
AGSPIRE INC.	Absolute Enteric Methane Reductions in Washington State Dairies: A New Frontier on the Journey to Net Zero	WA
California Dairies, Inc.	Absolute Enteric Methane Reductions in California Dairies; a New Frontier in the Journey to Net Zero	CA

See all 2023 RCPP awardees [here](#).

PERFORMANCE-BASED PROJECTS AWARDED BY YEAR



ANALYSIS

Between 2020 and 2022, NRCS awarded 33 AFA projects, almost a quarter of which used performance-based payments. The prevalence and variety were both surprising in compiling this publication. Unfortunately, a common feature across all projects was the existence of issues that made contracting take longer and in some cases ultimately hamstrung the generation of environmental outcomes.

PROJECT VARIETY

Projects largely focus on payments for outcomes that already have somewhat established markets. Water quality trading to meet permit obligations, for instance, has been practiced in states as ecologically and politically diverse as Virginia and Iowa; so, it makes sense that five of the seven projects are paying for water quality improvements. Still, it's somewhat surprising that there have not been more climate-focused projects, although many were awarded in 2023.

However, even among the projects paying for water quality outcomes, there exists a large variety in how outcomes are quantified, how baselines are set, and what methods are used to benchmark their cost-effectiveness. All projects (except the two Soil and Water Outcomes Fund projects) use unique quantification models, although many are based on the same underlying science or modeling that's just been calibrated to a particular geography. While the Clean Water Commerce project has no baseline requirement, Vermont will only pay for reductions above a 40% threshold.

CONTRACTING

An important part of developing a contract between an awardee and NRCS is for a project to demonstrate that the cost per outcome is reasonable. This can be done either by benchmarking the price the AFA project pays against the standard cost-share rate for the practice (e.g., the DRIP project) or against an established price for the same outcome through another activity, such as the cost a municipality would have to pay to upgrade a wastewater treatment plant such that it prevents an equivalent additional amount of phosphorus from entering a waterway. It seems helpful to build in this flexibility so projects without an established market are still eligible. Insisting on benchmarking against the cost-share rate can doom the performance-based aspect of a project, as happened in the Saginaw watershed.

While most projects were planned from the beginning to focus on management practices, the few that were interested in paying for outcomes from structural practices—grassed waterways or drainage water management systems, for example—described another contracting hurdle. NRCS norms currently only allow projects to pay for outcomes generated by structural practices in equal annual payments over the useful life of the practice. Since most structural practices generate benefits for more than the typically-five-year lifespan of an RCPP contract, those practices would only receive partial compensation; this scenario is at odds with how established environmental markets like wetland mitigation banking operate. The Maryland Clean Water Commerce program was [recently changed](#) by the legislature to reflect that flat payments only drive up buyer costs without meaningfully decreasing risk.

None of the projects managed to complete their contracts with USDA without encountering some issue during the process, although some projects had more than others. The most commonly-cited slowdown was just a lack of familiarity by NRCS staff with performance-based payments or even RCPP broadly, which led to surprise requirements too far into project development and repeated back-and-forth revisions to agreements. This is understandable since there have been relatively few performance-based projects and no state has yet served as the lead on more than one.

COMPLIANCE

Another common complaint was that burdensome compliance requirements can spoil the spirit of paying for outcomes and create significant additional administrative burden. Too much focus on how and by whom the outcomes are generated can prevent these projects from providing the large-scale results RCPP is meant for. Many but not all projects received a waiver from having to verify producers' adjusted gross income, but all had to ensure producers are in compliance with Swampbuster and Sodbuster.

In particular, satisfying the National Environmental Policy Act currently requires project leads to complete a form called [CPA-52](#) for each farm. The sheer number of farms and the need to get a digital shape file from the [Farm Service Agency](#) for each to complete these forms can take significant resources from partners. Also, the programmatic environmental assessment for RCPP—which allows each project to just complete the CPA-52, instead of a whole

environmental assessment—requires that it be tied to one of USDA’s practice codes, limiting innovation in the generation of the outcomes.

A similar requirement, the National Historic Preservation Act is only triggered when there is significant disturbance of soil that could reveal archaeologically relevant artifacts. In practice, this means that more structural practices across NRCS programs have an additional layer of paperwork. Multiple projects specifically mentioned that this—in addition to the timing of payments—is why they are not paying for outcomes generated by structural practices.

CONCLUSION

While there is definitely more NRCS and Congress can do to refine the provision of performance-based payments, the case studies above demonstrate that the **US Department of Agriculture is already buying environmental outcomes**, a sea change from a century of practice-based payments. Building on that momentum, there exist significant opportunities to increase the number and ease of performance-based payment projects under RCPP AFAs. The following recommendations detail steps that leaders at all levels can take in the near-term toward that goal.

ADMINISTRATION

NRCS can publicly champion the concept of paying for outcomes—for example, providing more information about performance-based payments in its notice of funding opportunity, such as giving examples of ways to quantify outcomes or benchmark prices. The notice of funding opportunity could also bring back awarding priority points for projects that include innovation or even **provide priority points specifically for projects that make performance-based payments**. Funding notices might also state explicitly that projects can last longer than five years with Secretarial approval, since that timeline is necessary for most structural practices and given that almost no applicants appear to be aware that this is an option.

NRCS is already doing more to train state RCPP staff. **To bolster those efforts, staff could be specifically instructed on these case studies** and their findings around the pitfalls that make performance-based payments more difficult (e.g., providing a benchmark for cost-effectiveness). It would be especially helpful to **emphasize that performance-based payments can exceed cost-share rates as long as they are benchmarked to an established environmental market** (to demonstrate that NRCS is not overpaying).

NRCS has previously stated that performance-based payments can only be “flat,” meaning equal amounts sustained over multiple years. While reasonable for annual management practices, EPIC has [written about](#) why this is inadvisable for structural practices. Flat payments are one reason why no performance-based payments have been made for structural projects. As long as the project’s total useful life is within the lifespan of the RCPP project, the payments should be tied to reductions in risks of not achieving outcomes, with 40-60% paid at construction and 5-10% held until the last year of the practice’s useful life.

CONGRESS

Congress could—and likely will—**do more in the next Farm Bill to ensure performance-based payments are successful within RCPP**. These efforts should include both substantive changes to make these projects work better, as well as changes to signal to NRCS that performance-based payments should be a priority for the program.

For example, **“performance-based payments” should be defined in statute**, along with “conservation benefit,” akin to “environmental outcome” as the unit of performance being paid for. This would provide greater clarity around exactly how payments should work. Secondly, **more funding for quantification models should be established**—which would allow performance-based payments to be made based on the most reliable and accessible science. Paying to use models can represent a significant expense for some projects. **Newly developed quantification models should also be dynamic**, incorporating real-time measurements of inexpensive-to-monitor outputs that are highly correlated with the ultimate outcome (such as remote sensing of stream turbidity to correlate with phosphorus loss).

The types of projects eligible for **AFAs should also be expanded to include outcome generation options like equipment and software**. If the goal is to pay for outcomes, Congress should ensure that there are not artificial limits on what can generate those outcomes.

Lastly, since the AFAs have proven successful and in high demand, it’s appropriate for the next Farm Bill to **remove the 15 project cap on AFAs**, as was done for funds provided through the Inflation Reduction Act. The cap for what was previously considered something of a pilot program is now just counterproductively limiting the generation of outcomes at scale.

APPLICANTS

One of the most impactful advances would just be for more performance-based projects to apply to the program. Generating a critical mass of applications will smooth out many of the wrinkles in the process as NRCS gets more familiar and comfortable with making performance-based payments. Doing so, however, requires a concerted effort to find and recruit potential applicants, which should be focused on finding sources of matching funds. Thus, counties, states, and regions that are already buying outcomes constitute ideal candidates.

As noted throughout this report, a big step forward would be to **have a project apply to make performance-based payments for structural practices**. That likely entails the original application stating that the project would run for at least 10 years and negotiating the contracts between USDA and the project lead to reflect that timeline. It would require a Secretarial determination, but NRCS staff have expressed a willingness to try this. An applicant would also need the resources to complete the National Historic Preservation Act requirements that are required for most structural practices.

The fastest emerging environmental market in the US and (globally) is for biodiversity. England has set a policy of biodiversity net gain that led to the creation of a market for biodiversity credits. In the United States, forms of biodiversity-related markets have existed for decades to satisfy Clean Water Act and Endangered Species Act requirements in the form of wetland mitigation and species banking, respectively, but the voluntary market (i.e., outside of legislated regulatory structures) is only just beginning in earnest with a few projects in development. **Applicants could seek RCPP awards to develop biodiversity credits**, which NRCS would purchase. Strong standards on how these credits are generated could help provide assurance to the private market for investing in biodiversity credits moving forward.

Performance-based projects are especially well-suited to be funded by the SUSTAINS Act, which allows private contributions to fund conservation projects in exchange for the “environmental service benefits”. This would require an RCPP partner to find both the regular match as well as a funder for the portion that would normally come from USDA. The SUSTAINS Act has not been fully implemented yet, so there are still plenty of unanswered questions, but potential applicants could start looking for buyers of outcomes to demonstrate their interest in such a project.

Finally, **more can still be done to share and evaluate the projects that have successfully executed performance-based payments**. A dedicated podcast, webinar series, or other outreach vehicle could allow projects to be described in greater depth by their leaders, while growing awareness among potential applicants (and other stakeholders). Another means for project evaluation and continued learning might be informally pairing previous awardees with new awardees, to mentor them. The USDA Office of Environmental Markets, NRCS’s Conservation Effects Assessment Project, or a third-party could evaluate the cost-effectiveness of these projects compared to generating outcomes by cost-share.

These case studies should provide proponents of performance-based payments with optimism that USDA really can buy environmental outcomes while acknowledging that there are still improvements to be made for them to become more mainstream. EPIC is eager to elaborate on any of these findings and recommendations.