

The Water Report

Water Rights, Water Quality & Water Solutions in the West

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SMARTER, FASTER, MORE EFFICIENT WORKING LANDS INVESTMENT

by Tim Wigington, David Primozych, and Danielle Dumont,
The Freshwater Trust (Portland, OR)

Introduction

We need investment in working lands, but our current funding approach is inefficient, fragmented, and tangled in red tape. More efficient public investment could significantly improve American food security and reduce flood and fire risks. By using technology to prioritize where we invest, coordinating fragmented funding to the best projects across a region, and vastly streamlining transactions, we can convert essential government investment into critical outcomes that matter to everyone.

THE BENEFITS OF INVESTMENT:

FOOD SECURITY AND REDUCED FLOOD AND FIRE RISKS

Working lands are areas of land that are used for agriculture, ranching, forestry, or other productive purposes. Robust working lands investment provides agricultural producers with valuable funds to implement practices that create the production efficiency and flexibility needed to manage resources through drought, urban encroachment, labor shortages, rising input costs, and new regulatory pressures (e.g., those responding to water quality impairments). In the face of rapid farmland conversion, growing droughts that threaten water security, widespread nutrient-driven water quality impairments, and rising costs of farming, robust conservation investment can help farmers stay in business, better withstand macroeconomic shocks, and deliver food to American consumers more affordably.

Working Lands Challenges

- From 2001 to 2016, America lost an average of 2,000 acres of farmland per day
- 27 million Americans now live in areas with severe water insecurity
- The water quality of more than half of America's waterways is impaired, mostly due to nutrient runoff.
- From 2020 to 2023, the combined costs of fertilizer, fuel, land, machinery, and labor jumped 28% while consumer food prices jumped 25%.

Investment in working lands can also reduce the risks and costs of catastrophic disasters. The burden on taxpayers of post-disaster spending is becoming unsustainable. Post-disaster business closures reduce federal, state, and local tax collections, and the exodus of private home insurers from entire geographies exposes communities to higher home and insurance costs. These trends—and the associated financial exposure—are only accelerating. Given that every dollar of federal money spent pre-disaster returns six dollars in benefits, we need to increase investment in working lands such as farms, floodplains, and forestry projects.

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Working Lands**Compliance Requirements****Natural Disasters**

- Since 1980, the US has experienced 403 natural disasters, incurring costs of more than \$2.915 trillion
- Over 25% of all disaster spending since 1980 has occurred in the last five years (\$149.3 billion per year)
- 40% of small businesses do not reopen after a disaster, and another 25% fail within a year of the disaster
- 9 of the 10 largest California wildfires have occurred since 2015

CURRENT INVESTMENT APPROACH

The current US working lands investment approach is inefficient, fragmented, and covered in red tape; thus, we miss out on its massive potential benefits. Smarter investment could help us adapt to major threats—but only if we could more quickly deliver funding to the best projects on farms, forests, and floodplains. Unfortunately, the current funding and implementation model has multiple flaws, including:

- **Funding is splintered into complicated and siloed conservation programs:** In general, funding to improve land and water management is splintered across dozens of agencies and programs, each with their own set of rules and requirements. Within each agency or program silo, smaller subsets of funds are disbursed through highly technical and lengthy project-by-project grant, incentive, or loan programs. These programs are rarely coordinated.
- **Burdensome “match”:** Most of these programs have match funding requirements that are burdensome for recipients. Recipients are usually smaller, less-resourced entities (e.g., family farms, local districts, non-governmental organizations) that must piece together difficult-to-find funds. Match funds must be assembled for every single project, which is a slow and fragmented process. This hurdle makes it difficult for the government to deploy critical solutions quickly.
- **Results and cost efficiency are lost in multi-layered scoring criteria:** Funding is rarely linked to directly quantifiable outcomes or results that can be compared against costs, thus making cost-efficient choices difficult. Instead, programs must balance and incorporate multiple competing objectives and criteria. All these criteria make it increasingly challenging to quickly and decisively fund projects or track the primary objectives of programs. This reality also makes it difficult to measure the success or failure of the projects that are selected or determine whether the return on investment justifies continued appropriations.
- **Efforts are heavily skewed to extensive oversight and compliance, not results:** Instead of focusing on directly quantifiable outcomes or results, or the return on investment, understaffed agencies and funding recipients must navigate a massive stack of “crosscutters” (compliance requirements not related to the primary purpose of the investment) to confirm the project is adhering to multiple ancillary objectives. In many instances, adherence to and documentation of compliance with the crosscutters takes up just as much bandwidth and attention as the actual projects. The crosscutters—and the associated laborious documentation—slow solicitation, review, and progress of projects, and collectively contribute to an agency culture of “no” over “go.”

What Are Crosscutters?

Crosscutters are the compliance laws that apply to most federal programs, but which are not the primary purpose of the federal initiative or investment. Some of these crosscutters include:

- Davis Bacon: ensure contractors pay prevailing wage
- National Historic Preservation Act: survey to ensure cultural resources are protected
- National Environmental Policy Act: required documentation of positive and negative environmental impacts, along with alternatives
- Buy American Build America: source project inputs from within the USA
- American Iron and Steel: source project inputs from within the USA
- Paperwork Reduction Act: documentation and review of anything published by the government
- Procurement regulations: complex rules for grants and agreements

Although each crosscutter may have had a legitimate origin, they keep getting added and are rarely removed or consolidated. The time required to satisfy these combined crosscutters now significantly slows down most government initiatives. In many ways, crosscutters have become the focus of program implementation—supplanting the primary outcomes that Congress has deemed important in the first place.

Working Lands

New Funding Framework

Principles

OUTCOME-DRIVEN INVESTMENT

To overcome these challenges and realize the critical benefits associated with robust investment in working lands, we must implement a technology-driven approach that eliminates much of the excess process and red tape that many Americans dislike and, instead, focus intensely on quickly securing the best working lands outcomes across a region. By “outcomes,” we mean the measurable water savings, runoff reductions, and fire or flood risk reductions that can be generated from working lands projects; and by “best,” we mean the projects that can generate those outcomes for the least cost.

The technology, data, and project know-how exist to do this, but no one is currently responsible for putting together the pieces to solve this complicated multi-sided problem. In direct response to the need and the challenges in the context of working lands conservation investment, this article describes the “Watershed Outcomes Bank” model developed by The Freshwater Trust. This model utilizes big data and cutting-edge technology to identify the best working lands conservation projects; aggregate and coordinate siloed funding into a nimble and powerful central hub; and streamline delivery of funding to the best projects at speed and scale. After describing the approach, this article details how the model is being piloted in two Western watersheds, and then it finishes by describing how federal policy reform can help embed this approach into an upgraded operating model moving forward.

The Watershed Outcomes Bank

The Freshwater Trust (TFT) and its partners designed the Watershed Outcomes Bank (Bank)—a regionally integrated, tech-driven solution for efficiently driving investment to the best projects—to overcome the litany of obstacles described above and drive solutions that scale.

The central premise of the Bank is to fill the gap in responsibility for solving these multi-sided regional problems—ones that span multiple jurisdictions and require multiple funding programs—with a centralized hub that aggregates funds, targets those coordinated funds to the best projects, and delivers funds at the right times.

To accomplish these goals, the Watershed Outcomes Bank integrates these repeatable steps into a framework that centers results and efficiency. The principles of this framework are as follows.

- A. Build a regional funding & implementation system to unlock key project types at scale:** Identify the desired and feasible project types that deliver needed outcomes most efficiently in the region (e.g., irrigation upgrades, forest thinning, groundwater aquifer recharge, replanting trees), and organize funders, supply chain partners, and land and water managers around those projects.
- B. Use precision analytics to document multiple project benefits and develop a portfolio of priority projects:** Precision analytics quantifies the multiple benefits of projects in units that matter to funders. With multiple project benefits documented, partners can identify the best portfolio of projects to achieve regional improvement targets for the least cost.
- C. Recruit and cultivate the best projects:** Work with local partners and businesses to build an inventory of implementation-ready high-priority projects.
- D. Aggregate funding:** Jointly pursue, secure, leverage, and consolidate otherwise-siloed funds into a centralized hub that drives coordinated funding to those high-priority projects.
- E. Secure working capital:** Convert funding commitments into working capital that is delivered simply, in the right amounts, and on the right timelines to farmers, partners, and the supply chain so that they can do the work.
- F. Standardize and simplify project delivery:** Integrate and streamline the process of designing, ensuring compliance, and verifying project outcomes so projects get implemented faster and in greater volumes.
- G. Pay back debt:** Once projects have been implemented, seek reimbursement for those documented outcomes; and pay back financing—completely buffering all partners from this process.
- H. Show results and progress:** Quantify and monitor progress to inform adaptive strategies that maximize progress toward regional improvement targets.

Pursuant to this strategy, more money can be delivered to the best projects, with significantly reduced transaction costs and improved speed. In short, the aggregation that occurs via the Bank (and outside of government) will make it possible to secure bigger, faster, more cost-effective results that can be documented.

Working Lands

Proceeding Programs

The Watershed Outcomes Bank framework was inspired by, and builds on, multiple previous innovations, including:

- **2018 Regional Conservation Partnership Program (RCPP) Alternative Funding Arrangements (AFA):** The 2018 Farm Bill added the AFAs to the RCPP to “achieve conservation benefits on a regional or watershed scale” that would address concerns “such as drought, wildfire, or water quality impairment”, by using “innovative approaches to leveraging the Federal investment in conservation with private financial mechanisms ... such as the provision of performance-based payments to producers; and support for an environmental market” (16 USC 3871c(d)).
- **2019 EPA Water Quality Trading Policy to Promote Market-Based Mechanisms for Improving Water Quality:** The 2019 Policy stated that “a single project may generate credits for multiple markets” and that “the ability to generate multiple types of credits may create additional financial incentives ... to participate in market-based environmental improvement projects.”
- **2019 EPA “Watershed Finance Partnership” Model:** In 2019, the EPA Clean Water State Revolving Fund (CWSRF) program published a bulletin on watershed finance partnerships (WFPs). The bulletin described how “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 intermediary funding projects, or a recipient of CWSRF assistance.”
- **The Soil & Water Outcomes Fund (SWOF):** The SWOF was launched through a partnership with the Iowa Soybean Association (ISA) and Quantified Ventures (QV). SWOF consolidated utility, state, US Department of Agriculture (USDA), and corporate funding commitments into a central hub. This consolidated “collateral” was used to secure financing. With financing in hand, SWOF offers producers a 50% payment up front, and the balance after an agricultural conservation practice is verified. SWOF then seeks reimbursement from funders. Since 2019, SWOF has scaled from \$5 million to \$500 million, and now operates in 16 states (<https://theoutcomesfund.com/>).
- **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 in the Tahoe National Forest. The FRB secured revenue commitments from Yuba Water Agency and California’s Climate Investment Fund, then used private financing from foundations and investors (e.g., CSAA Insurance, Calvert Impact Capital) to implement 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 (<https://www.blueforest.org/finance/forest-resilience-bond/>).
- **Regional/state outcomes-based purchasing models:** In the mid-2010s, PENNVEST hosted auctions for nutrient credits. Starting in 2017 after the passage of bipartisan legislation, the Louisiana Coastal Protection & Restoration Authority (CPRA) continues to prioritize high-priority resilience projects, coordinate existing and new federal and nonfederal funds to implement those projects, and use “outcome-based performance contracts” to deliver high-performance coastal protection and restoration projects more quickly and at lower costs. In 2022, Maryland passed the Clean Water Commerce Act, which dedicates \$20 million per year to performance programs.

Watershed Scale

What makes the Bank approach unique is that it operates at a regional/watershed scale, which enables broader and more coordinated impacts. The Bank fully integrates analytics and technology to efficiently design, prioritize, fund, and track the progress of projects. A centralized administrative system streamlines processes that would otherwise be manual and duplicative. Furthermore, its transaction-ready legal and financial infrastructure allows for the seamless integration of programs, creating a flexible, nimble outcome-based solution.

Why call it the Watershed Outcomes Bank?

Watershed: Efforts must be integrated at a scale that matters for food security and disaster avoidance.

Outcomes: Quantifiable and verifiable improvements that can be used to consistently identify and prioritize project investment based on relative costs and benefits. By quantifying projects in multiple units or “currencies,” we create the opportunity to “sell” projects to more buyers and create a common language for assessing results.

Bank: Banks rigorously manage and track accounts through a central operation, and they offer financing and help partners unlock bigger transactions.

Framework

Working Lands**Outcome Currencies****Administration Software****Data Privacy**

With precision watershed analytics, we can quickly and effectively quantify the “outcomes” of projects in multiple “currencies”—such as gallons of water saved, pounds of excess nutrients avoided, and fire or flood risk reduced. These currencies make it possible to coordinate investment of otherwise siloed public funds toward priority projects that produce outcomes most cost-effectively. Instead of complicated customized funding applications through each agency, all funders can co-fund projects and receive the quantified outcomes they need. For example, if one program needs nutrient reductions, another needs water quantity savings, and another wants improved economic conditions in underserved rural communities, then funding from all programs can be directed to agricultural irrigation modernization projects because such a project can quantifiably deliver each of those benefits.

In addition to analytics, the Bank is enabled by centralized program administration software that supports project work at a regional scale. TFT built its patented StreamBank® Administrative Toolkit software to automate workflows, centralize the secure storage of documents (e.g., project designs, permits, contracts, monitoring, and verification reports), track project and program progress, and automate reporting. Since 2015, this Toolkit has been used to support Idaho Power Company’s (IPC) \$350 million watershed restoration program for Clean Water Act temperature compliance in the Snake River basin, and it is now being used in other Western watersheds.

Unlike traditional conservation partnership efforts that take a long time to formalize (e.g., memoranda of understanding, joint power authorities, intergovernmental agreements), the Bank is set up as a transaction-enabling entity. With this narrow purpose and known priorities already identified across a watershed pursuant to analytics, the Bank does not require partner consensus or voting or full organizational agreement. Thus, participants can leverage funds to shared project priorities, pursue leveraged funds together, and execute the transaction efficiently. The Bank can support partners with funding leverage, contract management, and accounting and reporting.

In addition, by operating as a broker outside of government, the Bank can protect data created to protect investment in working land from potential misuse. To allay the concerns of agricultural producers and landowners that field-level conservation data may later be used for regulatory enforcement, the Bank can independently contract with producers around data privacy and report outcomes to funders in aggregate to protect individual privacy.

BENEFITS OF THE BANK FRAMEWORK

Once implemented, this framework offers multiple benefits that are not possible under the status quo approach to working lands investment:

- **Better Return on Investment (ROI) Enabled by Technology:** With the resources secured in the Bank, we can maximize ROI by improving results and reducing costs. The Bank’s data-driven approach enables simpler project comparisons and maximizes progress with finite funding. By building up bigger, more predictable pools of funding, supply chains can deliver results more cost-effectively.
- **Efficiency and Cost Savings:** Partners currently duplicate skills, personnel, and time to pursue, manage, and report on complex conservation funding agreements. By avoiding duplication, centralizing administrative functions, and getting partners operating together, we gain multiple efficiencies and reduce costs.
- **Increased Speed:** Projects are currently constrained by the start-and-stop pace of securing match funding and then waiting for reimbursement. This creates continuous cashflow and operational challenges. Working together through the Bank gives partners better access to financing, which is what has unlocked scale and speed in every other sector of the economy.
- **More Bargaining Power:** Working at the regional scale—instead of project-by-project—can open opportunities for programmatic permits, streamlined processes, and institutional financing. It can also help create “funding magnets”: as the Bank delivers more, and faster, it becomes a trusted place for funds to go. Therefore, instead of having to painstakingly pursue every grant and contract funding notice, buyers may start to direct funds to the effort.
- **Nimble Operations:** By focusing exclusively on enabling more funding, more leverage, and more projects, the Bank can be agile, low-cost, and nimble in its pursuits.

Snake River: Watershed Outcomes Bank Case Study

The Snake River flows into the Columbia River, the largest North American river to enter the Pacific Ocean. Over 1,000 miles in length, the Snake River works hard for the West. It generates power for millions of people, supports a multi-billion-dollar agricultural economy, and serves as a major shipping artery for commerce throughout the region. The river is also used by tens of thousands of recreationists each year, and it supports major regional fisheries and tribal communities.

Working Lands**Methylmercury**

Levels of inorganic mercury in soils (largely deposited from air pollution) in the Snake are unremarkable, but considerable amounts of methylmercury are being produced in the river system compared to other rivers in the West. This is driven by several factors. First, the sediment from agricultural runoff makes the river shallower, and the excess phosphorus attached to that sediment runoff fuels algal blooms and aquatic plant growth. This growth is exacerbated by the extra heat loading into the shallow and unshaded river. As aquatic plants die and decompose, the water is depleted of oxygen. The low-oxygen or “anoxic” conditions convert inorganic mercury (also contained in sediment runoff) into methylmercury. Methylmercury is easily absorbed by fish and, thus, can accumulate in the food chain, contributing to brain disorders and heart disease in humans who regularly consume contaminated fish.

Accumulation of methylmercury in fish tissue has forced downstream Tribes to recommend that their members stop eating culturally significant white sturgeon. Tribes need fish that aren’t contaminated by toxic methylmercury so they can maintain critical cultural tradition; hydropower companies in the region need cleaner water coming into and out of their facilities to secure future operating licenses; and agricultural producers need efficient, reliable, and flexible methods of watering crops that address growing costs, urban development pressures, labor shortages, and water insecurity.

Irrigation Upgrades

If the Snake River is to continue serving all these critical water uses, significant investment in water infrastructure is needed. Irrigation upgrades—such as converting from surface, gravity irrigation to pressurized sprinkler or drip irrigation—provide security and stability to agricultural producers while also reducing sediment and nutrient runoff, and reducing the production of methylmercury in the watershed.

To help thousands of farmers modernize their irrigation systems, partners in Oregon and Idaho are applying analytics to target outreach efforts to producers, coordinating multiple streams of funding, and simplifying the transaction process so that farmers can upgrade their infrastructure. The pathway to funding and implementing irrigation upgrades at scale has some obstacles. Irrigation upgrades are often a good long-term business decision for farmers: they reduce labor costs (the region faces a labor shortage), improve crop yields, and increase flexibility for producers. But these new systems have high up-front costs. Many producers need more financial assistance to make this transition than individual funding programs can offer. For many, taking on debt to finance the upgrade isn’t practical.

Investment

Public investment in irrigation infrastructure is essential to support adoption at the scale needed to support a resilient agricultural sector in the Snake River basin. Existing fragmented programs intended to support producers are slow and complicated, and, often, available funding is insufficient to cover the needs of producer. To motivate large-scale conversion, funds must arrive in the right amounts, at the right times, and with certainty and simplicity for producers and their suppliers. Put another way, farmers and partners need a buffer from the friction, risk, and uncertainty in the funding system.

Siloed Programs

Currently, no one individual or entity has the responsibility for solving this multi-sided funding and implementation challenge. The existing process-heavy funding system reduces the number of critical projects that can be supported annually. While many programs, if coordinated, could together provide enough financial support for producers to adopt a new practice, funds are stuck in siloed programs with conflicting timelines and outcome objectives. This is in part because each program tends to focus on different parts of the problem. For example, the Environmental Protection Agency (EPA) is focused on reducing methylmercury in this region; USDA’s Natural Resources Conservation Service (NRCS) Environmental Quality Incentives Program (EQIP) is focused on helping farmers and ranchers build more resilient operations; and Idaho’s Water Quality Program for Agriculture (WQPA) is focused on reducing phosphorus loads.

Irrigation upgrades produce all those quantifiable outcomes, but in practice, each program operates on its own. A central “aggregator” that follows the principles of the Watershed Outcomes Bank framework (*see* Benefits of the Bank Framework section above) is needed to change the status quo. In the Snake River, TFT is bringing together agency, tribal, utility, agricultural, local district, local business, foundation, and banking partners so that many producers can upgrade infrastructure, and so that we can meaningfully address the region’s major water challenges.

BUILDING A COORDINATED REGIONAL FUNDING AND IMPLEMENTATION SYSTEM

In 2023, TFT received a \$5.6 million EPA Toxics Reduction Lead award to formally organize the funders, procurement system, project prioritization analytics, and supply chain into a leveraged regional funding and implementation effort that can ultimately deliver ~\$210 million in priority irrigation upgrade projects across the Mid-Snake, and thus meaningfully address the region’s methylmercury challenge.

The EPA award enabled TFT and partners to build a system where funders of all types—whether or not they care about phosphorus reductions, mercury problems, or supporting farmers—can co-fund high-impact projects that deliver the results cost-efficiently.

Working Lands

TFT and partners are now using analytics to focus investments into four priority areas where irrigation upgrades can most effectively reduce phosphorus loads and agricultural runoff driving methylmercury: Lower Boise (Idaho), Payette/Weiser (Idaho), Malheur (Oregon), and Owyhee (Oregon). Across these priority areas, TFT and partners plan to implement approximately 2,100 new irrigation conversion projects over the next 10 years to achieve the reduction goal.

Solution

**IDENTIFYING WATERSHED TARGETS, PRIORITIZING PROJECTS,
AND DETERMINING THE OPTIMAL SOLUTION**

The 2004 Snake River Hells Canyon Total Maximum Daily Load (SR-HC TMDL)—prepared by Oregon DEQ and Idaho DEQ—established a total phosphorus limit of 0.07 mg/L at the inflow to Brownlee Reservoir for the May–September period. Based on detailed analysis completed with partners, attaining that inflow target will require an estimated additional annual reduction of 445,418 pounds of total phosphorus loading during the irrigation season.

Using BasinScout® Analytics, TFT has identified over 300,000 acres of agricultural land currently using surface gravity irrigation in the region that could be upgraded to precision irrigation (sprinklers or drip). For each project, estimated field-scale load reductions have been quantified using the Nutrient Tracking Tool (NTT). These field-scale analytics were aggregated and tested across thousands of simulated scenarios to assess the feasibility and projected cost of reducing 445,418 pounds of phosphorus load under different implementation conditions.

As a result of extensive scenario testing, TFT determined that the mean cost to achieve this load reduction target would be \$360 million (2023 \$). Using its analytics to target projects that cost-effectively reduced phosphorus load, TFT estimated the average cost of implementation to be \$211 million (2023 \$). In other words, as targeted recruitment success rates increase, the cost of achieving the overall remaining load reduction target decreases.

Quantifying Benefits

BasinScout Analytics

TFT uses its BasinScout® Toolkit to quantify the temperature, nutrient, water savings, and other project-scale benefits generated from projects. BasinScout converts the manual, data-intensive, field-by-field, benefit model calculation process into an automated process that can complete, in a single day, these calculations for thousands of fields across an entire geography. BasinScout automatically ingests and assembles multiple layers of data (e.g., crop type from USDA cropland and soil type datasets, field slope from US Geological Survey (USGS) digital elevation model); uses machine learning and satellite data to determine current land characteristics (e.g. irrigation type); and then digitizes agricultural field boundaries. For all fields in the Mid-Snake where an irrigation practice upgrade would be feasible, BasinScout runs the USDA-approved NTT model for the current flood irrigation condition and an assumed post-upgrade condition. BasinScout also provides sediment, inorganic mercury, and nitrate percolation reduction values for each potential project. BasinScout then calculates a project cost for each potential upgrade, which is combined with improvement values to develop a “\$ per reduction” rank for each potential project. This information is then used to identify an overall funding and implementation plan, to inform priority project recruitment and establish timelines and sequence.

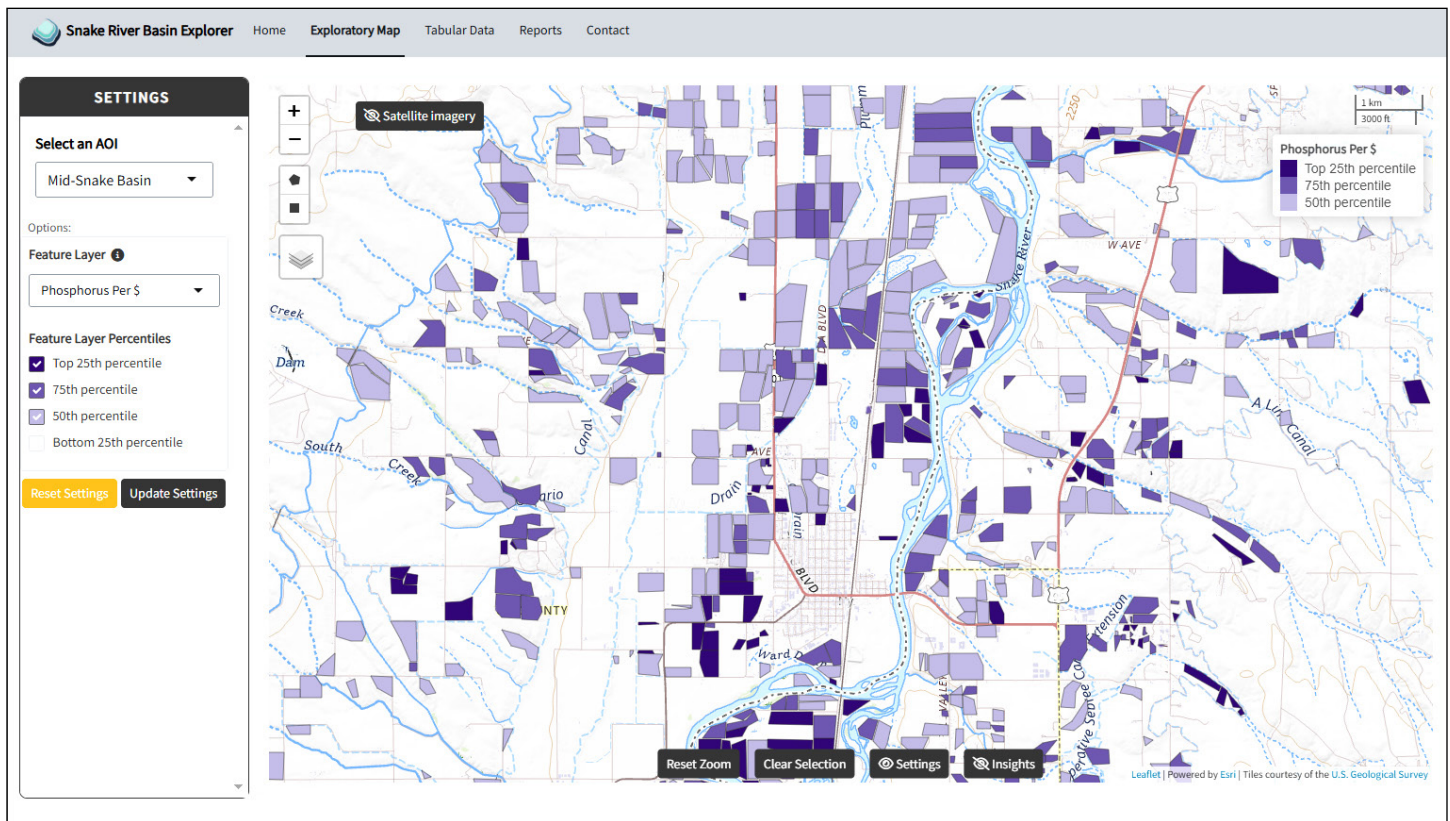


Figure 1. Analysis of more than 300,000 acres of agricultural fields demonstrates the potential for reducing excess phosphorus runoff from each field and pinpoints which combination of fields could be upgraded to precision irrigation, arranged and ranked in percentiles of reduction per dollar.

Working Lands

In addition to total phosphorus, TFT quantified the sediment, nitrogen, inorganic mercury, and water demand reductions associated with irrigation upgrade projects. This information enables IPC, EPA, and NRCS to participate as funders, and makes it possible for other utilities regulated by the Clean Water Act to join. By ensuring that these projects are quantified in multiple ways relevant to local NRCS, we help ensure that NRCS—and its \$6 billion per year in Farm Bill conservation funds—can support these projects.

“Our agreement with The Freshwater Trust provides us with a crucial analytics tool to be strategic in using our funds to aid agricultural producers with the implementation of conservation actions that address SWAPA-H (soil, water, air, plant, animal and human) issues. To aid us in the obligation and implementation of conservation dollars, NRCS must look to the future and use modern tools to help us to be the most strategic and helpful to our customers, the private landowners of Oregon.”

—Damon Brosnan, Assistant State Conservationist for Field Operations at NRCS Oregon

Assessments

To help ensure that Oregon NRCS can direct its support for producers to these high-priority projects, TFT is providing the agency with quantifiable assessments of potential irrigation upgrade actions in three eastern Oregon watersheds. These assessments identify specific projects that can cost-effectively reduce nutrient and sediment runoff while also allowing farmers greater operational flexibility. This insight provides NRCS staff and regional partners with the detailed information they need to prioritize and pursue projects that create the greatest runoff reduction benefits for the lowest cost.

CATALYZE THE EXISTING SUPPLY CHAIN TO RECRUIT THE BEST PROJECTS

Delivering this volume of projects fast is possible only by tapping into the existing equipment and services supply chain that producers already use. Irrigation equipment suppliers already work with producers every day. With BasinScout project prioritization data, TFT can support these relationships by enabling suppliers to offer technical assistance and streamlined funding offers to producers with priority projects.

Suppliers

Working Lands

“Many of the producers we speak with every day would like to convert to precision irrigation, but the switch can be expensive upfront. Public incentive programs are often required for small and medium sized family operations. The inconsistent timelines for solicitation, review, selection, and funding associated with these programs make participation time-consuming, expensive, and unpredictable for suppliers like us and producers. As a result, a lot of latent project demand never materializes before the next growing season starts. Over the years, we have seen many potential projects fail because of cashflow realities and incentive program timelines. If we could get program timelines, cashflow realities, and funding certainties to line up, we see huge potential to scale up irrigation upgrades in the Mid-Snake.”

—Kurt Romans, owner of Romans Precision Irrigation

Subsidies**SECURE AND AGGREGATE FUNDING FOR IRRIGATION UPGRADES**

Converting \$211 million into priority irrigation projects is no small task. To secure increased adoption of irrigation upgrades by producers, TFT estimates that an average subsidy of 75% will be required. This means that TFT and partners must secure and deploy ~\$180 million of subsidy dollars to priority projects (value includes estimated inflation). Given that most funding programs currently require or recommend match funding, TFT has undertaken an effort to help secure, match, and leverage multiple funding sources together.

“Idaho Power Company funding is crucial, but on its own, it’s not enough to significantly reduce methylmercury production in the Snake River basin. Idaho Power is committed to participating in and helping expand this strategic funding program.”

—Brett Dumas, Director of Environmental Affairs at Idaho Power Company

Planning

TFT is supporting the development of IPC’s CWA methylmercury compliance plan, which would add an estimated \$100 million in funding for irrigation upgrades that reduce phosphorus loads to the Snake River system. Pursuant to a conservation technical assistance agreement with Oregon NRCS, TFT is working directly with Oregon NRCS to pair EQIP applications with supplemental IPC and/or EPA funds on projects that reduce phosphorus load.

TFT is also planning to support the Lower Boise Watershed Council and Canyon County Soil Conservation District to find co-funding opportunities with the 319 program they co-manage. The 319 program refers to section 319(h) of the Clean Water Act. All 319 funds are provided only to designated state and tribal agencies to implement their approved nonpoint source management programs. State and tribal nonpoint source programs include a variety of components, including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and regulatory programs.

OFFER PROJECT FINANCING THAT WORKS FOR PRODUCERS AND SUPPLIERS

Cashflow issues can be a barrier for producers when considering how to pay for new practices or equipment. To get equipment ordered and ready for installation, producers must sign installation contracts with local irrigation dealers, which usually require down payments. Funding programs are often based on reimbursement, requiring producers and suppliers to cover the full cost of a project before financial assistance is delivered, which can take many months or years. This is too big a cost for suppliers to bear, and producers do not always have the free cash or access to financing necessary to cover the up-front investment.

To alleviate that issue, TFT is developing a down payment assistance program modeled on the Soil & Water Outcomes Fund and Forest Resilience Bond models. In short, a charitable foundation would act as a guarantor, which would allow TFT to secure a project line of credit. The line of credit would allow TFT to help producers and suppliers cover the down payment so that installation contracts could be signed on time. TFT then would get paid back by securing reimbursements from the various funding sources after projects were completed. This bridge financing mechanism would cover a critical cashflow gap for producers and suppliers and, thus, increase the number of projects executed.

Down Payment Assistance**DELIVER MORE FUNDING TO MORE PROJECTS, FASTER**

In addition to the prioritization analytics agreement, TFT has a conservation technical assistance (TA) agreement with Oregon NRCS to support the agency in recruiting, designing, and moving priority projects through the agency’s rigorous screening, design and compliance processes. By working closely with regional irrigation suppliers, NRCS-certified technical service providers (TSPs), and certified archaeologists, TFT can drive more projects to the point of being implementation-ready and significantly reduce the time between when producers enroll in a program and when projects are implemented.

Working Lands**Technical Assistance**

To ensure that this increased volume of projects does not overwhelm NRCS capacity, TFT has assembled a skilled team to deliver all necessary TA services and documentation. We have access to highly experienced irrigation practice providers under the TSPs contract. Irrigation equipment suppliers with existing relationships and decades of experience are also partners in this program. Under contracts with TFT, these suppliers will conduct targeted outreach and capture the on-site data needed by NRCS. Our partner TSPs have existing relationships with suppliers and use NRCS-specific design templates to develop NRCS-compliant projects. Our TSPs oversee design development with suppliers, help secure adequate NRCS Inventory & Evaluation Checklist documentation, flag cultural resource or environmental compliance issues, iterate designs with suppliers and producers, and provide professional engineer approval. TFT has hired archaeological firms to perform cultural resource surveys and produce documentation for NRCS and required State Historic Preservation Office (SHPO) and tribal consultation processes. Lastly, our in-house legal team will assemble draft environmental compliance documentation for NRCS using data collected from field partners and will draft producer contracts. By actively driving and integrating these steps, TFT is able to significantly reduce the time it takes for projects to get approved and implemented and push a greater number of projects through the system.

“With the analytical insight in place, the next logical step is to bolster NRCS and partner capacity to get these priority projects funded and implemented.”

—Damon Brosnan, Assistant State Conservationist for Field Operations, Oregon NRCS

**TRACK PROJECTS, BENEFITS, AND FUNDERS, AND THEN
MANAGE FUNDER REIMBURSEMENT AND PAY BACK DEBT**

The patented TFT software StreamBank® (StreamBank Administrative Toolkit or SB Admin) is used to automate workflows, centralize document storage (e.g., project designs, permits, contracts, monitoring and verification reports), track project and program progress, and automate reporting. Since 2015, SB Admin has been used to support IPC’s \$350 million watershed restoration program for CWA temperature compliance. TFT has also customized SB Admin to automate data collection, document production, and workflows so that NRCS district offices get the documents they need, in the right format, for review and approval.

As projects are completed and documentation is stored and outcomes quantified, TFT then seeks reimbursement and payment from funders. This funding will be used to pay off the line of credit TFT used to provide down payment assistance to producers. Importantly, by the time this happens, producers will have completed projects they can use, and suppliers will already have been paid—the Bank arrangement effectively buffers these key partners from the friction, sluggishness, and complex process of the conservation funding system and lets them focus on their primary business of growing food.

EVALUATE PROJECT IMPLEMENTATION

It is critical to ensure this big investment delivers necessary results. However, because the toxin methylmercury bioaccumulates over time, changes in the rate of accumulation in long-lived fish tissue are very difficult to measure. To better understand trends over time TFT is working with partners on three fronts to quantify results of irrigation investments.

First, before priority irrigation projects are implemented, TFT will document pre-project conditions and then use BasinScout to quantify reductions in post-project phosphorus, sediment, and GHG.

Second, TFT has received a \$1.9 million award from EPA Region 10 to work with Oregon State University (OSU) and the US Geological Survey (USGS) to understand how methylmercury levels are changing in dragonflies within the watershed. Dragonflies are sentinel species, and they can be used to detect changes in toxin levels on shorter timescales because of their short life spans. This effort will result in detailed monitoring and the development of a national-scale predictive model for mercury in dragonflies.

Third, IPC’s proposed mercury management plan includes regular monitoring of mercury levels. IPC proposes collecting inflow and outfall concentration samples across Hells Canyon Complex reservoirs. Within the Hells Canyon Complex, Brownlee Reservoir is the key driver of methylmercury dynamics (because of the size and scope of anoxic environments that develop in the reservoir. IPC will profile sample Brownlee consistently throughout the year. Smallmouth bass fish tissue will also be sampled with the goal of documenting long-term temporal changes. Sturgeon tissue will also be sampled at five-year intervals. Fish tissue samples will be assessed at the USGS Laboratory in Corvallis, Oregon. IPC is also required as part of IPC’s CWA section 401 certification to develop numerical models capable of simulating mercury conditions in water, sediment, and biota. Those models are currently under development.

Cashflow Buffer**Monitoring Process**

Working Lands

California Pilot: “Sierra to Sea” Watershed Outcomes Bank

In Northern California, a 3,804-square-mile area—referred to as the Sierra to Sea region—drains from the Sierra Nevada mountains in the Eldorado National Forest (NF) through the American, Cosumnes, and Mokelumne rivers, and out to the Pacific Ocean. These rivers converge southwest of Sacramento, flow through the agricultural lands of the Sacramento–San Joaquin River Delta, and drain through the Bay–Delta Estuary into the San Francisco Bay. This region supports California’s largest drinking water supply, numerous urban and rural communities, and highly productive but drought- and flood-prone agricultural areas.

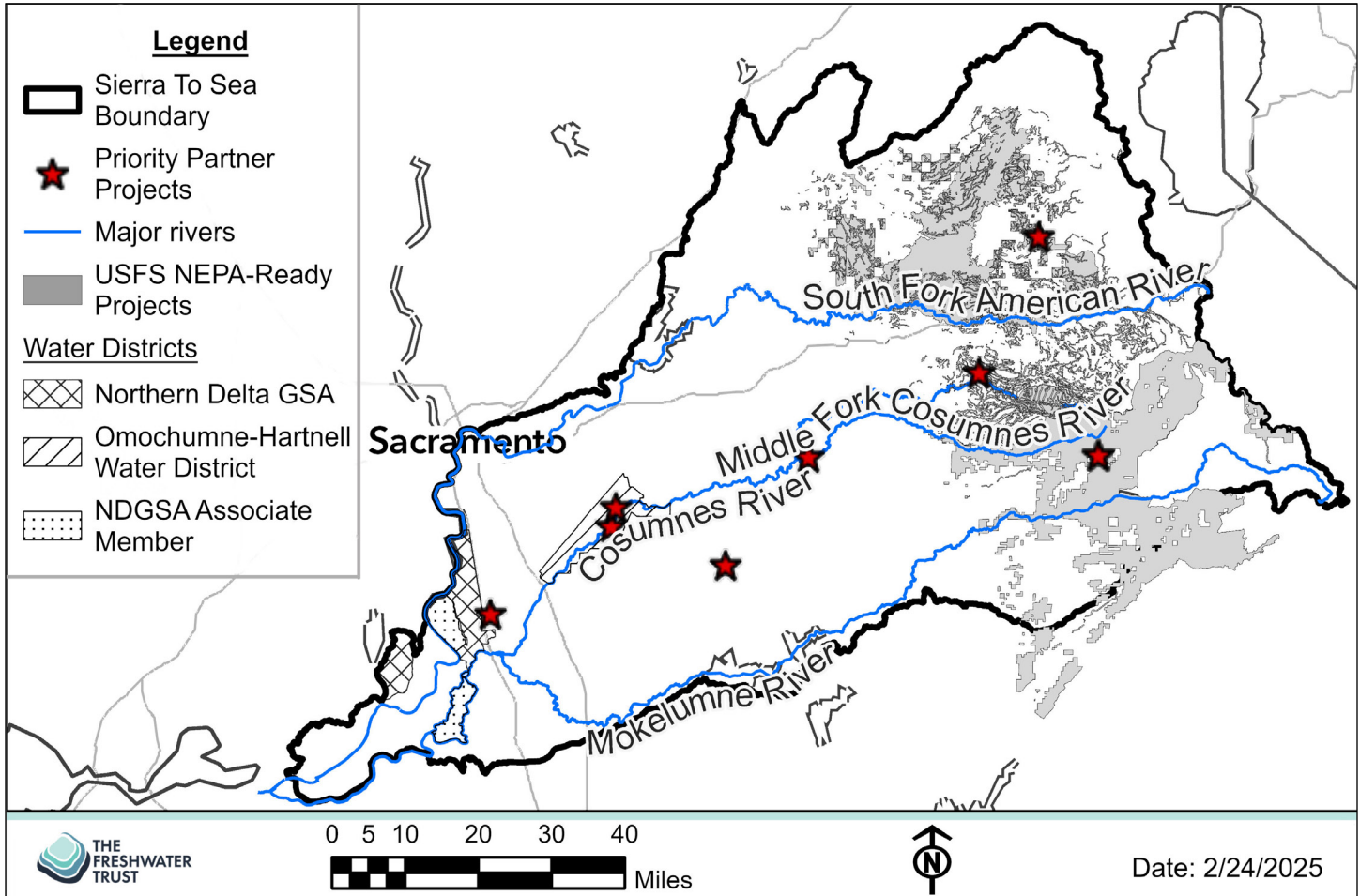


Figure 2. The Sierra to Sea focus area for the California Watershed Outcomes Bank pilot includes priority projects identified by partners in the watershed. Projects include various forest management practices, habitat restoration, groundwater recharge, agricultural water use efficiency, improved watershed data management, and capacity building and planning.

Risks

In the lower part of the region, heavy groundwater pumping for agriculture and urban development has increased the cost and risk of reliably securing drinking water and growing crops. As groundwater supplies shrink, many lower-lying areas in and around the Delta are at high risk of saltwater incursion and sea level rise. In the middle watershed, larger precipitation events are increasing flood intensities, and groundwater supplies continue to decrease. In the headwaters, the Eldorado NF has been ravaged by fires—including the 222,000-acre Caldor Fire in 2021—and it contains densely forested portions that remain at high risk of catastrophic wildfire. In the last five years, major droughts, fires, and floods in this region have led to the destruction of major property and infrastructure, billions of dollars in lost crops, and loss of life.

As a result of years of collaborative efforts, many important yet siloed conservation efforts are underway across the region. In the headwaters, partners have secured \$75 million to reduce fire risk and restore burned areas. In the middle watershed, local districts, farmers, nonprofits, Tribes, and communities have been working to efficiently achieve the goals of California’s Sustainable Groundwater Management Act (SGMA), improve water storage potential, mitigate flood risks, and improve capacity of the floodplain. In the lower watershed, \$292 million has been secured to deliver recycled water to

Working Lands

farmers to replace groundwater pumping for irrigation water; implement conservation practices on thousands of acres of working lands; and rectify a major cone of depression in groundwater that impairs the Cosumnes River.

Integrated regional results have been elusive because of the same challenges that are faced in other regions like the Snake River: splintered working lands programs and funds, burdensome matching requirements, non-uniform success criteria, and heavy process that prevent many projects from being implemented quickly. Using grants from the US Endowment for Forestry and Communities' Innovative Finance for National Forests (IFNF) Program and Blue Forest Conservation, TFT and partners have designed and are now piloting a Watershed Outcomes Bank in this geography (*see* The Watershed Outcomes Bank section above for the steps taken).

In this region, TFT has also assumed the role of an aggregator by working hard to bring together the following partners and pieces so that we can cost-effectively achieve regional improvement targets.

BUILDING A COORDINATED REGIONAL FUNDING AND IMPLEMENTATION SYSTEM**Current Funding**

The partners agree that landscape-scale investment in working lands—not our current project-by-project, funder-by-funder approach—is needed to adapt to the fire, drought, and flood risks resulting from climate change in this region. To date, interagency block grants (e.g., Sierra Nevada Conservancy's [SNC] landscape block grant pilot program), joint power authority (JPA), or multi-county models (e.g., Cosumnes Groundwater Authority or Integrated Regional Watershed Management Program) have not unlocked results at speed and scale. This is because funding remains too fragmented to leverage and match across the region; common metrics are not available to unite partners around priority projects; and operating a JPA or block grant at the intergovernmental level is too complicated.

"We have so many outcomes to look forward to by working together and bridging the current gaps in funding streams like creating jobs and attracting a sustained workforce, generating Tribal co-stewardship opportunities, and contributing to the protection of agriculture, utilities, and infrastructure. By working together, we're creating a resilient and fire-adapted landscape for everyone."

—Michelle Wolfgang,

Partnership Coordinator for the USDA Forest Service's Eldorado National Forest

In response to these challenges, the Healthy Eldorado Landscape Partnership (HELP) and TFT have developed a Watershed Outcomes Bank, which will allow partners from the upper, middle, and lower watershed areas to leverage and integrate their efforts across the region.

To launch the Bank, the US Forest Service and TFT are negotiating a master participating agreement, which will include a charter that partners from across the watershed will sign. In the charter, partners will be asked to commit to: 1) using the same metrics to help prioritize project funding and work in pursuit of watershed targets, 2) prioritizing the highest-scoring projects throughout the watershed, 3) jointly pursuing funding and collectively leveraging those funds through a Bank managed by TFT, 4) using financing to get funding to projects and partners on time, and 5) continuously working together to maximize working lands outcomes through coordinated implementation.

IDENTIFYING WATERSHED TARGETS, PRIORITIZING PROJECTS, AND DETERMINING THE OPTIMAL SOLUTION

The Sierra to Sea region contains a broad and diverse range of challenges, communities, and needs in a relatively small area. In the absence of an organized approach, the diversity of options and needs can make it difficult to prioritize investment or integrate efforts.

Within HELP, the partners focused on identifying key metrics that could link together preexisting improvement targets, a core group of project types/treatment actions needed in the region, the Tahoe-Central Sierra Initiative (TCSI) "10 Pillars of Resilience," and the needs of key state and regional funders. This team focused also on metrics that could be readily quantified using available data and models and meaningfully tracked at the project and landscape level. The five core metrics that fit all those funding- and implementation-related criteria are:

Metrics

- Water volume improvements (acre feet/year)
- Water quality improvements (tons/year of sediment loading avoided)
- Greenhouse gas reductions (tons of carbon dioxide equivalent stored or avoided)
- Fire risk reduction (acres treated as a proxy for reduction in flame length)
- Flood risk reduction (% reduction in water celerity)

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For each metric, the team then identified quantifiable watershed improvement targets. These targets were developed through communication with local stakeholders and in review of primary and secondary literature focused on resource management across the watershed:

Benefit	Avg annual target	Acre Feet/ Yr	Source
Water Volume Improvement	112,000	Acre Ft/Yr	Derived from Fleckenstein et al., 2004
Water Quality Improvement (Avoided Sediment Runoff)	3,029	Metric Tons Sed/Yr	USGS SPARROW model and the US EPA National Rivers and Streams Assessment Report
Wildfire Risk Reduction	5,000	Acre/Yr	US Forest Service – informal feasibility assessment
Greenhouse Gas Reduction	14,693	Metric Tons/Yr	Sacramento County Climate Action Plan 2030 goals (portion attributable to water/agriculture)
Flood Risk reduction	N/A	% Reduction in Celerity	This is a relative metric, not an absolute target. TFT is applying a modified “Muskingum” method to determine how different combinations of projects in the watershed can best dissipate flood flow energy.

Action Types

Based on a survey of experts, the team also identified a group of regional projects or treatment action types that matter to stakeholders and are feasible, desirable, and known to be effective in the region: 1) managed aquifer recharge, 2) on-farm irrigation efficiency upgrades, 3) long-term agricultural land conservation, 4) riparian corridor restoration, 5) floodplain restoration, 6) pre-fire forest stand density management, and 7) post-fire restoration (slope and ground stabilization, meadow restoration, and riparian restoration).

Solver Tool

For each project type/treatment action, the team then quantified each of the above benefits, estimated the project costs, and estimated the overall potential “supply” of those actions—or the number of feasible projects—for the region. With targets, cost and benefit data for each project, and available supply, the team then used a “Solver Tool” built by TFT and Radbridge to develop an optimized solution recommending the volume of each project type/treatment action needed to achieve resilience targets in the most cost-effective way.

Optimal Actions

Based on current targets, the estimated “supplies” of actions, and the cost–benefit ratios for those actions, the Solver Tool identified an optimal solution for \$253 million. This solution includes 5,000 acres of managed aquifer recharge, 5,640 acres converted from flood to sprinkler irrigation, 1,880 acres converted from flood to drip irrigation, 6,900 acres of conservation land leasing, 500 acres of near-stream restoration, 27,700 acres of contracts with agricultural landowners to allow rain to infiltrate into the groundwater table (instead of diverting to runoff), 300 acres of wetland restoration, and the implementation of 5 permitted forest treatment/restoration projects in the headwaters.

With this high-level project portfolio solution identified, more field-scale “precision analytics” can be developed to identify the specific locations where projects/treatment actions can be targeted to best deliver multiple benefits for the least cost.

Multiple Benefits

This approach offers a pathway for cost-effectively securing results because it specifically quantifies the multiple benefits of projects and links them to overall targets. For example, pre-fire stand density management reduces fire risk but can also create water savings (from reduced uptake of water by overcrowded vegetation) and reduce GHG potential over the long term. As another example, by moving peak flood flows out of the river and onto adjacent farmland that has high groundwater infiltration potential, two critical objectives can be achieved for the cost of one project. These examples highlight the previously unaccounted secondary benefits of projects that can now be quantified and valued (and, thus, more effectively sold to more funders), which helps ensure that the highest-impact projects in the watershed will be implemented first.

WORK WITH PARTNERS TO DEVELOP PRIORITY, IMPLEMENTATION-READY PROJECTS

With the direction provided by the Solver Tool, the partners have identified an initial tranche of priority projects for which to collectively pursue funding. These projects include forest density and restoration projects, removal of damaged flood control structures, agricultural irrigation upgrades, and flood flow/groundwater recharge projects. Additionally, the partners are seeking funding to support continued project development and improved data collection. Instead of waiting for individual project-by-project funding applications to come out, the partners are pursuing this broader portfolio of projects together to maximize impact, better match and leverage funds, and demonstrate how to regionally connect funders, projects, and benefits.

Working Lands**Awards****SECURE AND AGGREGATE SILOED FUNDING FOR RESILIENCE PROJECTS**

To date, partners across the region have successfully secured approximately \$166 million in funding to increase resilience in the region. In the upper watershed, HELP partners have secured \$45.3 million to restore the area burned by the Caldor Fire, \$12 million to restore/reduce fire risk in the Crystal Basin, and ~\$17.6 million for thinning and restoration work in the Mokelumne Amador Calaveras project area. In the lower watershed, Sacramento Sewer has secured \$200 million to deliver recycled water to farmers and \$90 million to implement the EcoPlan portion of its \$600 million Harvest Water program, which is aimed at fixing a groundwater cone of depression that impairs the Cosumnes River. Additionally, the Omochumne-Hartnell Water District (OHWD) is implementing managed aquifer recharge projects using flood flows, supported by corporate sustainability buyers—corporations who invest in projects so that they can claim progress against their public sustainability targets. Lastly, the US Bureau of Land Management (BLM) has invested \$300,000 to remove a major fish passage barrier in the middle watershed. To truly scale, now we must integrate and leverage these efforts.

“Our groundwater recharge project has been a great way for OHWD to contribute to groundwater replenishment and reduce flood risk in the region. We are excited by the opportunity to integrate and scale up our program and help attract more funding into the region.”

—Mike Wackman, General Manager of OHWD

To that end, a diverse collection of watershed partners are pursuing \$75 million in coordinated funding from California’s recently passed \$10 billion Climate Bond. If they are successful, the funding would be directed from ten currently isolated Climate Bond programs into the regional Bank, allowing the deployment of those funds to a regionally integrated group of priority projects. By organizing in this way, the partners are trying to reaggregate a currently fragmented funding ecosystem into a coordinated regional funding and implementation effort that delivers bigger, faster, more cost-effective results. Instead of competing for scarce grant resources under individual program funding solicitations, the partners are betting that by working together, they can deliver more, faster, and attract bigger funding amounts in the future.

WORKING CAPITAL TO HELP GET MORE PROJECTS ON THE GROUND

As more funds are secured and managed through the Bank, the consolidated funding commitments in the Bank can be used as collateral to secure watershed-scale working capital. In the current system, individual groups or landowners must manage timing, cashflow, and operational uncertainties on their own. In contrast, with financing secured at the program level, project funds can be delivered up front to partners, contractors, and landowners simply and on time. This approach reduces transaction costs, complexity, and uncertainty, allowing the partners to focus their efforts on what they do best: developing relationships and projects.

“This is an interdisciplinary and integrated problem. It requires a good understanding of the science and infrastructure and policy involved, but also where the funding and financing can come from. We cannot keep chopping up the whole into small pieces and expect that scattershot investments will solve the problem.”

—Nick Wobbrock, Co-Founder & Chief Conservation Officer at Blue Forest

Much like the Snake River Watershed Outcomes Bank example, the Cosumnes-Caldor financing model attempts to overcome two structural impediments to accessing up-front capital: 1) not having enough secured funding commitments to pay back the debt; and 2) having all the potential sources of money stuck in small chunks across multiple organizations instead of with a single consolidated borrower. By focusing on securing loan guarantee and/or interest expense subsidies from foundations and/or public agency lenders, we help overcome these credit access challenges. Conversations are ongoing with the California CWSRF program, private foundations, and the Blue Forest Catalyst Fund about how to combine forces to produce low-cost, flexible capital to support working lands projects here.

DELIVER MORE FUNDING TO MORE PROJECTS, FASTER

In California, one of the key challenges associated with projects is permitting. By working early on with agencies to identify potential priority projects that can cost-effectively achieve outcomes and obtain permits (or are on that pathway), project work can be significantly expedited. By working at the regional level, the partners are better equipped to pursue programmatic permits and seek help from the state to cut red tape.

Delivering Funding**Permitting**

Working Lands**TRACK PROJECTS, BENEFITS, AND FUNDERS, AND
MANAGE FUNDER REIMBURSEMENT AND PAY BACK DEBT**

Through its IFNF grants, TFT has been customizing SB Admin to automate data collection, document production, and workflows so that the Toolkit is ready to support this increased volume of work in the Sierra to Sea region.

Tracking Impacts**EVALUATE PROJECT IMPLEMENTATION**

All too often, once projects have been implemented, there isn't sufficient funding or attention to ensure that the investments are delivering the anticipated results. In addition to quantifying and tracking project outcomes in the key metrics described above, the partners plan to add more monitoring instrumentation in the region so that they can collectively improve the ability to measure the outcomes arising from actions. For example, forest thinning reduces the volume of water taken up by trees, but how much of the saved volume makes it instream and travels downstream to water users facing scarcity issues? Will the saved water volume be sufficiently large and sufficiently predictable to support a transaction? To help answer those questions, the partners have requested Climate Bond funds from the California Department of Water Resources to install a more robust stream gage network that will be better able to detect such changes.

What Comes Next?

Even with innovation, we still must upgrade policy to enable bigger, faster, and more effective conservation investment. As extensively documented in this article, we need robust investment in working lands, but our current investment approach is inefficient, fragmented, and tangled in red tape. Smarter, more effective working lands investment would significantly improve government efficiency while bolstering American food security and reducing flood and fire risks.

Recommendations

The Watershed Outcomes Bank approach offers an innovative solution, but it is currently difficult to replicate. To transition from a handful of pilots to sector-wide success, we must make some structural policy changes. To make those needs and opportunities more specific, this article summarizes three aligned federal policy change efforts with US EPA, US Bureau of Reclamation (Reclamation), and USDA NRCS. Each of the following sections offers suggestions to help the designated federal agency better prioritize and leverage its conservation investments, more easily coordinate and integrate across agencies, streamline the funding and implementation process, and enable market-like solutions. Each effort focuses on the components in control of that agency and uses agency-specific language, but all pursue the same core mechanics of the Watershed Outcomes Bank: 1) using uniform quantification metrics and tools to prioritize investment in the best projects, 2) aggregating funding into a regional/watershed hub responsible for matching up funds with projects, and 3) delivering that funding more quickly to projects on the ground through streamlined procurement mechanisms.

**EPA: ORGANIZING ITS FUNDING, FINANCING, AND COMPLIANCE TOOLS TO CATALYZE INCENTIVE-
AND OUTCOMES-BASED WATERSHED SOLUTIONS WITH AGRICULTURE****Nutrient
Contamination**

Most of America's rivers, streams and lakes are in fair to poor condition, a state largely attributable to nutrient contamination from nonpoint sources (NPS). As the national agency charged with securing clean water, EPA has spent decades regulating, funding, and trying to improve water quality, but the CWA does not directly regulate NPS. Because of the persistence of NPS nutrient contamination, EPA has expressed a growing interest in scaling up a voluntary, incentive-based approach that enables farmers to manage their land in ways that generate more food, higher profits, and better water quality outcomes.

Nonpoint Sources

In 2022, EPA and partners initiated the Nutrient Funding Discussion Group (NFDG) to identify the current impediments to investing at scale in NPS contamination reduction projects, and then to identify how EPA can organize and deploy its funding, regulatory, and financial tools into a technology-driven and outcomes-based framework to secure watershed-scale results. The NFDG was co-managed by TFT and the EPA Office of Water. The group also included Blue Forest Conservation, Electric Power Research Institute, Environmental Policy Innovation Center, Family Farm Alliance, National Association of Clean Water Agencies, and Soil & Water Outcomes Fund.

The NFDG specifically focused on converting the following elements from EPA's April 5, 2022 *Accelerating Nutrient Pollution Reductions in the Nation's Waters* Memorandum (2022 Nutrient Memo) into action:

- "Deepen [EPA's] collaborative partnerships with USDA and the agricultural community.
- Target funds whenever feasible to the locations and practices that will generate the most significant reductions in nutrient loads.

Working Lands

- Deploying advanced watershed planning tools to identify critical source areas, track practice adoption, and quantify progress over a broad landscape [or] large watershed ...
- 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.
- Championing innovative financing and using the flexibility of the CWA 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.”

The NFDG first identified the funding, jurisdictional, and practical obstacles that currently suppress NPS project investment at scale. Next, the NFDG outlined specific actions that could integrate EPA’s watershed, regulatory, financing, and funding tools into a replicable framework capable of catalyzing watershed-scale nutrient improvements from NPS.

Overcoming Obstacles

In response to the obstacles described throughout this article, the NFDG identified the five structural elements that “watershed financing partnership” solutions needed to overcome these obstacles:

1. **Aggregation:** A project and funding aggregator brings together multiple, otherwise-siloed funding streams, identifies high-return projects, and secures projects.
2. **Quantification:** Project benefits are modeled in uniform environmental units (e.g., nutrient load, greenhouse gases, water quantity improvements) that can be verified, tracked, and transacted for multiple funders. Having all these “currencies” available makes it easier to leverage the otherwise-siloed funding streams to support the same key NPS projects.
3. **Certainty:** Build market certainty by securing and packaging multiple funding streams (e.g., regulated utility, agency grant, corporate) to “buy” the high-return NPS outcomes identified through the quantification process.
4. **Timing:** Secure up-front financing so that funds get to projects at the right time for producers.
5. **Simplicity:** Transact via a simple agriculture-facing model that minimizes costs for producers.

WFP Framework

In 2024, the NFDG released a Draft Action Plan that outlined a proposed framework that would enable watershed financing partnerships (WFPs) to efficiently structure, secure funding for, finance, prioritize, and expand watershed-scale funding and implementation efforts across the country. This plan was intended to empower bigger, faster NPS results and more effective, rapid achievement of Clean Water Act goals. The WFP framework is effectively the same as the Watershed Outcomes Bank framework.

A sampling of those action items is listed below, some of which EPA has started implementing:

- **Proposed action 1(B):** “EPA could fund a ‘watershed financing partnership’ pilot program that offers capacity grants and support to WFP program aggregators...”
- **Proposed action 1(C):** “EPA could amend existing 319 program 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 part of the 50% of 319 funds that must be spent on watershed projects that implement watershed-based plans.” EPA amended its 319 guidance in 2024 to allow this approach (EPA 2024 391 Guidance, chapters 2.6, 6.3.3, and 11.2.2).
- **Proposed action 2(B):** “EPA could encourage the consistent use of science-based tools, such as USDA’s Nutrient Tracking Tool and COMET-Planner Tool, when implementing a WFP approach to provide quantification consistency, facilitate better integration with USDA [] efforts, identify multi-benefit project opportunities, verify project benefits, support outcomes-based compensation and simple outcomes-based contracts with agricultural partners, and track results.” In a January 2025 EPA-NRCS MOU, the agencies similarly resolved to “identify mutually beneficial opportunities to leverage agency-specific data within these datasets for improving program delivery and performance metrics through strategic inter-agency sharing of select data and co-aligning data models, assessment tools, and data visualizations where possible...”
- **Proposed action 2(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

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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).”

- **Proposed action 3(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 commitments 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.”
- **Proposed action 3(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...”
- **Proposed action 4(D):** “EPA could recommend that state CWSRFs increase utilization of programmatic financing 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.”
- **Proposed action 4(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 subsidies or sponsorship options that are triggered once defined watershed outcomes have been achieved (e.g., secure at least X lbs of nutrient load reductions from NPS 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.”
- **Proposed action 5(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...”

BUREAU OF RECLAMATION: LAUNCH THE WATERSHED RESULTS ACT PILOT PROGRAM

Similar to the EPA effort, but with a focus on Reclamation’s water delivery authorities, the Watershed Results Act (WRA) would establish a pilot program for designing, funding and implementing watershed solutions that: 1) use uniform quantification metrics and tools to prioritize investment in the best projects, 2) aggregate funding into a regional/watershed hub responsible for matching up funds with projects, and 3) deliver that funding much quicker to projects on the ground through streamlined procurement mechanisms.

The Watershed Results Act (S. 2169 in the 118th Congress) was first introduced in 2021 by Senator Wyden and was reintroduced in 2023. After extensive bipartisan, agency, and stakeholder engagement, the WRA cleared markup in the Senate Environment & Natural Resource Committee on bipartisan voice vote in November 2024. The WRA would authorize up to five pilot watersheds led by “watershed outcome partners” (e.g., “watershed financing partnership” terminology used in the EPA context). With \$17 million per year in authorized appropriations to launch and scale the pilots over the five-year term of the WRA, these partners would lead watershed outcomes projects on behalf of Reclamation to carry out a series of activities that would “achieve meaningful watershed-scale outcomes.”

Once selected by Reclamation, watershed outcome partners would be responsible for completing analytics that would assess the costs and outcomes associated with potential conservation projects in the watershed. In the WRA, outcomes are defined as “quantifiable and verifiable increases in surface water or groundwater, increases in aquatic habitat quality, quantity, connectivity, or access in a watershed, and surface water or groundwater quality improvement.” The partners would also need to determine which potential conservation projects could produce the greatest outcomes for the least cost. Because this project data is meant to help identify and fund voluntary conservation projects, the WRA stipulates that data developed and collected is to be restricted to project-related uses and is classified as confidential commercial information for the purposes of the Freedom of Information Act (FOIA).

Watershed Results Act

Costs & Outcomes

Working Lands**Responsibilities**

Partners would also be responsible for the following: developing project quality standards to help ensure consistent and expedited approvals, recruiting and designing priority conservation projects identified by the analytics, contracting with landowners, securing additional leveraged funds, verifying activity outcomes, monitoring activities, and tracking and reporting on results. To appropriately incentivize high-impact project participation, and to expedite the delivery of payment (versus standard cost-based reimbursement), partners would be able to make “performance payments” once projects are confirmed as having been implemented consistent with project quality standards and outcomes have been quantified.

Performance Payments

Performance-based payments compensate an entity for completing a milestone or delivering a good. Instead of reimbursing an entity for costs incurred—which is how most public conservation dollars work—performance-based payments compensate an entity for delivering a thing of value, regardless of how much it cost that entity to deliver. If a deliverable or outcome is more valuable, the compensation received is higher. This arrangement rewards cost-efficiency and results, whereas cost-based reimbursement incentivizes an entity to spend every dollar regardless of whether it is needed. *See* Federal Acquisition Regulations subpart 32.10 and 2 CFR 200.201(b) “fixed amount awards” for more information.

To help enable more simplified funding and coordination, the WRA also creates several flexibilities. Recognizing that federal funds are often the biggest source of funding but that they are fragmented across multiple programs, the WRA authorizes an overall federal contribution cap of 75% for watershed pilots. In addition, the funding authorized in the WRA can be used to satisfy any other federal match funding requirement.

NRCS: UPDATE THE REGIONAL CONSERVATION PARTNERSHIP PROGRAM

Annually, USDA is the largest investor in conservation in America. It is, therefore, critical to ensure that Farm Bill programs are impactful. One of the best ways to do that is to improve the Regional Conservation Partnership Program (RCPP).

To help enable partners to scale regional efforts, the 2014 Farm Bill added RCPP. The original, or Classic, RCPP allowed partners to aggregate conservation contracts for NRCS under its existing conservation programs (e.g., EQIP). The 2018 Farm Bill elevated RCPP into a stand-alone program, provided \$300 million per year in funding, and created an alternative funding arrangement (AFA) track to catalyze innovative projects. AFAs were specifically designed to help “achieve conservation benefits on a regional or watershed scale” and address concerns “such as drought, wildfire, or water quality impairment” by using “innovative approaches to leveraging the Federal investment in conservation with private financial mechanisms ... such as the provision of performance-based payments to producers; and support for an environmental market” (16 USC 3871c(d)).

As envisioned, under AFAs, the lead partner would work directly with producers to develop new conservation projects, payment structures, and delivery approaches. Unfortunately, this aspiration has not yet been realized. RCPP deployment has been slowed by complex administrative requirements, delays in contracting, heavy process, complicated technical assistance structures, and cumbersome reimbursement approaches. Instead of realizing the efficiency of performance-based payment approaches, AFA partners have often had to do twice as much work.

In 2024, the USDA NRCS received \$5.3 billion in applications in response to a \$1.5 billion funding announcement for RCPP. More than half of those applications were AFAs. This is evidence of unmet producer demand, as well as the growing need NRCS has for partners to deliver more of that funding to more producers through more efficient pathways. But the RCPP (specifically, AFAs) needs to be a lot more efficient; it needs to return to the original roots of the program (leveraged funding and outcome-based, innovative delivery methods), and enable partners and producers to deliver region-scale results. Right now, there’s too much process and complexity standing in the way of that. While NRCS’s recent administrative improvements have helped, there are several items that must be addressed in statute.

In 2024, even though the Farm Bill did not pass, significant progress was made to improve the program. The proposed 2024 House Republican RCPP amendments included a few needed reforms, and the proposed 2024 Senate Democrat RCPP amendments included several more. TFT and its partners advocated for the following changes to RCPP in the last Congress, and they continue to believe that these clarified authorities, streamlined changes, and procurement adjustments will yield a stronger technology- and outcome-driven AFA track within RCPP that will deliver much more efficient results and can better integrate with other federal efforts (such as those enabled by the EPA and Reclamation reforms).

Farm Bill Programs**Improving Efficiency**

Working Lands

Suggested
Changes**Allow the Performance-Based AFA Track to Operate Efficiently**

AFAs should operate differently. Right now, where the statute is silent or unclear on something, NRCS plugs in Classic components to operate AFA. This creates complexity, redundancy, and clunkiness, thus defeating the purpose of AFA. We suggest the following changes to clearly separate and guide both Classic and AFA tracks:

- **Different payment approaches for AFAs:** The Classic and AFA tracks need explicitly separate payment approaches. Right now, if AFA partners want to pay for performance or outcomes, they must do all the Classic-based work *and then also* complete performance-based work, resulting in extra work. For example, unlike standard conservation practices, which are covered by NRCS's programmatic environmental assessment, NRCS requires a new National Environmental Protection Act (NEPA) analysis for any payment approach not based on an approved conservation practice standard and reimbursement amount. This creates a clear disincentive to implement this more efficient transaction approach. In addition, NRCS mostly limits AFA performance payment amounts to NRCS cost-based reimbursement schedules. By constraining something that is supposed to be price-based into a cost-based structure, the efficiency and incentive benefits of a performance- or outcomes-based approach are undercut. Adding conservation outcomes and performance-based payments definitions up front offers clarity as to how to quantify and transact payments, which is critical to executing efficient AFAs.
- **Add streamlining crosscutter authorities for AFAs:** When an AFA uses performance-based payments and robust tools to generate clearly quantifiable conservation outcomes, the question as to whether the project is "good" for the environment has been largely answered. Right now, however, the crosscutters must still be applied, resulting in a duplicative proof. This weighs down program delivery and defeats the efficiency- and innovation-based statutory purposes of the AFA. Several specific allowances that AFAs should receive to enable equally secure but much faster, more efficient improvements on the ground:
 - **NEPA flexibility:** Instead of filling out NRCS Form CPA 52 for established practices (about 150 distinct questions for each project) or having to do more-exhaustive Environmental Assessments for less-established practices, NRCS should use Categorical Exclusions or programmatic compliance determinations for AFAs.
 - **Cultural resources flexibilities:** Obtaining cultural resources review for every project is a bottleneck. State NRCS offices have limited staff resources, and in addition to review by NRCS, projects must also be reviewed by the State Historical Preservation Office and any local Tribes. For land that has been actively tilled for farming for generations, the tradeoff associated with cultural resources review is high. The federal regulations create a process for creating exempted categories for cultural resources (see 36 CFR 800.14(c)). The RCPP AFA track should embed these flexibilities and instruct NRCS to develop approaches that ensure the right balance of oversight.
 - **Adjusted gross income waiver:** Under a performance-based track, the financial status of the producer should not matter. Many medium/family farms are precluded from participating in NRCS programs. Though an AFA partner currently receives a waiver under the statute, participating producers do not. This represents yet another impediment to rapid and efficient transactions.
- **Streamline AFA partner duties:** The core benefit of the AFA track for NRCS is that partners take on much of the work that would otherwise fall to already overburdened state NRCS offices. However, the current list of partner duties is not specific enough, making it difficult to ascertain whether NRCS and the federal government are securing the intended benefits of relying on partners. Therefore, the AFA partner duties should be stripped down to those that are necessary to successfully deliver on AFAs: 1) the partner can and does complete all non-delegable technical assistance on behalf of NRCS (e.g., designs, compliance, producer contracting), 2) the partner secures leveraged funding, and 3) the partner uses innovative methods to deliver conservation funds faster to producers (e.g., uses quantification tools to deliver faster, more efficient performance-based payments).
- **Remove 15-AFA-per-year cap:** As evidenced by this last RCPP funding round, the AFA track is no longer in the pilot stage, and there is growing comfort with AFAs. Retaining this cap imposes a major constraint on the ability to realize the benefits of the track.

Working Lands**Simplify Funding Allocation**

The best projects should rise to the top and get funded, but that is not what happens currently due to the multiple program constraints that currently create separate funding buckets. The statute allocates 50% of funding to Critical Conservation Areas (CCA) and 50% to projects outside of CCAs. Then NRCS sets quotas for Classic and AFA. This effectively results in four competition buckets (CCA Classic, CCA AFA, Non-CCA Classic, and Non-CCA AFA).

Recent Funding

For the last funding round in 2024, these constraints resulted in major imbalances: 15% of state/multi-state AFA applications were funded, 19% of CCA AFAs were funded, 33% of state/multi-state Classics were funded, and 56% of CCA Classics were funded. AFAs were funded at far lower rates, even though state NRCS offices are struggling to get covered program dollars out the door efficiently. A different allocation approach could be implemented to ensure that the best projects rise to the top regardless of how they're tagged.

Contribution**Set An Objective Match Funding Percentage**

Currently, the statute calls for partners to bring a “significant contribution.” This phrase has been interpreted subjectively, which has become more problematic as the size of awards has grown. Reverting to a match-funding percentage will level the playing field. The 2024 House version included a 50% match target. This makes sense, but partners should be afforded more options for creatively leveraging funding, including additional options to be counted as a match (e.g., other federal program dollars, project financing, use of partner capital assets, partner contributions for land management activities). Also, NRCS could be instructed to reduce the match requirement for smaller award levels.

Criteria**More Objective and Targeted Priority Criteria**

Too many of the current prioritization criteria are subjective or difficult to quantify. The criteria should be consolidated to a more objectively measurable set that: A) helps producers avoid regulation; B) significantly leverages non-program financial resources; C) delivers results that will meaningfully address priority resource concerns for a CCA or other existing watershed plans; D) is able to generate multiple conservation outcomes; and E) allows innovative conservation methods or forms of delivery that result in a lower than standard technical assistance ratio (the current ratio is 75% financial assistance to 25% technical assistance, but there is no current incentive for partners to deliver financial assistance at a lower ratio).

Conclusion

By using technology to prioritize where we invest, coordinating fragmented funding to the best projects across a region, and vastly streamlining transactions for the end users of land and water, the Watershed Outcomes Bank model can deliver robust conservation investment to working lands in a way that overcomes the inefficiencies, fragmentation, and red tape inherent in the current system. The size of the challenge being faced and the lack of an obvious “owner” for solutions can be daunting, but we must figure this out (and then replicate a solution at scale and speed) to improve American food security and reduce the growing risks to communities posed by flood and fire. The Watershed Outcomes Bank efforts in California, Oregon, and Idaho profiled herein demonstrate that an efficient and effective outcomes-based approach is not only possible but also preferred by a diverse array of stakeholders. As these initial efforts continue to deliver results, it will be critical to better enable and catalyze future iterations by making critical policy changes. Results, efficiency, speed, and scale are all possible—but only if we are willing to both acknowledge the limitations in the current system and try something new to overcome them.

For Additional Information

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The Freshwater Trust preserves and restores freshwater ecosystems using analytics, science, technology, and incentive-based solutions. The 40-year-old nonprofit has pioneered a “Quantified Conservation” approach using data and technology to ensure every restoration action taken translates to a positive outcome.

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Working Lands

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WATER BRIEFS

SHORELINE CHANGES USGS REPORT

CA

One common pattern of beach morphology is the seasonal cycle of the shoreline. Shorelines often show cycles of erosion and recovery year after year, which results in recurring widening and narrowing of the beach.

Scientists know that these cycles are related to ocean waves, and that larger waves cause movement of beach sand offshore whereas smaller waves move this sand back to the beach.

Knowledge of these seasonal cycles comes from a long history of scientific measurement of beaches, and a general consensus is that beaches erode during winter conditions and recover during the summer. These descriptions of winter and summer beach conditions are so well accepted that they can be found in most earth and ocean science textbooks.

However, new research by USGS and partners using large datasets of beaches from satellite imagery shows that this winter/summer framework doesn't fit all beaches—including the majority of southern California's beaches.

This research shows that there is a great diversity in the seasonal timing of beach erosion and recovery cycles, and that many beaches show regular erosion cycles in the spring or the summer, rather than the winter. This indicates that the 'winter-narrow/summer-recovery' conventions for beaches are not expressed universally and that shoreline seasonality is far more diverse than these simple canonical rules.

The research suggests that the wave conditions and physical setting of beaches are adequately diverse to cause these differences in the seasonal cycles of shoreline.

FOR INFO: <https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2024JF007836>

WATER QUALITY GRANTS AND LOANS

WA

Every December, the Washington Department of Ecology grants and loans team reviews and ranks applications for funding in preparation for a draft offer list of clean water projects. During this application cycle, we screened 155 applications with \$565 million in eligible funding requests. After review, we're proposing to award

\$175.5 million for 102 high-priority clean water projects across the state.

The funding amounts in the draft offer list are estimates and may change based on the Washington State Legislature's final 2025-27 Biennial Budget and funding available from the federal government. Due to recent federal government actions, disbursement of some federal funding may be paused or reduced. This could impact projects on the draft list. We'll reflect any changes in funding when we share our final list by July 1, 2025, and continue to share timely information with our funding applicants and recipients.

Funding wastewater and stormwater infrastructure projects are some of the many ways we support communities. Our clean water funding also supports projects that prevent and clean up nonpoint pollution, or sources of pollution without a single source. Our funding comes from a mix of state and federal funds dedicated to water quality improvements and protection.

Grant and loan offers of more than \$12 million receive Environmental Justice Assessments under Washington's Healthy Environment for All (HEAL) Act (RCW 70A.02). These assessments are intended to help us fairly distribute environmental benefits and address environmental and health inequalities. An environmental justice assessment includes consultation with Tribes and outreach to people at high risk for poor health due to environmental conditions and socio-economic vulnerabilities. This year, two projects have proposed funding offers over \$12 million: Sewage pump replacement for King County Natural Resources & Parks Department and Ship Canal Water Quality Project for City of Seattle Public Utilities.

This year we are excited to introduce two new stormwater funding sources to the Water Quality Combined Fund: Community-Based Public-Private Partnerships (CBP3), and Stormwater Grants of Regional or Statewide Significance.

Community-based public-private partnerships are partnerships between a local government and a private entity to plan, build, or maintain public stormwater projects. The goal of these partnerships is to improve stormwater management and meet regulations while providing additional benefits to the community.

The Stormwater Grants of Regional or Statewide Significance program addresses regional or statewide needs and provides financial support that benefits multiple municipal stormwater permittees by helping them meet permit requirements. This funding source is unique because it encourages permittees with similar needs to collaborate to avoid duplicating efforts. This program receives state funding.

FOR INFO: <https://ecology.wa.gov/water-shorelines/water-quality/water-quality-grants-and-loans>

WATER RELIABILITY WIFIA LOAN

UT

On Feb. 18, the US Environmental Protection Agency (EPA) Administrator Lee Zeldin announced a \$110 million Water Infrastructure Finance and Innovation Act (WIFIA) loan to Weber Basin Water Conservancy District in northern Utah. The announcement follows EPA's "Powering the Great American Comeback" initiative that affirms the agency's commitment to protecting human health and the environment while remaining good stewards of tax dollars and advancing policies to energize the economy. This loan will help the district provide reliable drinking water to five counties, supporting over 20% of Utah's population while creating local jobs to support the projects.

This WIFIA loan will allow the district to make numerous expansions and upgrades that will ultimately increase water supply for consumers while advancing water reuse. Specifically, this project will include expanding two drinking water treatment plants; replacing water storage tanks; and constructing transmission lines, an aquifer storage recovery well, and water reuse facilities.

This project will help provide a reliable drinking water supply to approximately 700,000 residents. This is the first WIFIA loan in a master agreement that will commit \$285 million in WIFIA financing for water infrastructure projects. The WIFIA program's repayment flexibility allows for acceleration of critical water infrastructure projects, while minimizing costs for customers. The Weber Basin Water Conservancy District is expected to save approximately \$19 million over the life of the loan.

FOR INFO: <https://www.epa.gov/wifia>

**FUNDING
WATER INFRASTRUCTURE****WEST**

On Feb. 14, the Texas Water Development Board (TWDB) approved financial assistance totaling \$52,786,369 for water loss and water system improvement projects.

- \$35,788,153 in Rural Water Assistance Fund grants for water loss projects
- \$3,835,000 to the City of Spur (Dickens County) for water system improvements
- \$92,820 to the D Bar B Water and Wastewater Supply Corporation (Dallas County) for water system improvements
- \$3,765,520 to the City of Richland Springs (San Saba County) for water system improvements
- \$9,304,876 to the Nueces County Water Control and Improvement District No. 3 (Nueces County) for water system improvements

The TWDB is the state agency charged with collecting and disseminating water-related data, assisting with regional water and flood planning, and preparing the state water and flood plans. The TWDB administers cost-effective financial assistance programs for the construction of water supply, wastewater treatment, flood mitigation, and agricultural water conservation projects.

FOR INFO: <https://texaswaternewsroom.org/>

**BIRCH CREEK
CTUIR FUNDING****NW**

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) recently received notice it will get \$3.6 million from the National Fish and Wildlife Federation (NFWF) for improving the Birch Creek Watershed.

Rebecca Schwartz, CTUIR Department of Natural Resources Fisheries Habitat biologist, said improvements will consist of restoring fish habitat and a floodplain as well as decommissioning a 26-acre concentrated animal feeding operation (CAFO).

The project site is upstream from its convergence with the Umatilla River and is a 60.5-acre parcel, including half a mile of Birch Creek. Located on private property, the site will be under a non-development and restoration easement on 943 acres, including water rights to be left instream in perpetuity among the landowner, Blue Mountain Land Trust, and Bonneville Power Administration.

“Birch Creek is a primary tributary to the Umatilla River and provides important habitat for salmonids and other aquatic species. It produces roughly 50% of the

Umatilla River Endangered Species Act-listed Mid-Columbia summer steelhead,” Schwartz said. “The Birch Creek Watershed has been part of the homeland for the three tribes of the Confederated Tribes of the Umatilla Indian Reservation—Cayuse, Umatilla and Walla Walla—since time immemorial.”

Birch Creek provided a travel conduit for the tribes, and the watershed’s diverse resources were available for subsistence hunting, fishing and gathering. Over the years reductions in habitat quality and quantity have negatively impacted fish species, including the extirpation of spring Chinook and coho salmon.

Schwartz said floodplain restoration will consist of creating a primary channel, side channel habitat, floodplain benching, ponds, wetland complexes, large wood structures, and a secondary high-flow bridge. This work is expected to address the lack of floodplain connectivity and habitat complexity for Endangered Species Act-listed steelhead and bull trout, Coho salmon, spring and fall Chinook salmon, Pacific lamprey, and freshwater mussels.

The CTUIR will receive the funds this year, and the project will be implemented over multiple years due to its complexity and CAFO decommissioning requirements by the state. The secondary high flow bridge is anticipated to be installed in this spring, followed by the CAFO decommissioning in 2026 and the floodplain restoration in 2027.

FOR INFO: <https://ctuir.org/>

**NEW BILLS
CWCB ROLES & TURF****CO**

The House Agriculture, Water and Natural Resources Committee passed two bills on Feb. 20, to protect Colorado’s fresh water resources. HB25-1115 would expand the duties of the Colorado Water Conservation Board and HB25-1113 would eliminate non-functional turf around certain multi-family housing.

HB25-1115, also sponsored by Representative Matt Soper, R-Delta, passed committee by a vote of 13-0. This bill would help protect and preserve Colorado’s fresh water resources in the face of uncertain water conditions ahead. HB25-1115 would expand the power and responsibilities of the Colorado Water Conservation Board (CWCB) to oversee a statewide water supply measurement and a forecasting program.

The bill would expand the CWCB’s water supply measurement program to:

- Collect and disseminate data on snowpack levels.
- Investigate the latest technological advances in snowpack measurement and water supply forecasting.
- Collect other data to assist in snowpack measurement, water supply forecasting, or flood hazard mapping.

Colorado currently relies on a patchwork of smaller entities, like nonprofits and municipalities, to measure and map the state’s water resources. This bill would redirect funding already set aside from the Colorado Water Conservation Board Construction Cash Fund to permanently support a statewide program, ensuring equitable support across the state.

HB25-1113, passed committee by a vote of 9-3. This bill aims to promote water-wise landscaping by prohibiting the installation or planting of non-functional turf, artificial turf, or invasive plant species on multi-family housing properties, specifically condominiums or apartment complexes with twelve or more units.

Colorado lawmakers have championed multiple laws to ramp up water conservation in the state, including turf replacement and the reduction of non-functional turf on state and commercial properties. HB25-1113 builds off of SB24-005 by limiting the installation of high water-use, non-native plants on property owned and operated multi-family properties, including apartments or condominiums.

FOR INFO: <https://leg.colorado.gov/bills/hb25-1115> or <https://leg.colorado.gov/bills/hb25-1113>

**SGMA PLANS
APPROVALS****CA**

Marking a major milestone towards sustainably managing California’s groundwater supplies, the Department of Water Resources (DWR) announced on Feb. 27 determinations for groundwater sustainability plans in 16 basins across the state. These plans are expected to present a roadmap for how local agencies will sustainably manage groundwater, a critical water supply for millions of Californians, over the long-term.

These customized plans are a critical piece towards implementing the Sustainable Groundwater Management Act (SGMA) which is centered around the local control of groundwater basins. Passed in 2014, the law calls for local groundwater sustainability agencies (GSAs) to develop and implement

plans to achieve the sustainability goals of groundwater basins over a 20-year period.

California's groundwater basins, which collectively make up a massive underground reservoir, provide a critical water supply for over 15 million people, especially during dry years when surface water supplies are lacking. As California adapts to a hotter, drier future, these groundwater supplies will become a more vital resource for local water agencies and agriculture.

This release marks a significant SGMA milestone, completing all initial plan determinations for high and medium priority basins in California that are required to comply with SGMA.

Of the 16 plan determinations announced, DWR has approved 15 plans and deemed one plan inadequate.

DWR has approved plans for the following basins:

- Antelope (Tehama County)
- Big Valley (Lassen and Modoc Counties)
- Bowman (Tehama County)
- Butte Valley (Siskiyou County)
- Carpinteria (Santa Barbara and Ventura County)
- Colusa (Glenn and Colusa Counties)
- Corning (Glenn and Tehama Counties)
- Fillmore (Ventura County)
- Los Molinos (Tehama County)
- Modesto (Stanislaus and Tuolumne Counties)
- Montecito (Santa Barbara County)
- Piru (Ventura County)
- Red Bluff (Tehama County)
- Tulelake (Modoc and Siskiyou Counties)
- Turlock (Merced and Stanislaus Counties)

DWR has deemed the following basin plan Inadequate:

- Pleasant Valley (Fresno County)

Several of the plans approved were previously deemed incomplete in prior reviews and had 180 days to revise and resubmit. Working together, DWR staff facilitated 46 consultation meetings totaling over 100 hours to provide technical guidance for addressing plan deficiencies with GSAs from 13 basins.

In total, 86 basins are now operating under an approved plan or alternative plan, with seven deemed inadequate and subject to state intervention. Basins that have not taken sufficient action to address deficiencies in their plans are deemed inadequate and require consultation with the State Water Resources Control Board for possible state intervention.

The approved plans announced provide direction to the local GSAs, including recommended actions, to ensure the basins remain on a path to long-term sustainability. Plans will be updated over time as new data and information becomes available and as groundwater conditions change. DWR will review annual reports from the GSAs and conduct periodic reviews at least every five years to determine if basins are on track to meet their sustainability goals. DWR will continue to support GSAs as they move forward in the SGMA implementation process.

FOR INFO: <https://sgma.water.ca.gov/portal/>

CLEAN WATER BILL FILLING CWA GAPS NM

On Feb. 26, the full New Mexico Senate voted 25-16 to pass SB 21, a bill to provide critical protections for New Mexico waters. It will next go to the House for committee hearings and, if passed, a floor vote.

Following rollbacks to federal clean water protections in recent years, up to 95% of New Mexico's streams have lost protection once provided under the Clean Water Act. Because of these rollbacks and the lack of a state water quality permitting system, American Rivers named all New Mexico rivers atop its list of the most endangered rivers in the country in its 2024 Most Endangered Rivers report.

SB 21 ensures federal clean water protections that had existed in New Mexico for decades are continued at the state level. In addition, it provides authority for the state to take over permitting from the federal government for the waters that are still federally protected, streamlining the process and bringing oversight into the hands of New Mexicans.

Senate Majority Leader Peter Wirth, Senator Bobby Gonzales, and Rep. Kristina Ortez sponsored SB 22 (a bill to establish a state-level permitting system for waters no longer federally protected under the Clean Water Act) and SB 21 (a bill to assume state permitting authority for waters currently permitted by the US Environmental Protection Agency) to set in place the necessary authority to build a comprehensive state permitting program. Those two bills have now been combined into SB 21.

FOR INFO: <https://www.nmlegis.gov/Legislation/Legislation?Chamber=S&LegType=B&LegNo=21&year=25>

WIFA FUNDING WATER CONSERVATION AZ

The Arizona Office of the Governor has authorized funds to the Water Infrastructure Finance Authority (WIFA) to facilitate a new round of water conservation grant fund (WCGF) grants. The funding available for this grant program is \$14.1 million. All projects must be completed by June 30, 2026 (funds completely drawn). Conservation projects may receive up to \$250,000. Conservation programs may receive up to \$3 Million.

There is a 25% match requirement for each conservation program or project. Monies from any non-WIFA source may satisfy the match requirement.

A wide range of projects and programs may be eligible for WCGF funding. Some examples include:

- Water use education and conservation research
- Community incentives for rainwater harvesting, gray water systems, and turf removal
- Widespread installation of drought-resistant landscaping and turf removal incentives
- Infrastructure efficiency upgrades
- Projects that promote groundwater recharge and imported aquifer health
- Construction of groundwater storage facilities
- Community education initiatives about wise water use
- Programs or projects to reduce structural water overuse issues

FOR INFO: <https://grants.az.gov/funding-opportunities>

WATER ALLOCATION BUREAU OF RECLAMATION CA

On Feb. 25, the Bureau of Reclamation (Reclamation) announced major steps to improve California water supply. The initial allocation to be provided to California farmers on the west side of the Central Valley south of the Sacramento-San Joaquin Bay-Delta is more than twice what the initial allocation was in 2024, a year with similar hydrology. In addition, the Trump administration is investing more than \$315.5 million to create new water storage at the future Sites Reservoir and at the existing San Luis Reservoir.

Reclamation, as directed through President Trump's Executive Order 14181, has worked to maximize water supply, particularly for south-of-Delta contracts.

Reclamation continues its dedicated efforts to deliver more water and produce more hydropower as a commitment to California farmers and communities. Reclamation will continue to maintain full pumping whenever possible at the Jones Pumping Plant to move water to parts of California where it is needed most and provides the greatest economic value to the entire country.

Water supply allocations are based on an estimate of water available for delivery and reflect current reservoir storage, precipitation, and snowpack in the Sierra Nevada, as well as contractor-rescheduled water from the last water year.

The 2025 water year has been somewhat inconsistent, punctuated by an extremely wet November followed by an exceptionally dry January. These allocations consider the results of the most recent February storms that hit across California. As always, Reclamation continues to review conditions and make updates as new information and data are analyzed, and assumptions are adjusted.

Based on current hydrology and forecasting, Reclamation is announcing the following initial Central Valley Project water supply allocations:

Sacramento River

- Irrigation water service and repayment contractors north-of-Delta are allocated 100% of their contract total.
- Municipal and industrial water service and repayment contractors north-of-Delta are allocated 100% of their contract total.
- Sacramento River Settlement Contractors' water supply is based upon settlement of claimed senior water rights. The 2025 water year is determined as non-critical, as defined in their Settlement Contracts, which allows for 100% of their contract water supply.

American River

- M&I water service and repayment contractors north-of-Delta who are serviced by Folsom Reservoir on the American River are allocated 100% of their contract total.

In-Delta Contractors

- M&I water service and repayment contractors who are serviced directly from the Delta are allocated 100% of their contract total.

South-of-Delta Contractors

- Irrigation water service and repayment contractors south-of-Delta are allocated 35% of their contract total.

- M&I water service and repayment contractors south-of-Delta are allocated 75% of their historical use, or public health and safety needs, whichever is greater.
- San Joaquin River Settlement Contractors and San Joaquin Exchange Contractors' water supply is based upon settlement/exchange of claimed senior water rights. The 2025 water year is determined as non-critical, as defined in their contracts, which allows for 100% of their contract supply.
- In addition to this allocation, CVP contractors south-of-Delta are expected to reschedule approximately 180,000 acre-feet of unused allocated water from 2024 for use in 2025.

Friant Division Contractors

- Friant Division contractors' water supply is delivered from Millerton Reservoir on the upper San Joaquin River via the Madera and Friant-Kern canals. The first 800,000 acre-feet of available water supply is considered Class 1; Class 2 is considered the next amount of available water supply up to 1.4 million acre-feet. The Friant Division water supply allocation is 45% of Class 1 and 0% of Class 2.

Wildlife Refuges

- The 2025 water year is determined as non-critical, as defined in their contracts, which allows for 100% of contract supply for wildlife refuges (Level 2), both north- and south-of-Delta.

Reclamation reserves about 83,000 acre-feet of water in San Luis Reservoir that is attributed to a drought reserve pool and is not considered available for water supply allocations in non-critical years. Further, Reclamation recognizes around 180,000 acre-feet of previous year water rescheduled by Central Valley Project contractors for use this water year. This rescheduled water, representing enough to support around an additional 10% south-of-Delta irrigation water service and repayment contract allocation, is not considered available for current year water supply allocation, though it may be used by these contractors this year.

As the water year progresses, changes in hydrology, actions that impact operations, and opportunities to deliver additional water will influence future allocations. Reclamation will continue to monitor hydrology and may adjust basin-specific allocations if conditions warrant an update.

FOR INFO: <https://www.usbr.gov/mp/>

ANDERSON DAM EIR CERTIFIED/APPROVED

CA

On Feb. 25, the Valley Water Board of Directors approved resolutions to certify the final Environmental Impact Report (EIR), approve the engineer's report for the Anderson Dam Seismic Retrofit Project, and approve the environmentally superior alternative described in the EIR.

This decision followed a public hearing and is an important step in Valley Water's effort to rebuild Anderson Dam. The final EIR covers all parts of the Anderson Dam Seismic Retrofit Project, including:

- Retrofitting and upgrading the dam and its facilities
- Conservation measures to reduce negative environmental impacts
- Programs for monitoring, operations and maintenance, and adaptive management

You can review the final EIR and engineer's report at valleywater.org/public-review-documents.

Valley Water has made significant progress in designing the Anderson Dam Retrofit Project, securing environmental permitting and selecting a contractor. The agency must complete these steps before construction begins.

Valley Water is also making steady progress in its work at Anderson Dam. In September 2024, crews finished excavating a 1,736-foot-long tunnel next to Anderson Dam. The new, larger tunnel will help Valley Water release more water from the reservoir during an emergency.

Valley Water will begin retrofitting the dam embankment and spillway once the necessary permits are obtained. This work includes building new outlet pipes, removing and constructing the spillway, and rebuilding the dam embankment. It is estimated to start in January 2027 and last about seven years. Once finished, Valley Water will again be able to fill Anderson Reservoir.

FOR INFO: <https://www.valleywater.org/project-updates/c1-anderson-dam-seismic-retrofit>

GROUNDWATER ACCOUNTING PUBLIC PLATFORM

US

The Groundwater Accounting Platform—an increasingly popular water management tool for growers and water resource professionals—has released its source code in a new public repository on GitHub. The code is now open to software

developers, consultants, academics, and agencies who can help customize and expand the platform's use.

Named the Qanat Project—after the ancient Persian qanat systems that brought groundwater to the surface via horizontal wells—the new repository represents a modern approach to time-tested water management practices. While the platform's source code has always been available upon request, the GitHub repository streamlines access, inviting broader collaboration and innovation to tackle water management challenges.

By contributing to and expanding the

platform's functionality, users can develop and share custom solutions that address unique community water needs. The platform also integrates with the open-source Groundwater Evaluation Toolbox (GET) to provide scenario planning and forecasting modules.

The Qanat Project is publicly available on GitHub at github.com/esassoc/qanat-community.

Developed collaboratively by the Environmental Defense Fund, the California Water Data Consortium, Environmental Science Associates, and Olsson, the Groundwater Accounting Platform offers

a robust, user-friendly tool for tracking water availability and use in near-real time, providing water managers, growers, and landowners with essential data down to the parcel level. By integrating information from diverse data sources like satellite imagery, flow meters, and sensor networks, the Platform supports precise water budgeting and scenario planning, helping California's Groundwater Sustainability Agencies and other partners plan and respond to fluctuating water conditions.

FOR INFO: <https://groundwateraccounting.org/>

CALENDAR

March 16-19 **FL**

40th Annual WaterReuse Symposium, Tampa. JW Marriott Tampa Water Street. Presented by WaterReuse. For info: www.watereuse.org

March 17-20 **CA**

34th Annual International Conference on Soil, Water, Energy, and Air, San Diego. DoubleTree by Hilton Mission Valley. Presented by the Association for Environmental Health and Sciences Foundation. For info: <https://www.aehsfoundation.org/westcoast>

March 18 **WEB**

California Water Plan Resource Management Strategies Webinar, Virtual Event.

Presented by Water Education Foundation. For info: <https://water.ca.gov/News/Events/2025/Mar-25/California-Water-Plan-RMS-Webinar>

March 18 **CO**

Snowshoe to a Snotel site, Blueriver. Hoosier Pass. Presented by Blue River Watershed Group. For info: <https://docs.google.com/forms/d/e/1FAIpQLSfM6JfYFwBPAima1f3zERSOYUizs0qtZ84UoW7RfE LU-Js2SQ/viewform>

March 18-19 **WA**

2025 Northwest Groundwater Conference, Spokane. Ruby River Hotel. Presented by American Ground Water Trust. For info: <https://agwt.org/event/2025->

northwest-groundwater-conference/

March 18-21 **TX**

Texas Water 2025, Houston. George R. Brown Convention Centre. Presented by Texas Section American Water Works Association and the Water Environment Association of Texas. For info: <https://www.txwater.org/about.cfm>

March 19 **WEB**

New Administration, New Congress, and Complying with Recent Rulemakings, Virtual Event. Presented by American Water Works Association. For info: <https://store.awwa.org/product/44218>

March 21 **AZ**

2025 AZ Water Research Symposium, Phoenix. Gateway Community College. Presented by AZ Water Association. For info: <https://www.azwater.org/events/EventDetails.aspx?id=1925336&group=>

March 22 **CO**

3rd Annual Wild & Scenic Film Festival, Silverthorne. Silverthorne Pavilion. Presented by Eagle Summit Wilderness Alliance. For info: <https://www.wild4eswa.org/event-details/eagle-summit-wilderness-alliance-3rd-annual-wild-scenic-film-festival>

March 25 **NV**

Aquifer Testing Workshop, Las Vegas. Desert Research

Institute. Presented by Nevada Water Resources Association.

For info: <https://www.nvwra.org/aquifer-testing-workshop>

March 25-26 **DC**

2025 NGWA and WQA Fly-In, Washington. Hamilton Square. Presented by National Ground Water Association and the Water Quality Association. For info: <https://www.ngwa.org/detail/event/2025/03/25/default-calendar/25Mar5090>

March 26 **CA**

ACWA 2025 Legislative Symposium, Sacramento. **SAFE Credit Union Convention.** Presented by Association of California Water Agencies. For info: <https://www.acwa.com/events/ls25/>

March 26 **WEB**

Rethinking Reserves, Virtual Event. Presented by American Water Works Association. For info: <https://store.awwa.org/product/44219>

March 26-28 **TX**

2025 RuralWaterCon Annual Convention, Austin. Renaissance Austin Hotel. Presented by Texas Rural Water Association (TRWA). For info: <https://www.trwa.org/events/EventDetails.aspx?id=1885247&group=>

March 27-28 **NV**

2025 Tour of Amargosa Valley, Las Vegas. Tuscany Suites & Casino. Presented by Nevada Water Resources Association.

For info: <https://www.nvwra.org/2025-amargosa-valley-tour>

March 28 **CO**

Southwestern Water Conservation District's 41st Annual Seminar, North Ignacio. Sky Ute Casino Resort. Presented by Southwestern Water Conservation District. For info: <https://swcd.specialdistrict.org/swcd-annual-seminar-registration-draft-agenda-now-available>

March 31- April 2 **DC**

WaterPower Week 2025, Washington. Capital Hilton. Presented by National Hydropower Association. For info: <https://waterpowerweek.com/>

April 2 **WEB**

Investigating Enforcement Mechanisms Beyond Local Ordinances - A Look into AWWA's New Guidance, Virtual Event. Presented by American Water Works Association. For info: <https://store.awwa.org/product/44191>

April 3-4 **NM**

Law of the Rio Grande Conference, Santa Fe. La Fonda on the Plaza. Presented by CLE International. For info: <https://web.cvent.com/event/4a510c16-6f64-4231-b9a5-ded635a11722/regProcessStep1?RefId=cle.com%20more%20info>

April 7-9 **FL**

The Wastewater Summit, Ponte Vedra Beach. Presented

by WasteWater Digest and WaterWorld. For info: <https://www.thewastewatersummit.com/>

April 8-9 DC

2025 National Water Policy Fly-In, Washington. Hilton Washington DC National Mall. Presented by National Association of Clean Water Association. For info: <https://www.nacwa.org/conferences-events/event-at-a-glance/2025/04/08/nacwa-events/2025-national-water-policy-fly-in>

April 10 CA

Water 101 Workshop: The Basics & Beyond, Sacramento.

McGeorge School of Law. Presented by University of the Pacific, McGeorge School of Law. For info: <https://www.watereducation.org/foundation-event/water-101-workshop-basics-beyond-1>

April 10-11 TX

Texas Wetlands Conference, Galveston.

The Tremont House. Presented by CLE International. For info: <https://web.cvent.com/event/55dc63b5-7465-4a41-833d-e5cb553d5f43/regProcessStep1?RefId=cle.com%20more%20info>

April 14 WEB

NGWA's Hydrogeology of States Webinar Series: Indiana, Virtual Event.

Presented by the National Ground Water Association. For info: <https://www.ngwa.org/detail/event/2025/04/14/default-calendar/25apr14web>

April 16 CA

ACWA Region 4 Tour & Program, Manteca.

Hampton Inn & Suites Manteca. Presented by Association of California Water Agencies. For info: <https://www.acwa.com/events/acwa-region-4-program-and-tour-2/>

April 22-24 DC

CIFA Summit on Water Infrastructure, Washington.

Hyatt Regency Washington on Capitol Hill. Presented by Council of Infrastructure Financing Authorities. For info: <https://www.cifanet.org/summit>

April 22-24 CA

Water Quality Association 2025 Convention and Exposition, Long Beach.

Long Beach Convention Center. Presented by WQA Convention & Exposition. For info: <https://convention.wqa.org/>

April 22-25 CA

2025 CWEA Annual Conference, Palm Springs.

Convection Center. Presented by Association of California Water Agencies. For info: <https://www.acwa.com/events/2025-cwea-annual-conference/>

April 23 WEB

AWWA's New Guidebook: Climate Change Impacts in Water Demand Forecasting, Virtual Event.

Presented by American Water Works Association. For info: <https://store.awwa.org/product/44220>

April 23-25 CA

Central Valley Tour 2025, Sacramento.

Water Education Foundation. Presented by Water Education Foundation. For info: <https://www.watereducation.org/tour/central-valley-tour-2025>

April 23-25 AZ

AZ Water 98th Annual Conference & Exhibition, Phoenix

Convention Center. Presented by AZ Water Association. For info: https://www.azwater.org/m/event_details.asp?id=1757755

April 28-29 AZ

Law of the Colorado River Conference, Tucson.

El Conquistador Tucson, A Hilton Resort. Presented by CLE international. For info: <https://web.cvent.com/event/f4d4d8d9-d734-4861-a07f-d42ac6168081/regProcessStep1?RefId=cle.com%20more%20info>

April 28-30 AK

AWRA 2025 Spring Conference: Development Risks & Challenges in Changing Climate Conditions, Anchorage.

Marriott Anchorage Downtown. Presented by American Water Resources Association. For info: https://www.awra.org/Members/Events_and_Education/Events/2025%20Landing%20Pages/01_SPRING/Spring2025.aspx

April 28-30 DC

NWRA 2025 Policy Conference, Washington.

Royal Sonesta. Presented by National Water Resources Association. For info: <https://www.nwra.org/event-6083074/Registration>

April 29-May 2 NE

2025 Water for Food Global Conference, Lincoln.

Nebraska Innovation Campus Conference Center. Presented by University of Nebraska. For info: <https://waterforfood.nebraska.edu/explore-our-conferences/2025-water-for-food-global-conference/registration>

April 30 WEB

Microplastics 2025, Virtual Event.

Presented by American Water Works Association. For info: <https://store.awwa.org/product/44221>

May 1-2 NV

21st Annual Truckee River Field Study Course, Reno.

TBA. Presented by Nevada Water Resources Association. For info: <https://www.nvwra.org/2025-truckee-river-tour>

May 2 TX

2025 TGWA Geoscience Seminar, Brenham.

Washington County Expo Event Center. Presented by Texas GroundWater Association. For info: <https://web.tgwa.org/events/2025TGWA%20Geoscience%20Seminar-36/details>

May 2 CO

2025 AWRA & CGWA Symposium, Golden.

Mount Vernon Canyon Club. Presented by Colorado Groundwater Association. For info: <https://cgwa.co/2025-symposium>

May 7-9 CA

Bay-Delta Tour 2025, Sacramento.

Water Education Foundation. Presented by Water Education Foundation. For info: <https://www.watereducation.org/tour/bay-delta-tour-2025>

May 12 AZ

AZ Water's 2025 Leadership Series Session 2, Phoenix.

Nox Innovations. Presented by AZ Water Association. For info: <https://www.azwater.org/events/EventDetails.aspx?id=1920584&group=>

<https://www.azwater.org/events/EventDetails.aspx?id=1920584&group=>

May 13-14 NV

Borehole Geophysical Logging for Water Resources/ Water Supply Applications Workshop, Reno.

Riggins Court. Presented by Nevada Water Resources Association. For info: <https://www.nvwra.org/borehole-geophysical-logging-workshop-2025>

May 13-15 CA

2025 Spring Conference & Expo, Monterey.

Monterey Conference Center. Presented by Association of California Water Agencies. For info: <https://www.acwa.com/events/2025-spring-conference-expo/>

May 13-16 CA

2025 National Pretreatment Workshop & Training, San Diego.

The Westin San Diego Bayview. Presented by National Association of Clean Water Agencies. For info: <https://www.nacwa.org/conferences-events/event-at-a-glance/2025/05/13/nacwa-events/2025-national-pretreatment-workshop-training>

May 20-21 AZ

WRRC 2025 Annual Conference - Shared Borders, Shared Waters: Working Together in Times of Scarcity, Tucson.

University of Arizona Student Union Memorial Center. Presented by the Water Resources Research Center. For info: <https://wrrc.arizona.edu/events/wrrc-2025-annual-conference-shared-borders-shared-waters-working-together-times-scarcity>

May 21-23 CA

2025 CWA Spring Policy Symposium, Sacramento.

Kimpton Sawyer Hotel. Presented by California Water Association. For info: <https://calwaterassn.com/event/2025-cwa-spring-symposium/>

May 22 CO

State of the Blue River, Silverthorne.

Silverthorne Pavilion. Presented by Blue River Watershed Group. For info: <https://www.blueriverwatershed.org/state-of-the-blue-river.html>



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