

Nutrient Funding Discussion Group: Action Plan to Secure Scalable Nonpoint Project Investment

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I. Challenge & Solution Overview

- The Challenge:** Most of our nation’s rivers, streams and lakes are in fair to poor condition, largely attributable to nutrient contamination, which is now the most widespread stressor in U.S. water bodies.¹ Nonpoint sources (NPS) are the dominant source of nitrogen for streams and rivers in poor condition.² Even with the effective regulation of point sources under the Clean Water Act (CWA) and a multi-trillion dollar investment in efforts to improve water quality,³ additional tools and approaches are needed to properly scale and speed up effective watershed-level solutions.
- The Solution:** With over two decades’ experience deploying water quality trading (WQT) and conservation finance solutions at the *pilot scale* (see Appendix A), we now have the knowledge and tools necessary to fund and implement market- and outcomes-based solutions at the *full watershed scale*. Because point source (PS) funding is often unavailable or insufficient to support watershed-scale work, the missing piece is finding a way to combine and concentrate currently fragmented federal, state, private, and PS (where available) funding into a focused regional investment effort, and then rapidly delivering that coordinated funding to a portfolio of high-impact, cost-effective NPS projects to achieve watershed⁴ goals. The “watershed outcomes funding solution” framework and suggested enabling actions in this document help overcome the jurisdictional, technical, funding, timing, capacity, and transaction cost impediments that currently stifle most watershed funding and implementation efforts. This document articulates a suggested framework for structuring, funding,

¹ U.S. EPA, *National Rivers and Streams Assessment 2018-19: The Third Collaborative Survey*, Interactive NRSA Dashboard (2022),

<https://riverstreamassessment.epa.gov/dashboard/?&view=risk&studypop=rs&subpop=national&response=benthic+macroinvertebrates&label=pe> Accessed on 9/13/2023. U.S. EPA, *National Lakes Assessment 2017: The Third Collaborative Survey*, Interactive NLA Dashboard (2022),

<https://riverstreamassessment.epa.gov/dashboard/?&view=indicator&studypop=rs&subpop=national&label=pe&condition=poor&diff=2v3>.

² Robert Sabo, et al., *Decadal Shift in Nitrogen Inputs and Fluxes Across the Contiguous United States: 2002–2012*, 124 JGR Biogeosciences 10, 3104-3124 (2019). Jiajia Lin, et al. (US EPA Office of Research and Development), *Context is Everything: Interacting Inputs and Landscape Characteristics Control Stream Nitrogen*, and *Comparing Drivers of Spatial Variability in U.S. Lake and Stream Phosphorus Concentrations*. *Environ. Sci. Technol.* 2021, 55, 12, 7890–7899.

³ “Since 1960, US public and private actors have spent over \$1.9 trillion (\$2014) to abate surface water pollution.” D.A. Keiser, et al., *The Low but Uncertain Measured Benefits of US Water Quality Policy*, 116 PROC. NAT’L ACAD. OF SCIENCES 5262 (2019).

⁴ In the context of this document, the term “watershed” should be thought of as a subregion or basin hydrologic unit code area designated by the United States Geological Service, or similarly sized hydrologically connected area.

financing, prioritizing, and scaling watershed-scale solutions across the country, thus empowering bigger, faster NPS results and more effective, rapid achievement of CWA nutrient goals.

II. Nutrient Funding Discussion Group (NFDG) Objective

EPA has long supported market- and incentive-based approaches to help solve environmental challenges. In 2022, EPA and partners co-initiated the “Nutrient Funding Discussion Group” (NFDG)⁵ to discuss current impediments that constrain NPS project investment at scale, and identify actions that could integrate EPA funding, regulatory and financial tools into a market- and outcomes-based framework that can catalyze and secure watershed-scale results. The NFDG examined how to convert the following elements from EPA’s April 5, 2022 *Accelerating Nutrient Pollution Reductions in the Nation’s Waters* Memorandum ([2022 Nutrient Memo](#)) into actionable steps:

- “Deepen collaborative partnerships with USDA and the agricultural community”
- “Incentivize the purchase of nutrient credits and agriculture water sector collaboration”
- “Target funds whenever feasible to the locations and practices that will generate the most significant reductions in nutrient loads”
- “Deploying advanced watershed planning tools to identify critical source areas, track practice adoption, and quantify progress over a broad landscape, large watershed, or state or tribal areas”
- “Scale programs that employ ‘outcomes-based’ approaches that can maximize the delivery of water quality improvements and other benefits ... [including] financial innovations that can underwrite incentives for market-based investment”
- “Align [state nutrient loss reduction strategies] with existing statutory and regulatory frameworks and target resources to the most important opportunities for progress”
- “Championing innovative financing and using the flexibility of the Clean Water Act regulatory framework to ... drive market-based approaches, including water quality trading, third-party credit aggregation and banking, and stronger agriculture-water sector partnerships”
- “Promoting state use of [Clean Water State Revolving Fund (CWSRF)] for nonpoint sources, including expanded use of innovative approaches like pay-for-success models”
- “Building connections between the state programs and market-based environmental services providers that can combine water quality outcomes with other [environmental outcomes]”
- “Encourage mechanisms to facilitate a balance of appropriate point source and nonpoint source actions that makes best attainable progress toward water quality goals”

III. Impediments to Scaling Market- & Outcomes-Based NPS Investment

At least six major barriers stand in the way of funding and implementing NPS projects at the pace and scale necessary to secure the kinds of watershed-scale results called for in the 2022 Nutrient Memo in a timely manner:

- 1) **There is no single watershed-scale funding program dedicated to NPS with funding to match the scale of the need.** While many funding programs can support NPS projects that remediate NPS pollution, no program is both singularly dedicated and properly-sized to be capable of driving enough NPS project implementation to address watershed-scale nutrient impairment. State NPS management programs, supported by \$319 grants, develop coordinated watershed-scale funding

⁵ The NFDG is co-managed by The Freshwater Trust (Tim Wigington) and EPA staff (Jim Gebhardt). The group included staff from multiple offices within the EPA Office of Water, as well as Blue Forest Conservation, Electric Power Research Institute (EPRI), Environmental Policy Innovation Center (EPIC), Family Farm Alliance (FFA), National Association of Clean Water Agencies (NACWA), and Soil & Water Outcomes Fund (SWOF).

and implementation strategies to address priority NPS issues. The §319 program also provides funding for watershed projects, but this funding is not nearly enough to match implementation needs for all NPS pollutants, including nutrients. Funding for NPS projects is splintered across multiple siloed funding programs, each with different requirements and eligible parties, and seeking different benefits. While all *could* fund the same NPS projects, these practical differences often keep these programs isolated, making it difficult to assemble enough leveraged funding to implement watershed-scale solutions. For example, in addition to §319, USDA provides support to farmers and ranchers through Farm Bill programs to address a range of natural resource concerns. Inflation Reduction Act (IRA) Farm Bill program dollars are meant to primarily fund agricultural conservation practices that reduce greenhouse gas (GHG) emissions. Loan funds and principal forgiveness dollars added to the CWSRF program through the Bipartisan Infrastructure Law (BIL) can also support NPS projects, but must adhere to federal 33 USC 1383(c) and individual state loan program eligibilities and requirements in order to be considered.

- 2) **Splintered and complicated NPS funding programs put burdens on lower capacity actors.** Within this fractured funding environment, farmers, disadvantaged communities, and NGOs must overcome multiple technical, timing, and capacity barriers to secure funds project-by-project, program-by-program. To complete a single project, these resource-constrained groups must often piece together funds from multiple grant, donor, and loan sources, each with unique application requirements, match requirements, and funding agreement timelines.
- 3) **Regulatory conditions for point source participation in NPS outcomes are not always in place.** Ideally, point sources (PS) in watersheds with nutrient impairments would opt to buy water quality outcomes generated by NPS projects in certain circumstances where those projects can achieve more cost-effective results than additional point source treatment technologies. In many watersheds, there are not enough PS permits to even contemplate this approach. In the watersheds with a major PS presence, PS investment into cost-effective NPS projects could serve as a significant source of non-federal match that could be leveraged to help secure additional federal funds for NPS projects. However, it is not often practical for PSs to participate in this way. The lack of numeric nutrient criteria or numeric narrative criteria translators in water quality standards, and the deficit of nutrient Total Maximum Daily Loads (TMDLs) that assign significant load reduction responsibility to PSs, make this option challenging in many places. This is because water quality-based permit requirements on PSs—which could lead to wider use of market-based approaches such as WQT—are more difficult to develop in the absence of numeric criteria and/or TMDLs that assign significant load reduction responsibility to PSs. Permitting authorities also have varying policies related to the implementation of narrative nutrient criteria in waters without applicable numeric nutrient criteria and/or TMDLs. On top of these challenges, PSs often prefer the certainty of technological solutions.
- 4) **Conservation funding is not aligned with agricultural business needs.** Operating with historically thin margins and limited resources, many agricultural producers decline to participate in conservation programs because the costs and risks often outweigh the potential returns. Unlike more traditional markets where products or services are bought at a price that reflects their value, conservation funding programs reimburse projects for effort (i.e., project completion), usually at less than 100% of costs (due to match requirements). Providing funding for these projects on a reimbursement basis can create cash flow challenges for sponsors of agricultural operations.
- 5) **Project-by-project funding stifles the conservation economy.** The few NPS projects that are implemented are often smaller, lack economies of scale, are subjected to long time lags, are often disconnected from a watershed scale remediation strategy, and have high transaction costs. Because they're selected and funded individually on different timelines, it is also difficult to package projects programmatically. In addition, significant gaps between application, approval, and funding require project sponsors such as agricultural producers and NGOs to carry costs and capacity for

long stretches. Collectively, these realities make it difficult to scale up the durable workforce and ecosystem of businesses needed to deliver meaningful watershed scale improvements over time.

- 6) Many government programs must move money on tight statutory timelines which can put funding decisions at cross-purposes with maximizing water quality outcomes.** This dynamic makes it hard to build and maintain multi-year, optimized watershed funding and implementation strategies even though those approaches have long been recognized for their ability to yield better outcomes.⁶

IV. Watershed Outcomes Funding Solution Framework

Understanding these challenges, an effective outcomes-based, market-driven solution for addressing the NPS pollution challenge at the watershed scale should include the following elements:

- 1. Aggregation.** Addressing NPS challenges at a watershed scale may be best served by a project and funding aggregator that can manage data analytics to identify high return projects (e.g., cost-effective nutrient reductions), secure sufficient funding streams to implement projects at scale, coordinate with project owners/sponsors to secure project commitments, and manage financial obligations. This role can be filled by either government, not-for-profit and/or private actors.
- 2. Multi-benefit quantification & accountability system to match funders, lenders, and project sponsors.** The core element for this approach is the capacity to model project benefits in uniform environmental units that can be verified, tracked, and transacted for multiple funders. Capturing such data makes it possible to identify high-return project investment opportunities, replace reimbursement-based project contracts with contracts to buy “outcomes”, provide benefits to multiple funders who have different aims but want to support the same project types, and track progress against targets. Robust accounting ensures project benefits and costs are properly allocated, accounted for, tracked, and reported to all project sponsors, lenders, and funders.
- 3. Find, secure, and aggregate funders to build “market” certainty.** Aggregators will need to secure revenue streams from multiple sources (e.g., regulated utilities, voluntary agency grants, corporations) and package those sources together to “buy” targeted high return NPS outcomes pursuant to a coordinated and science-informed watershed strategy. To fulfill this role, aggregators will need to document and manage multiple match and eligibility requirements.
- 4. Secure upfront financing to quickly mobilize projects.** Financing must work at both the project and investor scale. Financing allows project investment to accelerate at-scale. This is critical for many NPS projects that will require agricultural partners working on thin margins to participate. But for investment to scale, there must be sufficient and certain revenue streams to support returns. Aggregation of otherwise disparate revenue streams can improve return on investment reliability.
- 5. Transact via simple Ag-facing model.** Many producers want to participate, but the current transaction model is dependent on securing funding from programs that are difficult for many producers to access, with timing and funding availability that do not reliably match their needs and/or compete with Farm Bill and state funding opportunities. Instead of leaving the burden of navigating complicated grants processes to producers, it would be preferable for an aggregator to package together multiple funding streams to purchase verified NPS outcomes from producers at known prices (e.g., \$ per lb nutrient reduced). Producers don’t need to know whether one or multiple entities are purchasing their outcomes, just what and when they can expect to be paid. This approach is transparent, easy to track, provides upfront financial clarity to agricultural producers, rewards good results, and minimizes transaction costs.

⁶ USDA has long noted that outcomes-based programs can reap more benefits but are more complex to implement. USDA, Economic Research Service, Economic Brief #5: Rewarding Farm Practices Versus Environmental Performance (Mar. 2006), https://www.ers.usda.gov/webdocs/publications/42913/29515_eb5_002.pdf?v=0.

V. Action Opportunities to Empower & Scale-Up Watershed Outcomes Funding Solutions

This section details specific actions that could help bring together existing but uncoordinated tools, with the right supporting incentives, to “scale up outcomes-based programs” as called for in the 2022 EPA Nutrient Memo.

1. Enable and Fund “Watershed Financing Partnerships” that Aggregate and Coordinate High Value Projects and Fragmented NPS Funding Sources

Across the federal government, there are multiple funding programs that can be used to fund NPS/watershed projects. For example, Congress instructed USDA to prioritize the \$19B in IRA funding added to conservation title programs to securing greenhouse gas emission reductions through climate-smart practices, including nutrient management. The BIL authorized \$11.7B in supplemental funding for EPA’s CWSRF. The U.S. Bureau of Reclamation provides funds for water delivery infrastructure upgrades to secure water quantity savings that can often produce water quality improvements as well. In addition to these voluntary programs, entities regulated under the CWA may need to secure nutrient or sediment load reductions, which could come from NPS projects as well. Although these programs have different primary objectives and funding priorities, potential overlap in the NPS project space could be leveraged to co-fund NPS projects. However, this requires a more extensive coordinated effort that often fails to occur.

This dynamic occurs within individual agencies too. For EPA water quality funding, regulations under 303(e) require that work planning for funds be coordinated to achieve priority water quality objectives identified in Continuous Planning Processes and Water Quality Management Plans.⁷ As a practical matter, EPA and many state water quality agencies use Performance Partnership Grants to target EPA grant funding to the highest priority needs/opportunities for progress, including statutory and regulatory directives for permit reissuance and developing lists of impaired waters that need TMDLs. State CWSRF programs also have priority setting requirements and approaches and are often implemented as a partnership between state water quality and financing entities. Further, several states operate their 319 programs in departments other than their water quality agency. Competing priorities and the need for coordination across multiple funding entities can complicate coordinated action to address nonpoint sources of nutrient pollution.

Strict funder match requirements also make it difficult for project sponsors to combine funding from different sources even though the outcomes such programs seek may be achieved faster and at a greater scale with coordinated action. This hurdle leaves stakeholders trying to solve watershed-scale problems project-by-project and funder-by-funder. Responsibility for these tasks may be better managed by a dedicated watershed aggregator that can pair funders with the benefit streams they seek, secure funds through individual channels, quantify benefits and connect funders to projects, bring the different local, private, state, and federal funding sources together to meet match requirements, and track and report on activity.

EPA’s CWSRF program describes an aggregator role for “watershed finance partnerships” (WFP). As described in a 2019 CWSRF Program Bulletin, “a CWSRF works with a watershed partner to finance and implement a group(s) of eligible projects within a watershed. The partner(s) may act as a broker, an

⁷ See 40 CFR 130.0(f) and 40 CFR 130.6(b).

intermediary funding projects, or a recipient of CWSRF assistance.”⁸ Endorsement of, and funding to, support a more expansive WFP role could lead to more coordinated funding and financing of otherwise siloed NPS project funding efforts. The WFP role can be paired with the 319 program, which encourages states to “develop and implement a management program under this subsection on a watershed-by-watershed basis.”⁹ Washington State’s “combined funding” program provides a useful model for coordinating some funding streams such as CWSRF, 319, and stormwater assistance grants through a single application process.¹⁰ As profiled in Appendix A, some third parties are already piloting the WFP role, but more formality, reinforcement, and funding should make subsequent efforts easier and more effective.

Identified opportunities for action:

- A. *EPA could further promote the value and successes of WFPs, thereby encouraging for-profits, nonprofits, or public-private partnership entities to take on the role of program aggregator. Once formed, WFPs could then bring together otherwise fragmented federal, state, local, and private NPS funding sources; secure financing to accelerate project implementation; and deliver financially compelling project funding offers to NPS partners.*
- B. *EPA could fund a “watershed financing partnership” pilot program that offers capacity grants and support to WFP program aggregators. Similar to the \$100M dedicated to the environmental finance center (EFC) RFA in 2022, funds to support this piloting effort could come from the Bipartisan Infrastructure Law (BIL) allocation to support supplemental CWSRF “administration.”¹¹ This would be consistent with BIL mandates to support the goals of increasing investment that serves disadvantaged rural communities, increasing climate adaptation, and “building and maintaining a robust pipeline of projects ... [by] ... encouraging integrated, regional approaches.”¹² EPA could administer this pilot program under its “environmental policy and innovation grants” category (CFDA #66.611) on its current Discretionary Programs Competitive Status List.¹³ To the extent multiple EPA funding sources are used to support a pilot effort, combined EPA funds could be awarded for pilot watersheds as a single “performance partnership” grant.¹⁴*
- C. *EPA could amend existing 319 guidance to encourage states to use 319 funds to build capacity via WFPs or equivalent aggregator frameworks, and clarify that funds directed to WFP efforts qualify as*

⁸ EPA CWSRF Bulletin, Watershed Financing Partnerships, June 2019. In the Bulletin, EPA identified three primary services that such partnerships can provide. First, such a vehicle can act as a broker, identifying key nonpoint source projects within a watershed for financing. Second, as an intermediary that gathers in funding resources in the form of grants, cost-share, compliance funds for nonpoint activities, and publicly or privately funded loans, and then on-lends or directs those combined funds to projects that merit investment based on prescribed criteria set by program funders. Third, as a funding recipient for projects that it directly sponsors. See also, EPA, 2018 Clean Water State Revolving Fund Annual Report, at 4, <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100WQ7I.PDF?Dockkey=P100WQ7I.PDF>.

⁹ 33 USC 1329(b)(4).

¹⁰ Washington Department of Ecology’s [Water Quality Combined Funding Program](#), accessed 4/10/2023.

¹¹ Infrastructure Investment and Jobs Act of 2021, P.L. 117-58, 135 STAT. 1399 (“Provided further, that up to three percent of the amounts made available under this paragraph in this Act [for supplemental CWSRF capitalization grants] in fiscal year 2022 and up to two percent in each of fiscal years 2023 through 2026 shall be for salaries, expenses, and administration.”).

¹² Memorandum from Radhika Fox to EPA Regional Water Division Directors and State SRF Program Managers, Implementation of the Clean Water and Drinking Water State Revolving Fund Provisions of the Bipartisan Infrastructure Law, at (Mar. 8, 2022), https://www.epa.gov/system/files/documents/2022-03/combined_srf-implementation-memo_final_03.2022.pdf.

¹³ U.S. EPA, Discretionary Programs Competitive Status List (as of 1/6/2021), <https://www.epa.gov/grants/discretionary-programs-competitive-status-list>.

¹⁴ States and interstate agencies have the authority to award “performance partnership grants” that combine funds from more than one environmental program grant into a single grant with a single budget. See 40 CFR 35.130.

part of the 50% of 319 funds that must be spent on “watershed projects that implement watershed-based plans.”¹⁵

- D. *States are developing long-term CWA Section 303(d) Program 2022-2032 Vision Prioritization Frameworks by April 2024. These Frameworks are being developed in collaboration with other programs impacting water quality and additional stakeholders. Among other things, they are an opportunity for states to identify their long-term priorities for water quality planning, and coordinate with multiple programs and stakeholders to determine how to strategically use authorities and resources to protect and restore water quality. In developing these frameworks, states should consider the appropriate role of WFPs in developing and implementing TMDLs and other plans designed to protect and restore water quality.*
- E. *EPA could incentivize states to utilize 319 funds to catalyze a coordinated watershed funding effort. The 2022 EPA Nutrient Memo suggests 319 funds can be used to purchase water quality credits (e.g., outcomes) from projects developed with environmental service providers that combine water quality outcomes with other commodities such as carbon sequestration. At current funding levels, 319 funds are limited and cannot be expected to secure significant outcome volumes. However, 319 project funds could be dedicated to WFPs to be combined with other funding sources to make more financially compelling project funding offers to producers.*

2. Embed Quantification & Accountability Tools into a WFP Framework that Readily Supports the Participation of Multiple Funders Looking to Secure other Benefits from the Same NPS Projects

With the right quantification and supporting accounting tools, WFPs can leverage currently siloed funding, direct that funding to cost-effective watershed projects, and better achieve the overlapping goals of multiple funders.

Over recent decades, multiple outcomes-based tools, technologies, and protocols have been developed through water quality trading (WQT) and other regulatory-driven approaches. The systems designed to support water quality trading can be leveraged to support the coordinated WFP approach. Combined with the codification of the “Interagency Committee on Water Management and Infrastructure” co-led by EPA and Department of Interior,¹⁶ there is now an institutional framework that could support a coordinated effort across federal government agencies.

Specifically, “precision watershed analytics” have been developed and calibrated in some places to help quantify project benefits and outcomes in standardized units. In some places, analytics can now be used to integrate established government models and data with satellite imagery, as well as machine-learning technology, to remotely survey a watershed and identify specific NPS practices that could be implemented at the field level, quantify the conservation benefits (or outcomes) those practices would produce, and estimate how much those practices would cost.¹⁷ The EPA 2022 Nutrient Memo calls for

¹⁵ EPA, Nonpoint Source Program and Grants Guidelines for States and Territories, at 23 (Apr. 12, 2013), <https://www.epa.gov/sites/default/files/2015-09/documents/319-guidelines-fy14.pdf>.

¹⁶ The previously established “Water Subcabinet” was formalized into this interagency committee by section 13 of the Flood Level Observation, Operations, and Decision Support (FLOODS) Act of 2022, PL 117-316, 136 STAT 4414-4415 (117th Cong.).

¹⁷ For examples, runoff into the Mid-Snake watershed in Western Idaho and Eastern Oregon contains excess sediment that includes inorganic mercury and phosphorus. Excess phosphorus in the Mid-Snake fuels algal blooms and aquatic plant growth, which depletes the water of oxygen and creates the conditions necessary to convert the inorganic mercury into dangerous methylmercury. A 2019 legal settlement requires Oregon Department of Environmental Quality (ODEQ) to develop a mercury TMDL for the Mid-Snake. Recent studies by US Geological Survey (USGS) indicate that a large proportion of the methylmercury that comes out of the hydroelectric dams in Hells Canyon comes from upstream watershed sources. Because TMDLs are not self-implementing with respect to NPS, meaningfully addressing Mid-Snake methylmercury production will require a large-

“targeting resources to the most important opportunities for progress.” Properly calibrated analytics can help target resources across a watershed by identifying potential projects that cost-effectively generate outcomes.

In addition to these benefits, analytics can also help deliver on the 2022 Nutrient Memo objective to deepen collaboration with USDA and agricultural partners. Analytics can quantify the multiple benefits provided by NPS projects, making it easier for more funders to participate, and can highlight all the important benefits already being delivered by projects on agricultural lands. However, agricultural partners are concerned data made available for funding and implementation planning will be used for enforcement purposes. This is a consideration that must be addressed to secure their buy-in and trust.

WQT programs have also spawned a significant volume of project performance standards, verification approaches,¹⁸ and tracking platforms that could help “track practice adoption and quantify progress over a broad landscape [or] large watershed” consistent with the 2022 Nutrient Memo. Many of these approaches originated from USDA conservation practice standards but have been supplemented to include outcomes-oriented elements such as quantification, verification, tracking, and accounting.

Identified opportunities for action:

- A. *EPA could encourage WFPs to quantify the multiple benefits of NPS projects (e.g., water quality pollutant reductions, water savings, GHG reductions, habitat improvements). The 2019 update to EPA’s Water Quality Trading Policy states that “a single project may generate credits for multiple markets ... The ability to generate multiple types of credits may create additional financial incentives ... to participate in market-based environmental improvement projects.”¹⁹ With these multiple benefits quantified, WFPs would have more options to secure additional funders interested in NPS project benefit streams beyond compliance-oriented pollutant reduction credits.*
- B. *EPA could encourage the consistent use of science-based tools, such as USDA’s Nutrient Tracking Tool and COMET-Planner Tool,²⁰ when implementing a WFP approach to provide quantification consistency, facilitate better integration with USDA Climate Smart efforts, identify multi-benefit project opportunities, verify project benefits, support outcomes-based compensation and simple outcomes-based contracts with agricultural partners, and track results.*
- C. *EPA could encourage states to work with USDA’s Office of the Chief Economist to expand regional validation of these tools, and to encourage states or regional groups to pursue calibration with USDA where significant CWA compliance investment could occur using NTT.*

scale funding and implementation effort focused on stopping runoff from nonpoint sources. In preparation for this effort, The Freshwater Trust (TFT) has developed the analytics needed to identify and prioritize irrigation upgrades in the Mid-Snake. TFT has identified ~311,000 acres of agricultural land currently using flood irrigation in the Mid-Snake that could be upgraded (see [analytics summary video](#)). By running the USDA Nutrient Tracking Tool (NTT) for all fields in the watershed at the same time, TFT’s preliminary investigations show that upgrading all these fields could secure all available annual mercury-laden sediment load reductions, and similar reductions of phosphorus into the Mid-Snake annually, for a total price tag of \$540 million. The analytics highlight the specific projects that can produce reductions cost-effectively, as well as the many that do not. Using these analytics to guide investment, TFT estimates that \$150 million targeted to priority irrigation upgrades (28% of the overall \$540 million) can secure 66% of annual sediment and phosphorus reductions. TFT and partners are currently organizing a coordinated funding and implementation response that will rely on these analytics to prioritize investment.

¹⁸ See Appendix A.

¹⁹ EPA, Memo. From David Ross, Updating EPA’s Water Quality Trading Policy to Promote Market-Based Mechanisms for Improving Water Quality, at 5 (Feb. 6, 2019), <https://www.epa.gov/sites/default/files/2019-02/documents/trading-policy-memo-2019.pdf>.

²⁰ COMET-Planner is USDA’s preferred tool for quantifying the GHG benefits of USDA “climate smart” practices. NRCS, Climate-Smart Agriculture and Forestry Mitigation Activities List FY 2023, FN 1, <https://www.nrcs.usda.gov/sites/default/files/2023-03/Climate-Smart-Agriculture-and-Forestry-%28CSAF%29-Mitigation-Activities-2023.pdf>.

- D. *In designing a watershed financing partnership NOFO (see Identified Opportunity for Action 1(E)), EPA could require WFPs to incorporate these, or similar, models into a decision support tool auto-populates model inputs, run simulations on large groups of fields, and identifies a watershed-scale investment strategy.*
- E. *EPA could recommend that WFPs verify quantified benefits generated from projects, and then allocate those benefits to funders in a robust accounting system with a publicly available ledger.*²¹
- F. *To help deepen shared outcomes tracking between USDA and EPA, EPA could recommend inclusion of WFP-supported watersheds on USDA's National Water Quality Initiative (NWQI).*²²
- G. *EPA could encourage WFP-supported watersheds to use watershed-scale modeling to help demonstrate the trajectory change associated with a coordinated, outcomes-based effort.*
- H. *To reduce producer concerns that field-scale conservation practice data developed to help prioritize or deliver outcomes-based investment may be later used for regulatory enforcement, EPA could encourage WFPs to independently contract with producers around data privacy, and report outcomes to funders in the aggregate in a way that protects individual producer privacy. Where implemented NPS projects produce outcomes that are used by a regulated entity to comply with the terms of a CWA requirement, EPA could clarify that regulators will have access to relevant project data necessary to confirm the ongoing performance of the project and its associated outcome(s).*

3. Find, Secure and Aggregate Project Funders – Bring Compliance Credit Buyers into the NPS Effort

As outlined in the 2022 EPA Nutrient Memo, EPA supports more robust use of the Clean Water Act regulatory framework to drive market-based approaches that address nutrient pollution. Specific to scaling up outcomes-based approaches, this set of action items focuses on helping to position and aggregate non-federal compliance funding as the leveraged “match” pool that is required to secure the large-scale voluntary USDA, DOI, FEMA, and other public funding necessary to make meaningful progress on NPS projects at a watershed scale. To encourage such an innovative approach, permittees could benefit from incentives to use their resources to support integrated watershed-scale efforts that invest in cost-effective NPS pollutant reductions and point source pollutant reductions. The following actions may incentivize greater participation in integrated watershed-scale response efforts.

Identified opportunities for action:

- A. *The 2019 update to EPA's Water Quality Trading Policy states that “water quality credits and offsets may be banked for future use. Allowing banking and future use of water quality credits encourages early adoption of pollutant reductions, reduces risks associated with practice failures, and will likely broaden and strengthen the marketplace for buyers and sellers, resulting in larger scale resource improvements over time.”*²³ *EPA could encourage states to apply this same principle to incentivize permittees to make critical early non-federal funding commitments to a WFP effort, which can be used as match to help secure additional federal grant dollars.*
- B. *Where individual permittee investments alone are incapable of achieving watershed targets, EPA could encourage states to consider watershed-based approaches*²⁴ *to meeting water quality*

²¹ One option is to use U.S. Army Corps of Engineers' Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS), <https://ribits.ops.usace.army.mil/ords/f?p=107:2>. Other outcome-based programs use MarkIt Environmental Registry. When apportioning benefits, “financial additionality” considerations should be accounted for.

²² U.S. Dep't of Agriculture, National Water Quality Initiative, <https://www.nrcs.usda.gov/programs-initiatives/national-water-quality-initiative>.

²³ EPA, Memo. From David Ross, Updating EPA's Water Quality Trading Policy to Promote Market-Based Mechanisms for Improving Water Quality (Feb. 6, 2019), <https://www.epa.gov/sites/default/files/2019-02/documents/trading-policy-memo-2019.pdf>.

²⁴ EPA, Permit Limits-Watershed-Based Permitting, <https://www.epa.gov/npdes/permit-limits-watershed-based-permitting>.

objectives such that major sources have an incentive to coordinate with each other and watershed financing partners to assemble the largest coordinated funding response possible to achieve those targets instead of each permittee dedicating their resources to individual implementation efforts.

- C. *Where permittees have received water quality-based permit limits that could be fulfilled at least in part by NPS projects in a watershed, EPA could encourage states to build mechanisms into their programs to allow permittees to make multi-year in-lieu fee-like purchase commitments²⁵ to WFPs. WFPs could then leverage those non-federal funding commitments to secure more state and federal NPS funding for the watershed, and then deliver verified outcomes back to the permittee to report.*
- D. *To “encourage mechanisms to facilitate a balance of appropriate point source and nonpoint source actions that makes best attainable progress toward water quality goals,” EPA could encourage states to work with point and nonpoint sources to identify a balanced portfolio of treatment technology and nonpoint source projects that most cost-effectively achieve water quality standards. EPA has several resources to assist in this effort. For example, EPA’s Study of Nutrient Removal and Secondary Technologies²⁶ identifies reasonable expectations for treatment efficacy of various conventional technologies. The Santa Fe Wastewater Treatment Life Cycle Assessment²⁷ is an example of evaluating impacts of some forms of advanced treatment beyond strictly cost considerations with respect to balancing environmental harms and benefits. Knowing what treatment levels should be achievable with specific technology and understanding other implications of investing in advanced treatment technology helps decision-makers identify the best options for their situation.*

4. Upfront Capital and Risk Mitigation – Mobilize CWSRF and WIFIA Tools

Though NPS management and watershed pilot projects are currently CWSRF-eligible under 33 USC 1383(c), several practical, financial, and normative constraints result in very little public capital flowing to these projects, as evidenced by the historical disparity between point and nonpoint CWSRF investment.²⁸ After decades of lending and repayment, recycled dollars now constitute a high percentage of CWSRF assets. CWSRF recycled dollars could become a critical potential source of non-federal match.²⁹ EPA and FEMA have already clarified that recycled SRF dollars can be used to fulfill the

²⁵ In-lieu fees are common under section 404 of the CWA. “An in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor.” EPA, Mechanisms for Providing Compensatory Mitigation under CWA Section 404, <https://www.epa.gov/cwa-404/mechanisms-providing-compensatory-mitigation-under-cwa-section-404#:~:text=In%2Dlieu%2Ofee%20program%20means,Department%20of%20the%20Army%20permits.>

²⁶ EPA, National Study of Nutrient Removal and Secondary Technologies, <https://www.epa.gov/eg/national-study-nutrient-removal-and-secondary-technologies.>

²⁷ EPA, Santa Fe Wastewater Treatment Plant Life Cycle Assessment, EPA # 820-S-23-001 (Jan 5. 2023), <https://www.epa.gov/system/files/documents/2023-01/life-cycle-assessment-santafe-2023.pdf>.

²⁸ Of the \$139.7 billion in CWSRF investments made from 1988 to 2020, only \$5 billion, or 3.5% went to nonpoint activities. EPA, Clean Water SRF Program Summary, National Summary, at 24, 28 (2021), <https://www.epa.gov/sites/default/files/2021-02/documents/us20.pdf>. This is due to a variety of factors: difficulty assembling payback revenue for distributed projects, transaction complexity, size limitations, and inconsistent project and recipient eligibility criteria. Even where states tried to incentivize distributed “green” projects, the credit assessment for project proponents is a significant barrier that often means loans go to centralized, less risky recipients. See EPA, FINANCING OPTIONS FOR NONTRADITIONAL ELIGIBILITIES IN THE CLEAN WATER SRF PROGRAMS, at 1 (2017), www.epa.gov/cwsrf/financing-options-nontraditional-eligibilities-cwsrf.

²⁹ In the most recent report with this information available, recycled dollar assets out-numbered new dollars by ~8x. EPA, 2019 CWSRF Annual Report, at 10, Statement of Cash Flows (Sept. 2020), https://www.epa.gov/sites/default/files/2020-10/documents/2019_cwsrf_annual_report_9-10.pdf.

Building Resilient Infrastructure and Communities (BRIC) grant program match requirements,³⁰ and EPA has clarified that recycled dollars can be used to meet the match requirements of a state's 319 grant.³¹ Some states are taking a more expansive approach.³² The opportunity will become even larger as the \$11.7B in supplemental CWSRF funds, including those funds with a 49% forgivable share authorized through the BIL, are recycled back to states over time. Many nonpoint transactions will also require risk mitigation elements. Specifically, loss reserve and "credit enhancement"³³ tools can be aggregated between the public and private sector to help overcome current barriers to financing.³⁴

Identified opportunities for action:

- A. *EPA could find that NPS projects implemented under a WFP effort are "sustainable projects" under the third prong of eligibility³⁵ for enhanced subsidy associated with BIL supplemental general CWSRF funds.*
- B. *Building on the 2019 EPA-FEMA MOU and the 2021 EPA CWSRF Best Practices Guide for Financing Nonpoint Source Solutions, EPA could confirm that recycled CWSRF capital contributions and net revenues can be used as match for all federal programs with non-federal cost-share requirements, including BIL, IRA and Farm programs.*
- C. *CWA section 319 requires states to provide a 40% minimum non-federal match for their overall 319 grant supported NPS management program each year. The match is required at the state level, but many states struggle with this condition and pass it down to each grant project subrecipient. To make it easier to leverage funding at scale, EPA could promote strategies that avoid passing on this burden to grantees, such as using recycled CWSRF funds for NPS loans as state-level match for federal 319 grants.*
- D. *EPA could recommend that state CWSRFs increase utilization of programmatic financing (Pro-Fi) to allow distributed infrastructure projects packaged by a WFP across a watershed to be bundled into a single loan to finance a program rather than just a single project.³⁶*
- E. *EPA could encourage states to apply their loan guarantee, sponsorship, forgiveness, and/or credit enhancement functions to support debt financing for projects consistent with NPS-focused watershed outcomes efforts. States could pair these CWSRF instruments with commitments to provide BIL additional subsidy or a sponsorship option that are triggered once defined watershed outcomes have been achieved (e.g., secure at least X lbs of nutrient load reductions from NPS*

³⁰ EPA and FEMA signed an MOU that determined that some types of SRF revenue would no longer be considered federal grant funds and instead be used as non-federal cost-share. Memorandum of Understanding Between The United States Environmental Protection Agency and The Department of Homeland Security Federal Emergency Management Agency, Regarding Coordination between EPA and FEMA Pertaining to State Revolving Fund Programs (2019), https://www.epa.gov/sites/default/files/2019-05/documents/mou_between_epa_and_dhs.pdf.

³¹ U.S. EPA, CWSRF Best Practices Guide for Financing Nonpoint Source Solutions, § 3.1 (2021).

³² Maryland recently sent a letter to the Biden Administration indicating its intent to use non-federal SRF funds as cost share for all federal programs, not just FEMA programs. Letter to Mitch Landrieu, from Maryland Dept. of the Env't., Oct. 19, 2022.

³³ Credit enhancement strategies improve the credit risk profile of a business to obtain better terms for repaying debt.

³⁴ See ENVTL. FINANCE ADV. BD., UTILIZING SRF FUNDING FOR GREEN INFRASTRUCTURE PROJECTS (Jan. 2014).

³⁵ States must use 49% of additional subsidy funds as grants or forgivable loans to (1) municipalities that meet affordability criteria, (2) municipalities that do not meet affordability criteria but seek to subsidize residential ratepayers, or (3) to an eligible recipient to implement a process, material, technique or technology that addresses water efficiency goals, address energy efficiency goals, mitigates stormwater runoff, or encourages sustainable project planning, design, and construction. U.S. EPA, Memo from Radhika Fox, Implementation of the Clean Water and Drinking Water State Revolving Fund Provisions of the Bipartisan Infrastructure Law (Mar. 8, 2022), https://www.epa.gov/system/files/documents/2022-03/combined_srf-implementation-memo_final_03.2022.pdf.

³⁶ See EPA [Fact Sheet on Programmatic Financing](#), Pub. # 801F18001 (Feb. 2018), and case study report titled *Exploring Opportunities for Financing Distributed Infrastructure Projects Using Wisconsin's CWSRF Program – A Nonpoint Source Pilot to Address Phosphorus Management* (March 2023) (internal contractor report available from Don Waye (wave.don@epa.gov)).

projects). This could be accomplished by providing a short-term instrument along with a commitment to provide a long-term instrument that includes additional subsidy in the future after CWSRF capitalization grants have been recycled.

- F. EPA's WIFIA program could insure or guarantee lending packages that include federal funding sources. Though WIFIA cannot directly lend to projects that include a federal payback source,³⁷ EPA could determine that WIFIA can insure or guarantee state-, local-, or privately financed lending packages that rely in part on federal funds to help repay debt.
- G. EPA could recommend that states designate NPS projects identified through watershed financing partnership analytics as a priority for CWSRF "Green Project Reserve" funding so long as they fall under at least one of the four GPR eligibility categories.³⁸

5. Simple and Ag-centric Transaction Model

In lieu of producers and local partners working to secure grant dollars through individual project proposals, having a watershed scale aggregator directing an outcomes-based system reverses and simplifies this process. Whether it's via published prices that will be paid to producers and an open inquiry form, or providing analytics information to local implementation partners so they can proactively build up a queue of high impact, cost-efficient projects, an aggregator-directed process helps center the needs of agricultural producers and the businesses that serve them. Connecting with producers through these channels can buffer them from the usual complexity and burdens of accessing individual conservation funding programs, which will make it easier for them to participate.

Identified opportunities for action:

- A. Though not all public funding programs can buy outcomes, EPA could encourage third party WFP intermediaries to package public and private funds secured for watershed work into singular outcome purchase agreements (e.g., outcome purchase agreements where authorized, outcomes-based subawards, or 2 CFR 200.201(b) fixed amount awards) from agricultural producers and other project sponsors. When undertaking this "broker" role, the third-party WFP must deliver those funds to NPS projects that are eligible under and consistent with each program's requirements while providing an equitable and unbiased process.
- B. EPA could encourage states working with WFPs to use 319 and CWSRF resources to structure transactions to provide upfront capital for a meaningful portion of the project to address the cash flow constraints experienced by agricultural operations when implementing NPS projects.

³⁷ 40 CFR 35.10045(b).

³⁸ The American Recovery Act of 2009 (ARRA) created the [Green Project Reserve](#) which requires that all CWSRF programs to use a portion of their federal grant for projects that address green infrastructure, water and energy efficiency, or other environmentally innovative activities. Certain projects are "categorically eligible." EPA, 2012 Clean Water State Revolving Fund 10% Green Project Reserve: Guidance for Determining Project Eligibility, https://www.epa.gov/sites/default/files/2015-04/documents/green_project_reserve_eligibility_guidance.pdf.

Appendix A: Market- & Outcomes-Based Program Examples

“Outcomes-based” programs compensate project sponsors for the result that a project achieves. In most funding programs, payments are made once a project is completed without regard to its level of performance. The following program examples highlight instances where outcomes are at the center of transactions. These programs are often referred to as “outcome-based” because the transactions are based on buying environmental “commodities” at their value, much like in traditional markets:

(1) Soil & Water Outcomes Fund (SWOF): The [SWOF](#) is an innovative approach to implementing regenerative agriculture on private lands and is executed through a partnership with Qualified Ventures (QV) and the Iowa Soybean Association (ISA). The SWOF is a multi-payor financing vehicle that provides farmers with financial incentives to implement conservation practices that generate verifiable environmental outcomes. In 2021, the Fund distributed ~\$4M to farmers to implement practices across 120,000+ acres of cropland in six states, which are projected to yield the following outcomes: > 111,500 metric tons of CO₂ equivalents sequestered (a 260% reduction); and > 1.9 million lbs of nitrogen prevented from leaving enrolled fields (a 28% reduction); nearly 112,400 lbs of phosphorus prevented from leaving enrolled fields (a 27% reduction).

(2) Forest Resilience Bond: In 2018, Blue Forest Conservation (BF) successfully launched the first [Forest Resilience Bond \(FRB\)](#) to finance \$4 million in forest restoration treatments across 15,000 acres on the Tahoe National Forest. The FRB secured revenue commitments from Yuba Water Agency and California’s climate investment fund, and then used private financing from foundations and investors (e.g., CSAA Insurance, Calvert Impact Capital) to implement restoration projects. In 2021, BF launched the second FRB to finance \$25 million in forest restoration to restore 48,000 forested acres in the Tahoe, protect nearby communities, and enhance water security. The EPA Water Infrastructure and Resiliency Finance Center wrote a [detailed case study](#) on the FRB in 2019. Blue Forest has engaged with over 25 National Forests across four Forest Service Regions to build capacity and develop over \$100 million in potential Forest Resilience Bond projects. In 2023, Blue Forest launched [Blue Forest Asset Management](#) along with the California Wildfire Innovation Fund (CWIF), a first-of-its-kind climate solutions strategy that seeks to generate competitive financial returns while reducing fire risk for property owners, communities, infrastructure, and ecosystems.

(3) Idaho Power Company Snake River Stewardship Program: Using analytics to quantify, identify and prioritize investment, IPC and agencies were able to come to agreement on joint CWA 401 certifications from Idaho and Oregon to implement a \$350 million watershed stewardship program (the [Snake River Stewardship Program](#) – starts on pg. 403 of link). This outcomes-based program will rehabilitate 1,000s of acres of tributary riparian vegetation, reshape the mainstem Snake River to better fit its current hydrograph, and avoid sediment and nutrient loading in the Mid-Snake, with all benefits uniformly calculated in thermal load reduction units that IPC then uses to demonstrate regulatory compliance.

(4) Oregon water quality trading programs: Starting in 2011, the City of Medford began replanting native trees in strategic places in the Rogue River basin. Throughout the basin, analytics are used to quantify the solar load blocked by vegetation, and then high-impact, cost-effective sites are recruited and implemented. Under this \$6.5M program, the City received 600 million kcals/day of credits to use for compliance with its CWA NPDES permit. The project work that generated these credits restored nearly 50 acres of riparian area on 13 sites. The City’s next cheapest technological alternative would have cost ~\$15M. The City of Ashland has a similar program (130 million kcals required under its NPDES permit, \$4M program), and was financed by the CWSRF program. The Cities of Eugene and Springfield

recently signed a \$10M contract to implement a 440 million kcal shade program. All projects are tracked via a publicly available [registry](#).

(5) Maryland CWSRF loan guarantee: the Maryland Department of Environment's (MDE) Water Quality State Revolving Fund (SRF) recently announced a \$2.5 million loan guarantee made to finance natural climate solutions in Maryland's family forests. Loan payback will be generated through carbon credit sales, with financing from a private party.

(6) Wisconsin adaptive management. In 2021-2022, EPA worked with Wisconsin's CWSRF program to facilitate greater investments in NPS projects such as agricultural BMPs and urban green infrastructure practices as cost-effective alternatives to traditional point source projects for reducing phosphorus pollution in lakes and other water bodies. Wisconsin used EPA's assistance to develop an interim strategy that would allow a wastewater utility to invest in an adaptive management approach for meeting a phosphorus reduction target by bundling together disparate NPS projects distributed throughout a watershed, all within a single loan agreement. This WFP strategy offers a low-cost and comprehensive way for public utilities to easily finance a wide range of projects that leverage many partners throughout a watershed using a Pro-Fi approach (see p. 4 of this Action Plan for more information on Pro-Fi). This effort is also likely to increase investments by participating utilities in the agricultural community to reduce phosphorus more cost-effectively in state waters.

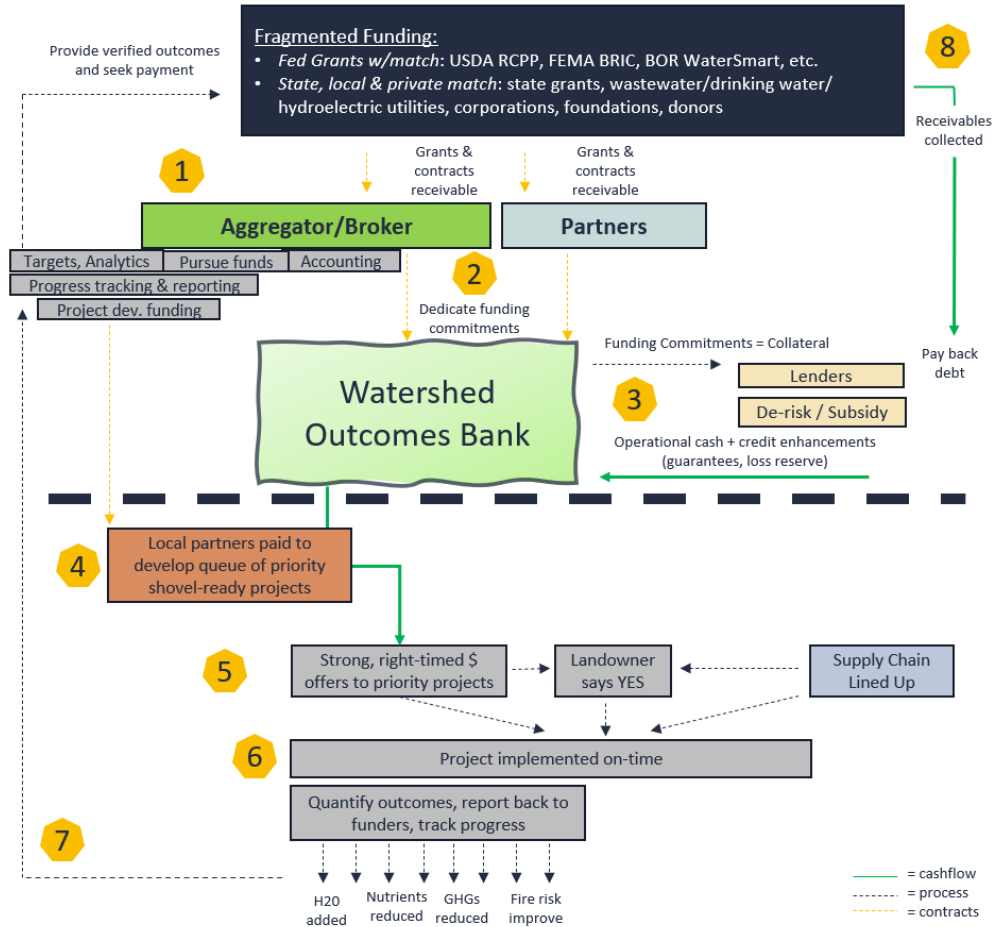
(7) Maryland clean water outcomes purchasing. The Maryland Department of Environment's Clean Water Commerce Program is the first example of state money directly purchasing water quality outcomes. The \$20 million/year program pays for reductions in nonpoint nitrogen pollution that last at least ten years, as modeled by the Chesapeake Assessment Scenario Tool. At least 35% of funds are reserved for agricultural practices and a minimum of 10% for non-agricultural landscape restoration. Projects also get prioritized for funding based on co-benefits such as greenhouse gas offsetting, climate risk resiliency, phosphorus, and sediment load reductions, and alleviating environmental harms in disadvantaged communities. The program's solicitation for applications was released in June 2022, and the state is expected to award contracts in 2023. In the recently passed Conservation Finance Act of 2022, Maryland authorized all natural resource-focused departments to buy environmental outcomes using Pay for Success contracts.

(8) Ohio River Basin Program. Since 2012, the Electric Power Research Institute (EPRI) and a collaboration of power companies, wastewater utilities, farmers, state and federal agencies and environmental interests have been running a regional interstate water quality trading framework in the Ohio River Basin, including Kentucky, Indiana, and Ohio. The [program](#) is currently the largest (by geography) WQT program in the United States. This program is set up to pay farmers for achieving nutrient reductions of nitrogen and phosphorous. EPRI relied on the USDA Nutrient Tracking Tool (NTT) and the Watershed Analysis Risk Management Framework (WARMF) to model reductions and benefits, developed project performance standards for multiple practices, uses third party verification, and records all transactions on a public ledger. All credits are tracked via a credit trading registry, including farm-level verification report signed by state agencies.

To help illustrate the mechanics when setting up a new watershed outcomes-based approach, the NFDG has assembled the following step-by-step guide and flowchart:

Watershed Financing Partnership (WFP) Framework

1. **Partner + Bank entity:** Partner “aggregator” manages functions (e.g., targets, analytics, track/report outcomes, accounting) and oversees special purpose financial entity
 2. **WFP + Other Partners Dedicate Awards/Contracts:** All “commitments” to Bank to use as match to get more \$
 3. **Secure Upfront Financing:** Convert commitments from currently misaligned project \$ into upfront financing (unlocked by friendly capital to de-risk and reduce cost)
-
4. **Local Partners Recruit and Design Priority Projects:** Aggregator pays local partners (districts, NGOs, local suppliers) to secure priority project commitments + pre-design a queue of shovel ready priority projects
 5. **Project Funding Offers:** Enough costs covered at the right time (with right incentive structure) to make it easy for landowners and supply chain to say yes
 6. **Project Implemented on-time:** Rapidly convert pre-designed projects into on-the-ground results
 7. **Accounting/Reimbursement:** Partner allocates expenses and outcomes to each funder and seeks reimbursement from funders via each funder’s normal channels
 8. **Pay back debt:** As funders convert awards/contracts into reimbursement, Partner pays funds into Bank, which then pays back its debt



Appendix B: Aggregator Structure, Functions & Pricing

EPA has communicated with the water stakeholder community the potential for watershed financing partnerships (WFPs) to implement nonpoint source projects on a watershed-wide basis using SRF financial assistance.³⁹ In implementing the 2022 EPA Nutrient Memo, third party WFPs could play an expanded role in procuring outcomes on behalf of funders in coordinated watershed funding and implementation efforts.

EPA actively encourages the formation of WFPs in the SRF context, and some states have successfully created a limited class of intermediary lenders. For example, Washington partnered with a regional entity to provide small loans under \$20,000 for the replacement of failing septic systems.⁴⁰ While this arrangement is narrowly tailored, an expanded WFP model could be used to combine funding sources from multiple agency program silos into a single vehicle, and underwrite investment in projects that can deliver the highest impact outcomes. This model could be used to help buy nonpoint source project outcomes beyond what point sources can support.

To function effectively, a WFP must therefore be an eligible fund recipient or aggregator, have a large enough geographical footprint to cover multiple jurisdictions and funders, and ideally have debt authority to take advantage of credit enhancement/risk tools. A WFP could segregate its NPS financing function with the establishment of a special purpose vehicle (SPV) to house its debt obligations. This would allow it to focus on a narrow set of mandates without having to “fit” its new specific obligations alongside existing ones.⁴¹ A WFP could be set up as a stand-alone account under existing state⁴² or new federal authority,⁴³ or could be housed in a state’s CWSRF program. Importantly, the WFP need not be a “fund”, but rather an aggregator with authorized access to various discrete funding sources. As long as the money is available to flow in real-time to pay for delivered project outcomes, dedicated federal funds can be held in the U.S. Department of Treasury “Automatic Standard Application for Payments” (ASAP.gov) portal, which allows non-federal entities to quickly and securely transfer funds while keeping them housed in the federal government.⁴⁴

Wherever it is housed, a WFP would need to be able to quickly procure outcomes in a way that overcomes the complex process, lengthy timelines, funding match requirement hurdles, and funding

³⁹ CWSRF Bulletin, Watershed Financing Partnerships, June 2019.

⁴⁰ Washington State Dept of Ecology, On-site Sewage System Projects, <https://ecology.wa.gov/About-us/How-we-operate/Grants-loans/Find-a-grant-or-loan/Water-Quality-grants-and-loans/On-site-sewage-projects#RegOSS>.

⁴¹ For example, in implementing its “forest resiliency bond”, Blue Forest Conservation established a SPV, which allowed each funding and financing entity to carve out limited elements and specifically direct them through a hyper-focused entity. Blue Forest Conservation, How the Forest Resilience Bond Works, <https://www.youtube.com/watch?t=5s&v=qKRakJEpiY>.

⁴² For example, the Idaho “Ag BMP Fund.” IDC 39-2628A created for DEQ to fund a “statewide grant program” to meet water quality standards in impaired waterbodies. The Fund can house “donations and grants from other sources.” Nonprofits, soil & water conservation districts, delivery/drain organizations, and agricultural producers are eligible grant recipient entities. In New Jersey, the New Jersey Water Bank (NJWB) is jointly administered by the N.J. Infrastructure Bank—an independent state financing authority—and the N.J. Dep’t of Environmental Protection. The NJWB provides low-cost financing for the design and implementation of water projects. Beyond leveraging multiple clean water funding streams, the NJWB is directly involved in managing local governments’ FEMA-eligible water infrastructure projects, acting in a third-party capacity to assure project compliance issues are addressed that will maximize project eligibilities and FEMA reimbursements. N.J. Dep’t of Env’tl. Quality, The New Jersey Water Bank, https://www.nj.gov/dep/dwq/mface_njeifp.htm. See N.J. Infrastructure Bank, Annual Report SFY2020 (2021), <https://cdn.njib.gov/njeit/annualreports/annualreport2020.pdf>. N.J. Environmental Infrastructure Financing Program (2017), https://www.nj.gov/dep/dwq/pdf/NJEIFP_Funding_Booklet20170517.pdf.

⁴³ For example, the Protect the West Act (S. 540, 118th Congress) would establish an “Outdoor and Watershed Restoration Fund” in Treasury to direct \$60B in restoration and watershed grants from multiple covered authorities. The Fund would have flexibility to meet match requirements, allow performance-based payments, and be allowed to accept private contributions.

⁴⁴ U.S. Dep’t of Treasury, Automatic Standard Application for Payments, <https://fiscal.treasury.gov/asap/>.

uncertainty⁴⁵ that currently make it a challenge to accelerate project timeframes. This will require streamlined procurement mechanisms and pay-for-performance contracts that insulate farmers, project developers, and investors from the complexity and uncertainty of the current grant/subsidy process. Some states have already created pay-for-performance models. In the mid-2010s, PENNVEST hosted auctions for nutrient credits.⁴⁶ In 2017, Louisiana passed bipartisan legislation to authorize a state agency to use “outcome-based performance contracts” (up to \$250K per contract) to deliver coastal protection and restoration projects more quickly, at better value and performance, and with lower costs.⁴⁷ And recently, Maryland passed legislation that will dedicate \$20M/year to pay for performance programs.⁴⁸ Outside of a couple of pay-for-performance authorities,⁴⁹ the federal government would need to use “fixed amount awards”⁵⁰ or performance partnership grants⁵¹ to procure projects.

Specifically, with multiple committed public funding streams, a WFP could help set outcomes prices for producers in measurable units (e.g., \$/lb nutrient). In practice, pricing will fall on a spectrum between government-supported “backstop” pricing (price floors to establish certainty for a market) and supply-demand “auction” type pricing, often with multiple considerations embedded. Pricing will also need to occur at a watershed-scale to account for local constraints such as project types needed, the capital and O&M costs to deliver project benefits, and the share of costs that need to be subsidized. For example, in a heavily irrigated system, new drip or sprinkler irrigation may be needed, which would have a very different cost basis, subsidy need, and investment duration compared to a landscape where cover cropping is the most effective response. Prices and coordinated/combined purchasing power will send out consistent demand signals, which will help spur an entire ecosystem of businesses to invest in and deliver project outcomes.⁵²

⁴⁵ As an example, USDA’s EQIP program only funded 27.7% of EQIP applications in 2019. See M. STUBBS, CONG. RESEARCH SERV., R40763, AGRICULTURAL CONSERVATION: A GUIDE TO PROGRAMS 19 (2020), <https://fas.org/sgp/crs/misc/R40763.pdf>.

⁴⁶ The Pennsylvania Infrastructure Investment Authority (PENNVEST), working in conjunction with the Department of Environmental Protection, hosted auctions for the sale and purchase of nutrient credits. PENNVEST served as a central counterparty and clearinghouse for auction transactions, meaning that credit buyers and sellers contracted with PENNVEST, thus reducing risk for buyers and sellers. PENNVEST, Nutrient Credit Trading Program, <https://www.pennvest.pa.gov/Pages/nutrient-credit-auctions.aspx>.

⁴⁷ Louisiana House Bill 596 (2017), <https://legiscan.com/LA/text/HB596/id/1636508/Louisiana-2017-HB596-Chaptered.pdf>.

⁴⁸ Maryland Clean Water Commerce Act of 2021, <https://mgaleg.maryland.gov/mgaweb/Legislation/Details/sb0119?ys=2021RS>.

⁴⁹ For example, the Social Impact Partnership to Pay for Results Act (SIPRA) gave Treasury the authority to implement \$100M in pay for performance demonstration projects. U.S. Dep’t of Treasury, SIPRA – Pay for Results, <https://home.treasury.gov/services/social-impact-partnerships/sippra-pay-for-results>. See 42 U.S.C. § 1397n—1397n-13.

⁵⁰ Federal awarding agencies, or pass-through entities such as WFPs as permitted in 2 CFR § 200.333, may use fixed amount awards to make payments based on performance and results, including on a per unit basis. 2 CFR 200.201(b). EPA is authorized to make fixed amount awards. 2 CFR 1500.6. Federal agencies may also request exceptions in support of innovative program designs. 2 CFR 200.102(d), 2 CFR 1500.4.

⁵¹ States and interstate agencies have the authority to award “performance partnership grants” that combine funds from more than one environmental program grant into a single grant with a single budget. See 40 CFR 35.130.

⁵² For example, the Energy Trust of Oregon (ETO) was formed as a nonprofit in 2002 and operates as a “public purpose charge administrator” to Oregon. ETO is responsible for aggregating and directing dedicated private energy and natural gas utility funds to private businesses and individuals to implement energy efficiency projects, renewable resource development, and low-income weatherization. Energy Trust of Oregon, Our History, <https://www.energytrust.org/about/explore-energy-trust/mission-approach/history/>.