

Joining Forces

INNOVATIVE CO-FUNDING TO ENHANCE CORPORATE WATER
STEWARDSHIP IMPACT IN THE COLORADO RIVER BASIN



MAY 2023

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ABOUT THE AUTHORS

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David's first experiences with natural resources came at the age of five and involved a shovel, a tarp, an earthen irrigation ditch, and a couple hundred acres of hay that needed water. Growing up in the high desert of Albuquerque, New Mexico and the remote beauty of northwestern Colorado, and steadily moving north and west to his current home in Bend, Oregon, David has been immersed in water, land, and natural resources issues throughout his life and career. After graduating from the Colorado College and Lewis and Clark Law School, David worked for ten years at the Oregon Water Trust and The Freshwater Trust, the nation's first water trust. Today, he works with clients across the West and beyond, with a focus on program strategy and design, legal and policy analysis of water, land, and natural resources issues, and communication strategies.

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Key Definitions

Corporate Water Stewardship (Water Stewardship)

An approach that allows companies to identify and manage water-related business risks, understand and mitigate their adverse impacts on ecosystems and communities, and contribute to and help enable more sustainable management of shared freshwater resources (de Souza et al. 2020).

Financing

A funding approach that provides funds that must be repaid; for the purpose of this white paper, only mechanisms with low or zero interest rates are considered.

Funding

Monetary support for water stewardship projects either via a loan (financing) or grant (no repayment obligation).

Grant

A funding approach that provides funds to support water stewardship with no repayment obligation.

Innovative Co-Funding

The use of a flexible funding stream like a corporation's water stewardship budget in concert with other funding sources (co-funders) to drive impacts that the corporation and co-funders' individual sources alone might not achieve.

Water Risk

The effect of water-related uncertainty on an organization's objectives. "Water risk for businesses" typically refers to the ways in which water-related issues can undermine business viability. It is commonly organized into three interrelated categories (Schulte and Morrison 2014):

- Physical: too little water, too much water, water that is unfit for use, or inaccessible water.
- Regulatory: changing, ineffective, or poorly implemented public water policy and/or regulations.
- Reputational: perception that a corporation does not conduct business in a sustainable or responsible fashion with respect to water.



Executive Summary

The Colorado River Basin is experiencing acute water supply limitations. As the scale of the water crisis intensifies, all water use sectors are at risk, with threats to the economic, social, and ecological stability of the basin. Companies that operate or are exposed to water supply risks in the basin are engaged in addressing some of these challenges through corporate water stewardship efforts. While it cannot solve the basin's immense challenges alone, corporate water stewardship can have a meaningful impact at local as well as watershed scales. This report is focused on one way to increase impact: leveraging corporate spending by pairing it with other existing and emerging funding streams, referred to here as co-funding.

The intended audience is practitioners—people working within or consulting for companies—who are looking for ways to increase the impact of their corporate water stewardship spending. A secondary audience is public or philanthropic water funders, water project leads and policymakers in the basin.

The premise of this paper is that co-funding with existing and emerging funding mechanisms can help corporations tackle more complex problems at more meaningful scales in the Colorado River Basin and beyond. Corporations often have more flexibility than other funders, particularly federal and state agencies, in deciding how to spend their water stewardship budgets. This flexibility is an important asset, allowing funding to be deployed strategically. This white paper defines innovative co-funding as the intentional and focused use of corporate water stewardship funding alongside other funders and funding sources in new ways that expand the impact of corporate spending.

The premise of this paper is that co-funding with existing and emerging funding mechanisms can help corporations tackle more complex problems at more meaningful scales in the Colorado River Basin and beyond.

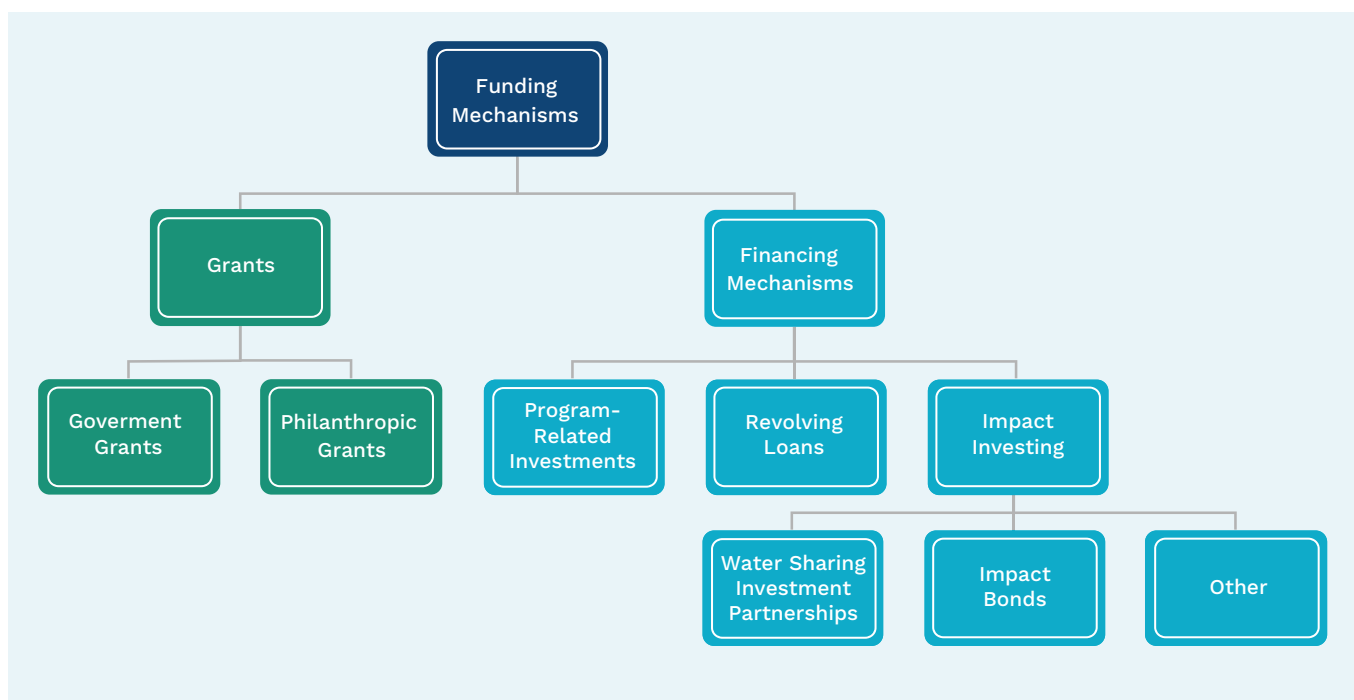
This report considers a limited set of existing and emerging funding mechanisms that fall into two categories: (1) grants which fund projects with no expectation of financial returns (including repayment of capital), and (2) financing mechanisms, which provide capital with the expectation of repayment with or without interest and/or an equity stake in the project. Financing mechanisms (which can involve public and/or private funders) discussed here include program-related investments, revolving loan funds, and various impact investing approaches.

TAXONOMY OF EXISTING AND EMERGING FUNDING MECHANISMS

Each of the existing and emerging funding mechanisms are defined to highlight opportunities for co-funding:

- **Grants** (both government and philanthropic) do not require a monetary return on investment and are the most common funding pathway for water stewardship projects. Grants are often awarded competitively, through broad or targeted calls for proposals.
- **Program-Related Investments** are loans from foundations to non-profits, for-profits, or other entities with the expectation of below-market or no financial returns. To qualify, the primary purpose of the loan must be to accomplish one or more of a foundation's exempt purposes.
- **Revolving Loan Funds** are pools of capital from which low interest loans can be made for projects; repayment of the loans and interest payments are then reinvested in the funds. The most common type of revolving loan fund is a state revolving loan fund, though this paper also highlights examples of private revolving loan funds.
- **Impact Investing** includes a range of financing approaches where one or more investors fund a project in return for repayment of debt on favorable terms or in return for an equity stake in the project. Two specific examples, water-sharing investment partnerships and impact bonds, are discussed to demonstrate the potential for co-funding with corporate water stewardship efforts.

Taxonomy of Existing and Emerging Candidates for Corporate Water Stewardship Co-Funding 🔍



After defining the mechanisms that are candidates for co-funding, specific co-funding strategies and a set of “blueprint” diagrams are presented. The discussion provides conceptual details on how corporate funding could be paired with the described mechanisms and is guided by the overall goal of highlighting how co-funding can drive greater impact. With this in mind, co-funding mechanisms are organized into five categories:

- Seed funding to get projects off the ground;
- Required match funding for grants;
- Non-required match funding to increase competitiveness of grant applications;
- Funding to increase total project investment; and
- Funding to repay loan principle.

Roles of Corporate Funding by Funding Mechanism 🔍

		STRATEGIC CO-FUNDING ROLES FOR CWS				
Existing and Emerging Candidate Mechanisms for Co-Funding		Seed funding	Required match funding	Non-required match funding	Funding to increase total investment	Funding to repay loan principle
GRANT	Government	●	●			
	Philanthropic	●		●		
FINANCING	Program Related Investment				●	●
	Revolving Loan Funds				●	●
	Impact Investing				●	●

ROLES OF CORPORATE FUNDING BY FUNDING MECHANISM

Next, a set of evaluation criteria are developed, which are meant to provide corporate staff and others with a simple approach to evaluating the fit of the different candidates for co-funding based on four criteria:

- **Feasibility:** the degree to which opportunities exist to utilize the mechanism in the near-term (i.e., the next five years);
- **Leverage:** focusing on the likelihood that using a particular mechanism will result in more impact than if each of the co-funders were to invest the same amount on their own;
- **Complexity:** or the ease with which a mechanism can be deployed or combined with corporate funding; and
- **Scalability:** the potential for replication and growth in the near-term.

Before making recommendations, a set of challenges to successful co-funding are discussed. These include:

- **Missing links between corporations and projects at the right time:** To ensure funding success, corporations need to be linked with proponents implementing water stewardship projects *at the right time*. When a funding gap occurs at the project design and planning phase, it can mean missed opportunities to submit proposals for private or public funding, either because of a lack of capacity to write large, complex grant applications, or because a project proponent cannot find a commitment of funding for matching requirements.
- **Missing links between corporations and potential co-funding partners:** To date there are limited opportunities to link corporations with potential co-funders, especially federal funding programs.
- **Technical monitoring and accounting challenges:** Monitoring and accounting are at the heart of corporate water stewardship. Without adequate, tailored monitoring and accounting, corporations cannot make credible, transparent water benefit claims backed up by data, and they cannot track progress toward lowering their water risk or offsetting their or their suppliers' water impacts. These challenges include allocating benefits and credits across co-funding partners, claiming credit when corporate water stewardship funds are used for project seed funding, timing and amount of revenue generation for projects with financing elements, measuring project impact, valuing water benefits, and high-capital requirements for water infrastructure projects.



Investments in near- and long-term water stewardship are urgently needed to respond to the rapidly growing water supply crisis in the Colorado River Basin. Corporate water stewardship can play a role in this response in a number of ways.

- The basin is in dire need of strategic investments to achieve long-term water supply sustainability.
- Co-funding requires a shift in how corporations think about corporate water stewardship spending—from a focus on offsetting impacts from specific practices or links in a supply chain to partnering with funders and project proponents whose focus is on place-based and watershed-scale benefits.
- Corporations often have greater flexibility in deciding how to spend their water stewardship budgets than other funders, particularly federal and state agencies. This makes them ideal sources for matching funds or cost-sharing to unlock opportunities that, but for the corporate spending, might remain unfunded or leave benefits on the table.
- Flexibility also means that corporations should consider providing seed funding to make sure that no good project fails to get off the ground. Funding projects at early phases does come with risks of project failure. Unlike paying for completed projects or packaged benefits like watershed credits, some projects that receive seed funding may not be successful. However, this strategy has significant upside and could create opportunities for corporations to expand their impact and secure the right to fund the implementation phase of projects for which they provide seed funding.
- The major challenge facing co-funding is broadening and deepening the links between corporate staff and both project proponents and potential co-funders.
- Co-funding water stewardship projects requires carefully measuring and valuing water benefits and proportioning credit based on funding amounts and additionality (ensuring that, but for dollars provided by a given funder, specific benefit(s) would not have accrued).

As of early 2023, federal funding for water, environmental restoration, and climate change responses is at an unprecedented level. Corporations should immediately focus on finding opportunities to co-fund alongside these massive infusions of federal dollars. Corporations should also continue to develop and deepen their networks of project proponents and potential co-funders. Finally, corporations should consider increased involvement with project and funding strategy at the local and watershed scale. Instead of engaging at arm's length and seeking only to buy water benefits from shovel-ready projects, corporations could engage with impact investors, foundations, utilities, NGOs, and others to help design funding mechanisms from the ground up. Knowing that a corporate funding partner is committed to a watershed or a project could provide the confidence a group of investors needs to move forward with a new venture; the same knowledge could spur a foundation to expand investment or to turn to innovative tools like program-related investments.

The need in the Colorado River Basin now and into the foreseeable future provides the impetus for experimentation and innovation. Creative co-funding mechanisms are a natural fit in this context. They represent a meaningful way for corporations to expand their impacts beyond offsetting water use for specific business practices and provide a pathway to invest in water benefits at new and expanded scales.



1. Introduction

Water resources in the western United States and the ecosystems and human communities that depend on them are threatened by a confluence of factors including climate change driven aridification, diminishing water supplies and storage, over-allocation, and changes in demand. The Colorado River Basin (CRB) currently is experiencing these changes more acutely than any other western region. As the scale of the water crisis intensifies, all water use sectors are at risk, with threats to the economic, social, and ecological stability of the CRB. Immediate, broad-scale action is needed to help to keep the CRB from tipping further towards a catastrophic water supply crisis. Companies that operate in the CRB, or are exposed to water supply risks in the basin via suppliers or other links, are engaged in addressing some of these challenges through corporate water stewardship (CWS) efforts. While CWS alone will not solve the CRB's immense challenges, it can have a meaningful impact at local as well as watershed scales. This report is focused on one way to increase the impact of CWS in the basin: leveraging corporate spending by pairing it with other existing and emerging funding streams, referred to here as co-funding.

Corporations often have more flexibility than other funders. This flexibility is an important asset, allowing CWS funding to be deployed strategically to leverage other larger funding sources. This report discusses opportunities to leverage CWS investments with other funding sources, unlocking innovative co-funding arrangements that can help address water supply risk in the CRB. The intended audience is practitioners—people working within or consulting for companies on CWS—looking for ways to increase the impact of their CWS spending. A secondary audience is public or philanthropic water funders, water project leads, and policymakers in the CRB.

CWS plays an increasingly important role managing water in the public interest and reducing long-term business risks. Leading corporations and their partners are expanding the scale of investment and engagement. Numerous reports discuss the need for CWS, the importance of the environment to the economy, and success stories, but there are considerably fewer studies that highlight the range of emerging funding approaches and how corporate investments in water stewardship could be integrated with them (Guggisberg et al. 2017). This report is an initial step and part of a larger effort to fill that gap; it focuses on how CWS spending can catalyze and leverage cooperative funding approaches that help drive impact at a meaningful scale in the CRB.

While corporate water stewardship alone will not solve the Colorado River Basin's immense challenges, it can have a meaningful impact at local as well as watershed scales.

Section 2 briefly discusses the recent trends and current conditions in the CRB. Section 3 provides an overview of CWS and outlines why it is needed now more than ever. A description of existing and emerging funding mechanisms that are candidates for co-funding is presented in Section 4, along with case study examples of where these mechanisms have been successfully deployed to support water stewardship. Section 5 provides additional detail on the potential co-funding mechanisms through a series of blueprints and illustrative diagrams and case studies. Moving from the spectrum of possible mechanisms, Section 6 describes a criteria-based ranking exercise that can be used to help corporations identify mechanisms that would have immediate, broad, and meaningful application within the CRB. Section 7 pivots to a discussion of challenges that hinder both the implementation and effectiveness of the co-funding mechanisms. Finally, Section 8 summarizes findings, conclusions, and recommendations.

2. Colorado River Basin Hydrology

The CRB is in the 23rd year of a historic drought that ranks as the most severe in 1,200 years (Gangopadhyay et al. 2022). For nearly a century, the CRB has relied heavily on large storage reservoirs to meet demands. However, over the past 25 years, average annual demand across the CRB have exceeded annual inflows, with the balance covered by drawdowns in reservoir levels and local groundwater tables (Schmidt et al., 2022). As of August 2022, Lake Powell and Lake Mead—the two largest reservoirs in the United States and the linchpins of CRB water management—were at historically low levels, with a combined 28% of full storage capacity. With an overall trend towards aridification across the basin (Udall and Overpeck 2017), annual Colorado River flows likely will continue to be less than past levels of allocation and use. Anticipating this shortfall, in June 2022, the Commissioner of the Bureau of Reclamation (Reclamation) called for annual reductions of 2–4 million acre-feet (MAF) to protect critical reservoir elevations. The seven CRB states and Reclamation continue to negotiate over how to effectively make those reductions before reservoir elevations fall below levels required to generate hydropower and deliver water to downstream users.



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Balancing supply and demand in the CRB will require painful trade-offs. Water from the Colorado River generates an estimated \$8 billion annually in direct income for agriculture, with equivalent or greater revenues for farm services and other associated industries (de Souza et al. 2020). Water from the Colorado River bolsters the economy in a variety of other ways, providing an estimated 16 million jobs and \$942 billion in annual labor income across all industry sectors including agriculture (James et al. 2014), and contributing \$17 billion to local economies from recreational activities (Southwick Associates 2013).

With a large economy and 40 million people depending on the Colorado River, actions must be taken to stabilize the system. At the broadest level, there are three sets of tools that can help respond to and mitigate water shortages: increasing supply, decreasing demand, and reallocation. While supply-side solutions have been a key part of the CRB's history of management (e.g., construction of dams, management of reservoirs, transboundary diversions, desalination, effluent reuse, and other augmentation efforts), these solutions require substantial time, energy, financing, and legal arrangements, and will not ease the immediate challenges facing the basin. Furthermore, studies have shown them to be less cost effective than other tools (e.g., Cooley and Phurisamban 2016).



Decreasing demand and reallocation are the more immediate and cost-effective ways to slow the pace of reservoir decline and supply shortages. Options for lessening demand typically fall into two broad categories: (1) efficiency upgrades (e.g., irrigation technology improvements, low-flow fixtures, canal lining or piping, etc.); and (2) demand management (e.g., temporary or permanent fallowing of agricultural lands, turf replacement, etc.). Reallocation, which references “a change in historical patterns of water use,” is typically a transfer of water between users (or use sectors) when “the existing allocation is physically impossible, economically inefficient, or socially unacceptable.” (Garrick et al. 2019). A common example of water reallocation is acquisition of rural water traditionally used for irrigated agriculture by urban areas to increase municipal water supply.

Over the past 20 years, a series of actions and programs have been implemented to reduce demand, retain water in Lake Mead, and conserve water throughout the basin. Approximately 4.6 MAF of water has been conserved in Lake Mead through voluntary measures by California, Arizona, Nevada, Tribal Nations, and the Republic of Mexico. These measures have included the creation of Intentionally Created Surplus (ICS), system conservation water, water reserves for Mexico, and the Quantification Settlement Agreement, as well as additional conservation efforts. In sum, these efforts added 70 feet to Lake Mead’s elevation, forestalling today’s crisis by approximately six years. CWS has contributed to these measures (see Box 1) and can continue to aid in bringing greater water security to the CRB.



3. Role of Corporate Funding

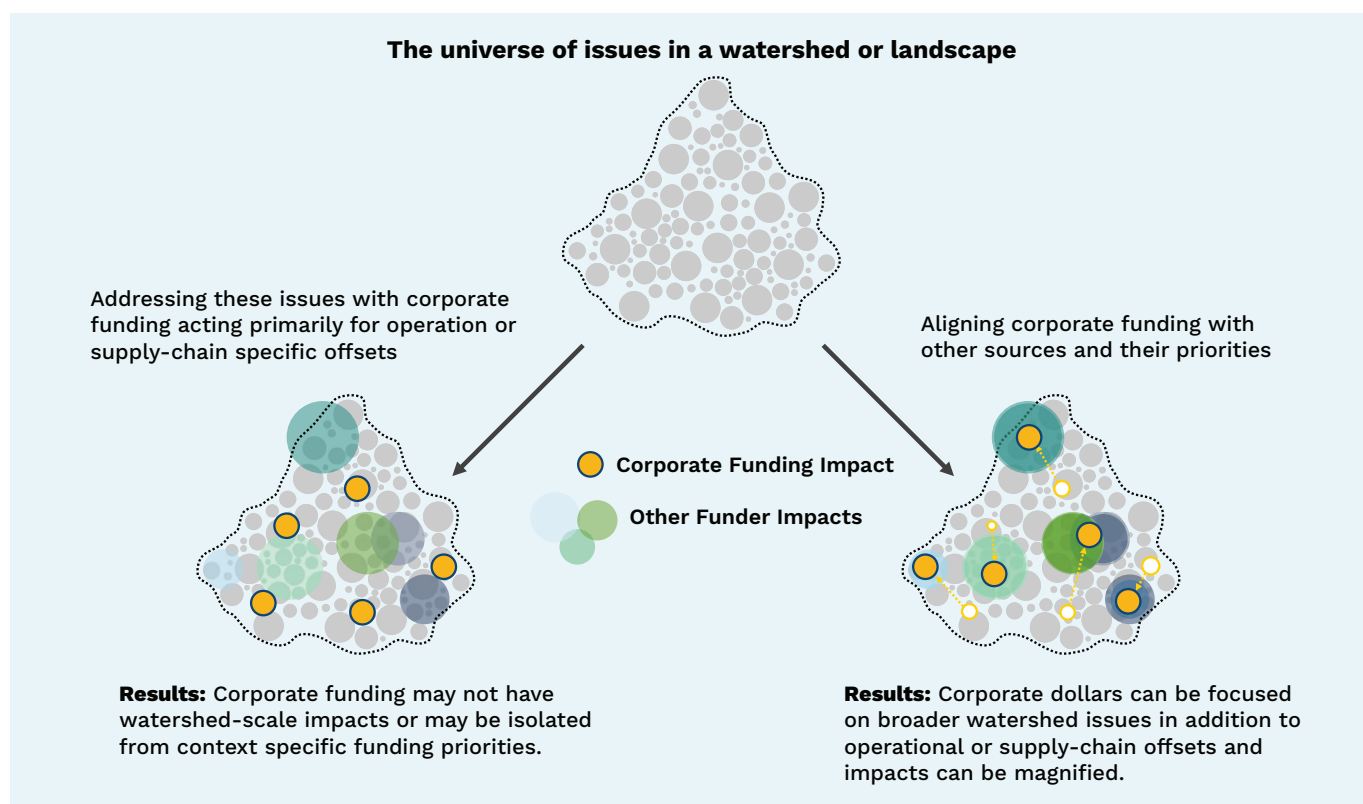
At the outset it is important to highlight the scope of CWS efforts relative to the challenges of growing water scarcity generally and in the CRB specifically. A typical CWS funding and project cycle begins when a corporation sets water stewardship goals and targets related to water use in their operations, supply chains, or both. A chip maker, for example, might set its goals based on the amount of water used by a chip manufacturing plant in a water-stressed location. Next, companies look for projects to invest in that provide volumetric water benefits: projects that save water or add water back into the watershed via conservation or other actions. Ideally, but not always, these projects are in the same watershed as the company's or supplier's impacts. These investments provide the basis for companies to claim progress toward their water stewardship goals: for each bucket of water the company uses, they restore water to the system (sometimes an equal bucket or more). Because they are aimed at the impact of a single company or a discrete part of a company's production or supply chain, CWS is inherently focused. In other words, while companies are seeking to maximize their impact, they are not trying to solve all the potential problems in a watershed. Therefore, corporate funding contributions are generally more narrowly focused relative to state, federal, and large private philanthropic funding sources.

This context is important because it highlights that the role of CWS is and will remain limited. Despite this, corporations have made meaningful progress generally, and in the CRB specifically, by reducing their and/or their suppliers' water footprints, using their collective voice to influence and inform public policy and investing in innovative and collaborative solutions (de Souza et al. 2020; Pacific Institute 2020). Also, even though CWS alone cannot solve the CRB's water supply challenges, the role of CWS has room to expand. A recent review of the largest United States companies by Ceres and Vigeo Eiris determined that only 42% have established "quantitative, time-bound water consumption and discharge goals." (Ceres, n.d.). The percentage of companies with exposure to the CRB that have established CWS programs is not known, but expanding the role of CWS in the basin will require more companies to participate and for companies to be increasingly strategic with how they spend their CWS dollars. To successfully address the dire situation in the CRB, all water stewardship efforts, corporate and otherwise, need to be significantly scaled up (de Souza et al. 2020).

The percentage of companies with exposure to the Colorado River Basin that have established corporate water stewardship (CWS) programs is not known, but expanding the role of CWS in the basin will require more companies to participate and for companies to be increasingly strategic with how they spend their CWS dollars.

Because CWS funding will always be relatively small compared to the scale of the problem, it is best focused on catalytic and transformational opportunities like innovative co-funding. The premise of this report is that co-funding with innovative existing and emerging mechanisms can help corporations tackle more complex problems at more meaningful scales in the CRB and beyond (Figure 1). Corporations often have more flexibility than other funders, particularly federal and state agencies, in deciding how to spend their water stewardship budgets. This flexibility is an important asset, allowing CWS funding to be deployed strategically to leverage other larger funding sources. Innovative co-funding, therefore, is the intentional and focused use of CWS funding alongside other funders and funding sources in new ways that expand the impact of corporate spending.

FIGURE 1. Innovative Co-Funding Expands the Impact of Corporate Water Stewardship Projects 🔗



Investigating co-funding mechanisms now is especially important given the dire need in the CRB and the opportunities currently available. On November 15, 2021, the Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Bill, was signed into law by President Joe Biden. The IIJA is an approximately \$1.2 trillion infrastructure package that includes funding for clean water and electrical grid investments over five years, from 2021 to 2026. On August 19, 2022, President Biden signed the Inflation Reduction Act (IRA), which provides funding to tackle climate change. The IRA includes \$4 billion for western states that can be spent in one of three ways: 1) to pay water users to reduce consumption; 2) to fund conservation projects that reduce demand in the upper and lower basins of the Colorado River; and 3) to support restoration of ecosystems and habitat directly harmed by drought (*Inflation Reduction Act 2022*, Section 50233).

This unprecedented availability of federal funding for water, environmental restoration, and climate change response arrives at a moment when the CRB is moving towards a full system crash. This also has the potential to heighten interest from private philanthropic funders and private investors seeking to promote beneficial water stewardship projects with some return on investment. While the amount of public and private funding potentially available to help in the CRB is substantial, most sources are constrained by a variety of eligibility conditions, matching requirements, geographic specifications, investment expectations, and other challenges. These challenges mean that while funding availability and interest are high, the ability to get money to good projects on the ground may still be constrained. Therefore, alongside its traditional role of offsetting operational and supply chain water use, corporate funding can be woven into this picture to fill gaps and catalyze funding for truly meaningful projects at scale. Understanding how to achieve this requires first describing the range of co-funding opportunities.



4. Taxonomy of Co-Funding Opportunities

This section provides broad overviews and case studies of existing funding mechanisms with which corporations might co-fund projects. While there is a large universe of funding mechanisms, this report considers a limited set that fall into two categories: **grants** which fund projects with no expectation of financial returns (including repayment of capital), and **financing mechanisms**, which provide capital with the expectation of repayment of debt with or without interest and/or an equity stake in the project (Figure 2). Financing mechanisms (which can involve public and/or private funders) discussed here include program-related investments (PRIs), revolving loan funds, and various impact investing approaches. Grants and financing mechanisms are utilized by a range of entities including government funders (federal, state, and local), philanthropic funders, corporate funders or investors, and combinations of some or all these entities.

FIGURE 2: Taxonomy of Existing and Emerging Candidates for Corporate Water Stewardship Co-Funding 

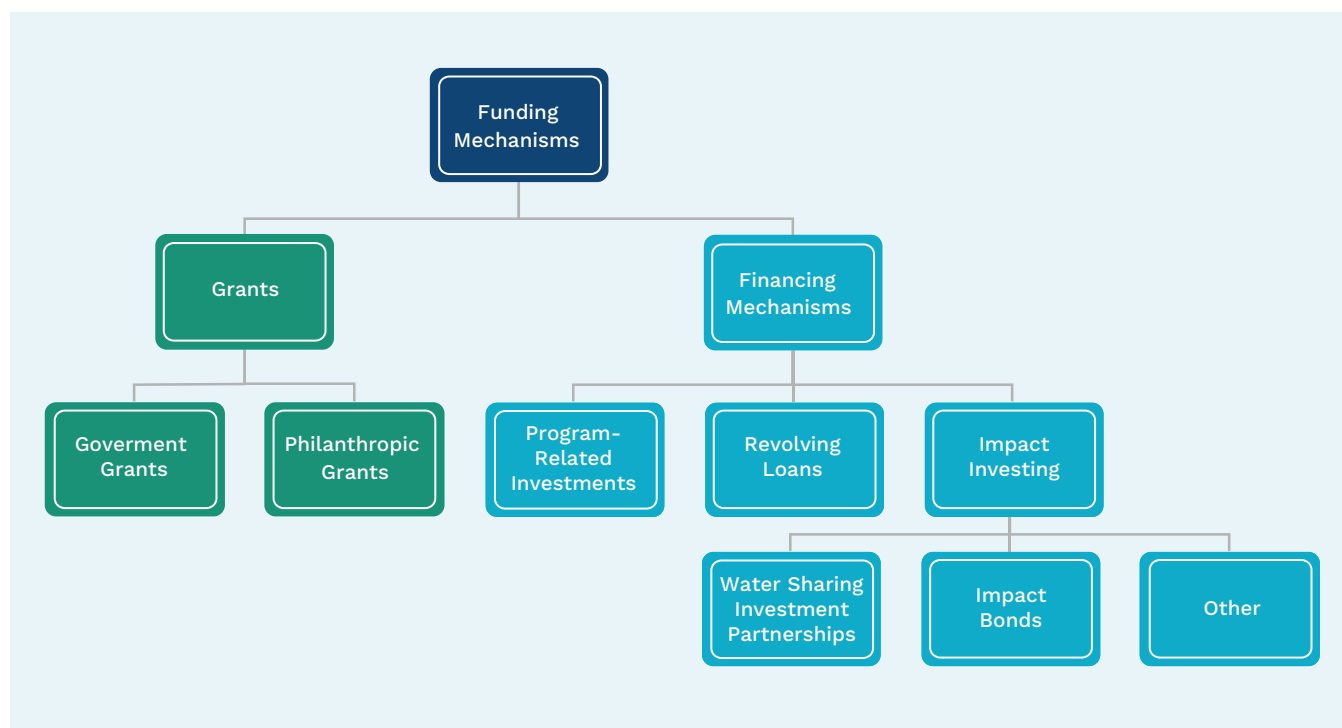


Table 1 shows the existing and emerging funding mechanisms and entities analyzed in this report for potential corporate co-funding. In addition to the mechanisms themselves and the related funders, the table also shows broadly what funders expect when they provide funding for water stewardship projects.

TABLE 1: Funding Mechanisms with Which Corporations Might Co-Fund 🔍

FUNDING MECHANISMS			
Mechanism		Who	What
Existing and emerging candidates for co-funding		Who is/are the other funder/s?	What does the funder expect from the project?
Grants	Government	Federal, state and other government entities	Performance of specific project deliverables outlined in a grant agreement
	Philanthropic	Foundation	
Financing	Program Related Investment	Foundation	Repayment of principle with little or no interest; specific project outcomes
	Revolving Loans/Funds	State agency with federal funds	Repayment of principle with low or below-market interest
	Impact Investing	Private, public entity or a combination	Repayment of principal with low or below-market interest, specific project outcomes or concessionary equity

The remainder of this section introduces and describes each of the existing and emerging funding mechanisms with which corporations might consider co-funding water stewardship projects in the CRB. Specific detail for what co-funding arrangements could look like is provided in Section 5. Additionally, illustrative case studies and examples of the different existing funding mechanisms are presented throughout the remainder of this report.

4.1. GRANTS

Grants do not require a monetary return on investment and are the most common funding pathway for water stewardship projects. Grants are often awarded competitively, through broad or targeted calls for proposals. Grants are not a novel concept for corporations and, in fact, are the mechanism by which the majority of CWS funds are currently disseminated. Corporations often provide grants in return for the right to claim benefits generated by a completed project. Because the focus of this report is co-funding opportunities rather than existing CWS grant funding opportunities, this section focuses on government and private philanthropic grants.

4.1.1. Government Grants

Government grants can be identified by the funding agency and then by the specific funding program within each agency. For example, Reclamation and the Department of Agriculture (USDA) both have numerous funding programs. Each state in the CRB also has at least one grant program related to water stewardship as do many counties, cities, and other local and regional jurisdictions.

There are two hallmarks of government grants that are important from a co-funding perspective. First, many government programs limit the location and type of entity that can receive a grant. For example, many Reclamation grant programs require grantees to be located within a Reclamation district or at least in a watershed where a Reclamation district exists. The largest Reclamation and USDA funding sources also limit their grantees to water managers (irrigation districts or municipal providers, for example) or landowners. State grant programs as well as programs from local utilities and water managers like the Salt River Project are more numerous and diverse than the large federal programs, but many of these have similar limitations.

Second, most government grants have match requirements, meaning the entity requires that grantees secure funding to pair with the government funding. The amount of match required is typically one-to-one (i.e., one dollar of match for every government dollar), but it can vary.

Though a description of all the different government grant programs is beyond the scope of this report, two examples are illustrative: Reclamation's Environmental Water Resources Projects (EWRP) Program and USDA's Natural Resource Conservation Services (NRCS) Regional Conservation Partnership Program (RCPP). The EWRP program is focused on environmental and other co-benefits that have been developed as part of a collaborative process and is intended to increase the reliability of water resources. Project types funded under this program include water conservation and efficiency projects, water management or infrastructure projects, and watershed management or restoration projects.

Each state in the Colorado River Basin also has at least one grant program related to water stewardship as do many counties, cities, and other local and regional jurisdictions.

The RCPP promotes coordination of NRCS conservation activities that expand the collective ability of agricultural producers and stakeholders to address on-farm, watershed, and regional natural resource concerns. Through RCPP, NRCS seeks to co-invest with partners to implement projects that demonstrate innovative conservation approaches, build new partnerships, and effectively deliver conservation solutions. Examples of RCPP-funded projects in the CRB include development of an integrated water supply system in Utah that includes a small storage reservoir; transmission pipelines and pressurized irrigation systems; and improving irrigation water management on at least five working ranches in three tributaries of the Gunnison River in Colorado.

BOX 1: Shifting Funding to a Pay-for-Performance Approach

In February 2022, Oregon Senator Ron Wyden introduced legislation to pilot a payment for performance approach for federal restoration funds. The objective of the legislation is to enable use of watershed-scale analytics to identify the most impactful combination of projects throughout a basin and then authorize use of federal funds to “purchase” quantified outcomes resulting from implementation of the prioritized projects (Walker 2022). In addition to providing proof of concept, the goal of the pilot projects would be to utilize the lessons learned during the pilot to improve overall program design and potentially expand it across other federal funding programs.



The proposed legislation, S. 3539, would authorize the Secretary of the Interior to establish up to five pilots to be developed and implemented under a 5-year plan (Wyden 2022). The plan would rely on advanced analytics to establish milestones, outcome targets, an implementation schedule, and timeline for achieving milestones and targets. The Department of the Interior would be authorized to use appropriated funds to leverage funding from existing federal programs and attract investments from private or philanthropic sources to accelerate greater outcome-based results.

4.1.2. Philanthropic Grants

Philanthropic grant programs vary greatly and are not easily characterized as a group. Every individual foundation has its own grantee requirements, application requirements, processes, and funding priorities. Some foundations require or encourage a match, though this is less common than it is with government grants, and many foundations have a specific geographic focus. Foundations also vary in how they select grantees. Some foundations post broad public calls for proposals and accept grant applications on a rolling or periodic basis. Other foundations select grantees privately rather than through open solicitations.

Philanthropic grants have played an important role in the CRB to date. In recent years, for example, the Walton Family Foundation has contributed significant funding to a broad array of projects and grant recipients, from non-profit groups like The Nature Conservancy and Environmental Defense Fund to tribes and public agencies. Other foundations with significant CRB investments include the Arizona Community Foundation, the Water Foundation, and the Gordon and Betty Moore Foundation.

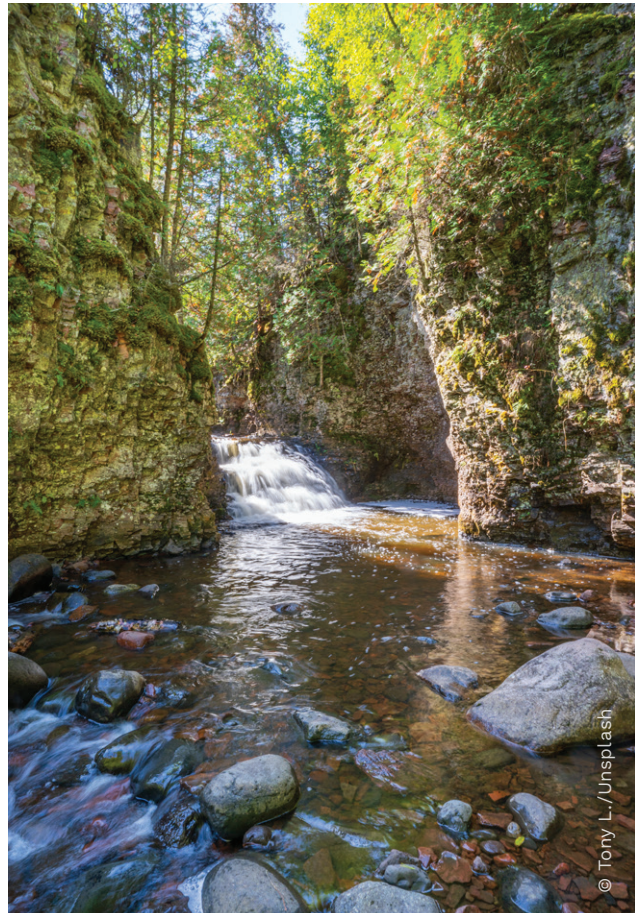
4.2. FINANCING MECHANISMS

The field of finance is huge and complex, and this report does not tackle it in depth. Instead, this report focuses on several specific types of financing mechanisms deployed and emerging in the water stewardship space. The mechanisms described here are limited to those that can be provided on favorable repayment terms, including low, below-market or no interest. Financing mechanisms may also involve providing equity to investors. In these cases, investors take ownership of part of a project in return for their funding.

Financing for water stewardship can come from both public and private sources; the mechanisms described below are divided into three classes: PRIs, revolving loan funds, and impact investing. PRIs and revolving loan funds are examples of debt financing; within impact investing there are examples of both debt financing and equity-based arrangements. While there is nothing that would prevent a corporation from taking an equity stake in a project, this is not a typical CWS strategy. Rather than equity for their investments, corporations are looking for the right to claim water stewardship benefits. For this report, projects financed in exchange for an equity stake may still be candidates for co-funding with CWS funds; in other words, CWS might provide funding to a project that has awarded an equity stake to other investors, but the assumption is made that, generally, CWS programs will not be interested in equity in exchange for their funding contributions.

4.2.1. Program-Related Investments

The legal structure for PRIs was created as part of the Tax Reform Act of 1969 (Qu and Osili 2017). PRIs involve loans from foundations with the expectation of below-market or no financial returns. The Internal Revenue Service defines PRIs as investments that meet three criteria: the primary purpose is to accomplish one or more of the foundation's exempt purposes; the investment is not for influencing legislation or a specific candidate for office; and deriving income or appreciation of property is not a significant motivation for making the loan (Brest 2016). If it meets these three requirements, a PRI can be given to either a non-profit, for-profit or other entity. One benefit of PRIs is that once funds have been paid back for one project, the initial capital investment can be used to fund additional projects over time.



BOX 2: Kickstarting a Water Quality Trading Program

In 2013, the David and Lucille Packard Foundation, along with the Gordon and Betty Moore and Kresge foundations, provided a \$5 million PRI to The Freshwater Trust (TFT) in Oregon (Packard Foundation 2013). TFT used the money to scale up a water quality trading program on the Rogue River in southern Oregon. TFT worked with landowners to restore and enhance riparian areas along the river, which provided additional river shading, helping to lower river temperatures. TFT turned this water benefit into marketable credits that it sold to a local municipality. The buyer, the City of Medford, was required to reduce the impact of its release of warm, treated effluent into the Rogue River and so was willing to pay TFT for the water temperature benefits. In turn, TFT used payments from Medford for repayment of the PRI. Interest on the loan was set at 1% per year and repayment terms were based on the greater of either a fixed escalating principal repayment or a percentage of credits sold (TFT 2021 Audited Financial Statement). A PRI was well suited to this project because it helped TFT make the up-front investments necessary to create quantified outcomes that could be marketed to Medford.



Besides the requirement for repayment, PRIs are distinct from grants because they often provide capital for an effort that can generate returns. Whereas grants fund projects regardless of monetary returns, PRIs function more like other private financing arrangements; they are often used as seed or working capital for socially or environmentally beneficial enterprises (see Box 2). PRIs can also play a role in some of the impact investing approaches described in Section 4.2.4. In other words, PRIs are sometimes a vehicle for foundations to operate as impact investors. However, PRIs are not listed as part of the impact investing toolset because they are a unique way for foundations (and only foundations) to invest in projects. Not all foundations use PRIs, and PRIs are not a well-known funding tool. They have seen relatively limited use compared to grants and revolving loans. However, in the case of projects with the potential to generate returns, such as water stewardship projects with volumetric benefits, PRIs can be a powerful tool.

4.2.2. Revolving Loans: State Revolving Loans

Revolving loan funds are pools of capital from which low-interest loans can be made for projects; repayment of the loans and interest payments are then reinvested in the funds. In this way, revolving loan funds can be sources of capital that are recycled repeatedly to fund multiple projects over time. The most common type of revolving loan funds are state revolving loan funds (SRF). A typical state fund is managed by a state drinking water or environmental quality agency using both state and federal funds (EPA 2021). Traditionally, SRF loans have gone to gray infrastructure for drinking water and wastewater treatment; however, SRF loans now are increasingly being deployed to develop green infrastructure as well (EPA n.d.). SRFs are not the sole form of low-interest government loan program, but they are the one form solely focused on watershed benefits and are therefore the only one highlighted in this report.

4.2.3. Revolving Loans: Private Revolving Loan Funds

While SRFs have been operating successfully for decades, revolving loan funds set up with private capital are also emerging. BlueCommons, for example, is working on financing structures to support projects that address water scarcity and sustainability challenges, with a current focus in the western US. The emergence of private revolving funds could allow for funding a broader range of project types than SRFs, which are somewhat limited in what they can fund based on federal clean water legislation; such limitations would not apply to private funds. Private funds could provide ideal frameworks for co-funding as they are, by their nature, set up to be cooperative mechanisms.

BOX 3: Pilot Revolving Fund Supports Water Cooling System Upgrades

Industrial water use (for example, water for cooling data centers) can comprise a significant portion of municipal water demand; however, it can be difficult to implement conservation measures for industrial use. One exception is wet-cooling systems, which can be upgraded to increase the number of times water can be reused, saving substantial amounts of water. Beginning in 2022, the City of Phoenix, with corporate funding through Business for Water Stewardship, is partnering with BlueCommons on a pilot project to launch an initial cooling water conservation program (KTAR 2022). The Cooling Water Conservation Fund will partner with municipal water providers in the southwestern United States through a revolving fund that can provide upfront capital for water cooling system upgrades for customers. Funds to repay loans for these upgrades are anticipated to come from cost savings realized by industrial water users.



4.2.4. Impact Investing

The investment platforms discussed here are limited to those seeking specific watershed benefits and impacts with low return on investment expectations and favorable financing terms for project proponents: revolving loan funds, water sharing investment partnerships (WSIPs), and impact bonds.

4.2.4.1. Water Sharing Investment Partnership

WSIPs are financing mechanisms that deploy capital within existing water markets to purchase water assets that can be used to return water to nature or can be leased back to water users for irrigation or other uses (Richter 2016). WSIPs are an example of an impact investing tool where investors are invited to take an equity stake in the project. Specifically, investors in a WSIP might become part or full owners of the water rights/assets that are purchased and managed by the partnership. Funding from private investors, philanthropies, and public funding sources can individually or jointly be used to fund a WSIP. Water leased, purchased, or reallocated by the WSIP can be directed to

rivers, riparian areas, and shallow groundwater basins (see Box 4). Returns on investments can be generated in several ways, including from improved agricultural revenue generation or through leasing water to downstream municipalities, industries, or storage reservoirs. It is important to note that purchasing, leasing, or reallocating agricultural water rights can be contentious due to concerns about speculation and community impacts (Runyon and Williams 2021).

BOX 4: Water Sharing Investment in Australia

In 2015, The Nature Conservancy, in partnership with natural capital investment firm Kilter Rural, launched its first WSIP in the Murray-Darling Basin in eastern Australia (Richter 2016). The Murray-Darling Basin Balanced Water Fund is designed to supplement water dedicated to the environment by governmental entities and, more specifically, deliver water to wetlands that were not receiving governmental water. With the aim of generating returns for investors by leasing water allocations back to agricultural producers and the farming community, the partnership tries to balance providing water for the environment with supporting farmers (and deriving revenue).



In 2020, the fund reported almost \$70 million in assets under management and an annualized return of 14.1% (Kilter Rural, n.d.). In 2022, Kilter Rural announced that, in addition to the almost 3,100 acre-feet donated this fiscal year, it would donate approximately 4,400 acre-feet of water in the next financial year to support 21 wetlands (May, 2022). It is important to note that Australian water law is significantly different from United States water law, where WSIP concepts have so far come up against hurdles that did not stand in the way of the Murray-Darling Basin fund.

4.2.4.2. Impact Bonds

In a traditional bond, an issuer (the borrower) sells bond certificates to investors; investors receive periodic interest payments at a predetermined interest rate for a predetermined period until the bonds mature, at which point the issuer pays the principal back (at face value) to the investors. Impact bonds are a twist on this formula. They are agreements between a public sector entity borrower and one or more investor(s) where investors provide upfront capital that is repaid by the borrower depending on specific outcomes, rather than on a set schedule and/or at a set interest rate. Impact bond agreements generally provide for repayment of principle if project outcomes meet basic expectations and repayment can exceed or be less than the principle amount if outcomes are better or worse than expected, respectively (Odefey and Russell 2020).

As with other financing mechanisms, impact bonds are best deployed in settings that can produce a clear revenue stream or deliver some financial return, which may even be calculated as cost savings that accrue to the beneficiary of the project (Abell et al. 2018). In addition to revenue generation from a bond-funded project, co-benefits (for example, enhanced tourism revenues) can be calculated as part of the benefits of a project and wrapped into the repayment plan.

5. Co-Funding Strategies and Blueprints

This section provides conceptual details on how corporate funding could be paired with the mechanisms described above. The goal of this analysis is to highlight how co-funding can drive greater impact for CWS efforts in the CRB. With this in mind, co-funding strategies are organized based on five strategic roles for CWS. These include providing:

- Seed funding to get projects off the ground;
- Required match funding for grants;
- Non-required match funding to increase the competitiveness of grant applications;
- Funding to increase total project investment; and
- Funding to repay loan principle.

Figure 5 summarizes the potential corporate co-funding role(s) for each of these funding mechanisms. The remainder of this section discusses these roles in more detail and provides hypothetical blueprints for how each co-funding mechanism could work.

TABLE 2: Roles of Corporate Funding by Funding Mechanism

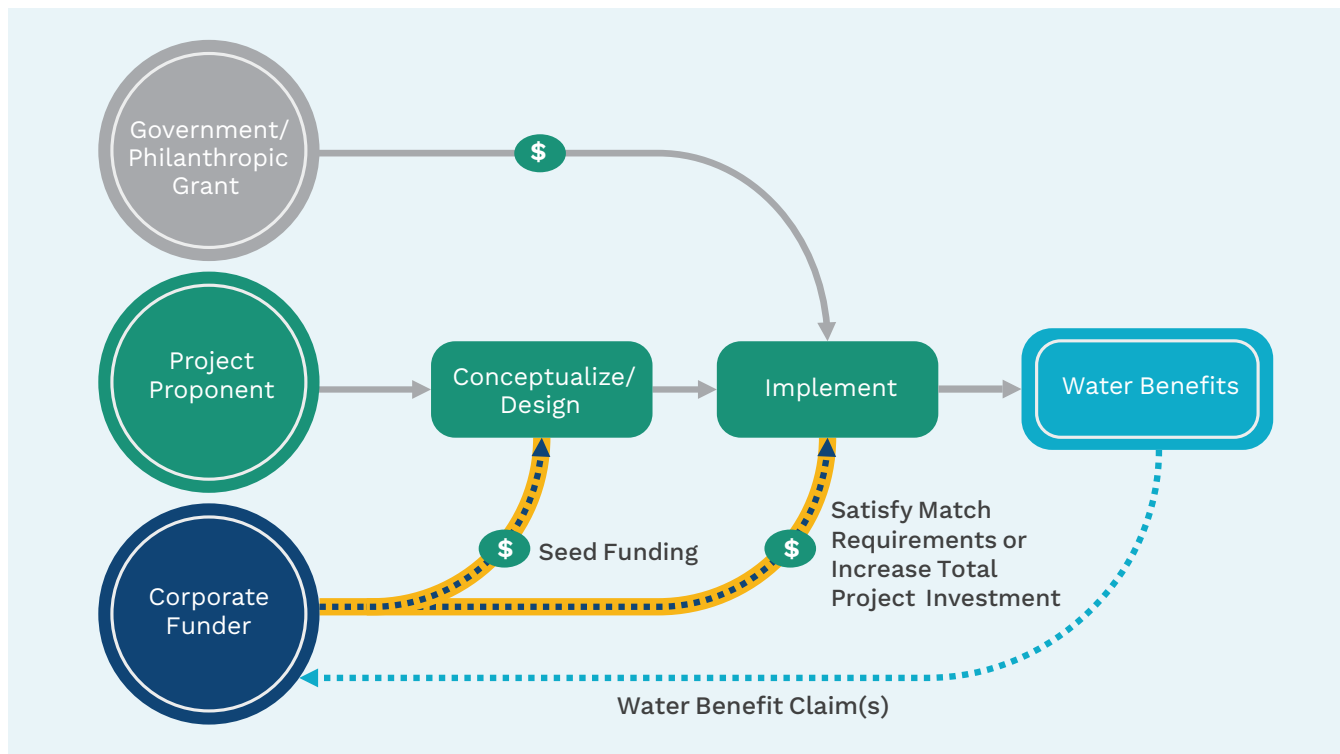
Existing and Emerging Candidate Mechanisms for Co-Funding		Strategic Co-Funding Roles for CWS				
		Seed funding	Required match funding	Non-required match funding	Funding to increase total investment	Funding to repay loan principle
Grant	Government	●	●			
	Philanthropic	●		●		
Financing	Program Related Investment				●	●
	Revolving Loan Funds				●	●
	Impact Investing				●	●

5.1. CO-FUNDING WITH GOVERNMENT AND PHILANTHROPIC GRANTS

Corporate co-funding can be used in two specific ways with both government and philanthropic grants: as seed funding, or to help meet required or discretionary match requirements (Figure 3). As of late 2022, a substantial amount of government funds are currently available in the CRB. The grant application process for these funds, however, can be time consuming and complex. Project proponents who lack a grant writer or other capacity to develop detailed grant applications may miss out on opportunities to secure government funding. One co-funding approach, therefore, would be for corporations to provide seed funding for the conceptual, design, and application phases of projects seeking to secure government funds. Small outlays of corporate funding for these phases could unlock significant grant funding for impactful water stewardship projects that would not otherwise be accessible to project proponents. Corporate seed funding could be conditioned upon a first right of refusal to fund or co-fund the implementation phase of the project and claim a proportional amount of the resulting water benefits.

For projects that have already secured a government grant, corporations could help project proponents meet required match conditions. Securing match, often equal to or greater than the government contribution to a project, is critical, as the government contribution cannot be utilized without it. In exchange for helping meet mandatory match requirements, corporations would be able to claim water benefits at least proportional to their funding contribution (see Box 5). Calculating and allocating benefits for funded projects is discussed in more detail in Section 7.3.

FIGURE 3: Blueprint for Co-Funding Strategies with Government and Philanthropic Grants 🔗



BOX 5: Cooperative Funding Responses in the Colorado River Basin

In January 2019, Arizona Governor Doug Ducey signed Arizona's Drought Contingency Plan (DCP) into law. The DCP was intended to reduce water supply risks to Arizona by urging conservation, reducing demands, and stabilizing reservoir storage by curtailing water deliveries and leaving water in Lake Mead. Most of the actions under the DCP were implemented by the central Arizona agriculture sector and municipalities.

The reservation lands of the Colorado River Indian Tribes (CRIT) include over 50 miles along the Lower Colorado River. As part of their land and water treaty agreements with the United States government, they have nearly 720,000 acre-feet of senior water rights. To help Arizona fulfill DCP obligations, CRIT developed a "System Conservation" project, which contributed 150,000 acre-feet of water over three years to help bolster water levels in Lake Mead. As part of that project, CRIT received \$38 million as compensation for fallowing 10,000 acres of farmland to make that water available under the DCP.

Over \$4 million of the funding to support CRIT's System Conservation project was provided by leading corporations and brands: Intel Corp; Google; Microsoft; Procter & Gamble; Reformation; Facebook; Keurig Dr Pepper; Ecolab; Cascade; Cox; The Coca-Cola Foundation; Silk; Target; Brochu Walker; and Swire Coca-Cola, USA. This collective co-funding arrangement is the largest of its kind and complemented funding from a philanthropic match and the State of Arizona (Shiple and Kowalski 2020).

As one of the most important projects contributing to water supply stability in Arizona, this project has seeded more efforts to build on the success of this collaboration. There are innovations underway to co-fund initiatives aimed at modernizing irrigation and water delivery systems on tribal lands and support additional System Conservation projects.



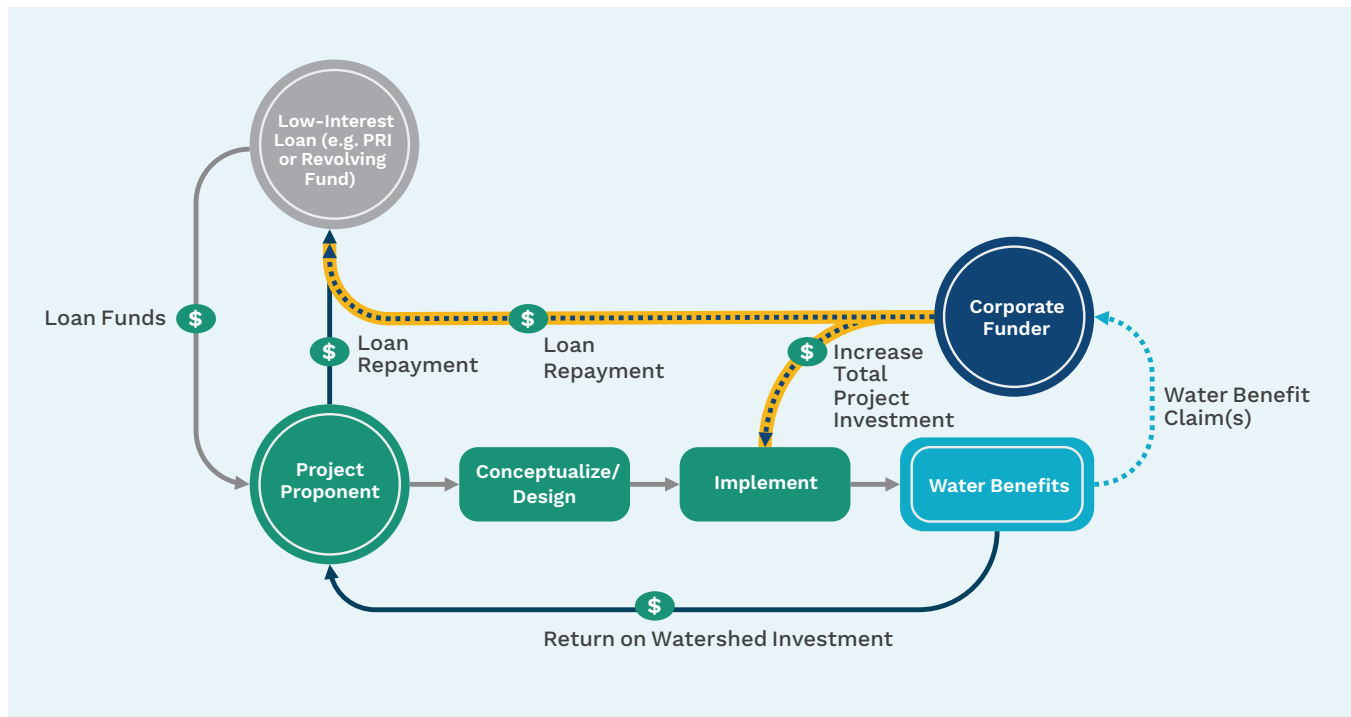
The approach for co-funding with foundation grants is like that for government grants. Corporations can provide seed funding for the conceptual, design, and application phases of projects.

Many foundations have application processes that are less complex and time consuming than government entities, but this is not always the case. Foundation grants also sometimes have match requirements, but more often match is used by applicants to demonstrate commitment and support from other funders and partners. Foundations like to leverage their investments, and applications that bring matching funds tend to be more competitive. Therefore, corporations can provide discretionary match funding for foundation grants, which could increase the likelihood of a project being funded and/or could increase the overall reach and impact of a project.

5.2. CO-FUNDING WITH PROGRAM RELATED INVESTMENTS

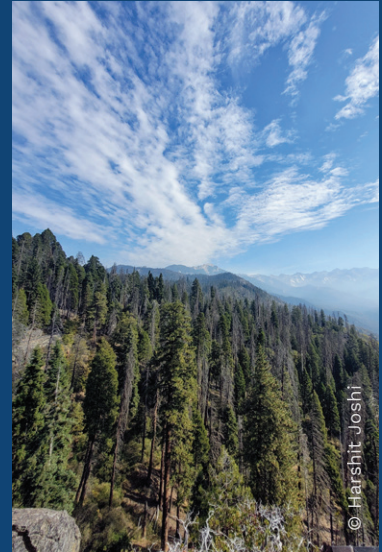
Corporations might co-fund with a foundation providing a PRI in two different ways (Figure 4). First, a corporation can simply add funding alongside a PRI. In this case, corporate funding would be complementary to the PRI, expanding the project's scope or scale. The second approach is for corporations to partner with PRI recipients to assist with loan repayment. Corporations can assist with loan repayment by purchasing the water benefits generated by the PRI-funded project (see Box 6).

FIGURE 4: Blueprint for Co-Funding Strategies with Low-Interest Loans 🔗



BOX 6: Forest Watershed Impact Bond

Blue Forest Conservation launched a Forest Resilience Bond pilot in the North Yuba River Watershed in California in 2018. The bond raised \$4 million for a \$4.6 million project to restore 15,000 acres of the watershed (Woolworth and Knight 2019). Restoration included a variety of forest treatments to reduce fire risk and watershed impacts from wildfires. Repayment of the \$4 million investment came from grants awarded by a state agency, retained receipts from the US Forest Service (funds generated from timber harvesting contracts where the value of the harvested timber is greater than the costs of the timber sale) and the local Yuba Water Agency (Odefey and Russell 2020). The \$4 million initial investment came from a combination of foundation PRIs with very low return expectations, and a market-rate investor, CSAA Insurance, who saw benefit in reducing fire risk to its insured community and corporate investment from Danone North America, through its brand Silk. A second \$25 million Yuba Forest Bond was announced in October 2021 to fund an additional 48,000 acres of restoration (Blue Forest 2021). The mix of investors in this second round is like the first, including Danone, CSAA Insurance, and two foundations providing PRIs as part of the funding package.



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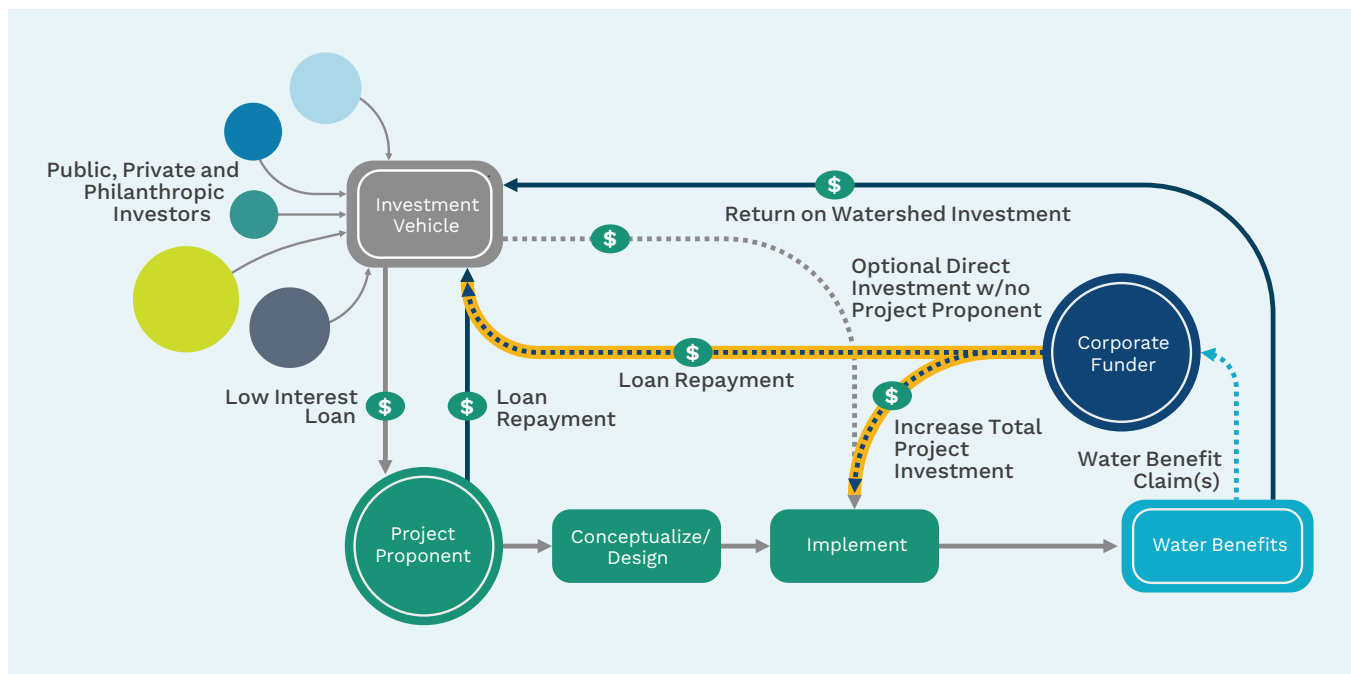
5.3. CO-FUNDING WITH REVOLVING LOAN FUNDS

The approach for corporate co-funding alongside revolving loan funds, including SRFs, mirrors the PRI co-funding approach with the exception that it is unclear whether corporate funding might be used for project implementation (Figure 4). In theory, a borrower could use corporate funding to reduce the amount they need to borrow, or could use corporate funding after the fact to help repay borrowed funds. The most likely fit for corporate co-funding is green infrastructure projects that have benefits to the project proponent, like stormwater management, but also have co-benefits like aquatic and riparian habitat or floodplain and shallow groundwater reconnection. In this role, the corporation's funding can help the project proponent repay the loan; importantly, these loan payments are reinvested into the revolving fund. In other words, to the extent that a corporation is helping to pay revolving funds back, the corporate dollars will be reused by the fund for other beneficial projects. The basis for a corporation to claim benefits from helping a project developer repay SRF loans would be that, but for the corporate funding, the project proponent could not afford to develop or continue the project and the benefits would not exist or would stop.

5.4. CO-FUNDING WITH IMPACT INVESTING

The impact investing category includes multiple mechanisms and potential combinations of funders and investors. One impact investing approach is a revolving loan fund, though unlike SRFs, the source of funding is a combination of private, public, and philanthropic entities. In the case of an impact investment operating as a revolving loan, corporate co-funding would mirror the approach depicted in Figure 4, where the corporation's funding is tied to producing water benefits and/or co-benefits resulting from the funded project (Figure 5).

FIGURE 5: Blueprint for Co-Funding Strategies with Impact Investing 🔗



In most impact investing scenarios, the return on investment from a project will accrue to the investor or collection of investors. When the investment approach involves providing up-front capital to a project proponent on financing terms (debt or equity), corporations can choose which side of an investment to co-fund: paying the project proponent for water benefits (which in turn helps the proponent with repayment of the loan), or investing in the project itself alongside other impact investors. Importantly, if a corporation is co-funding a project alongside other investors, the corporation will not likely want equity or a financial return on their funding. While there is nothing that would prevent a corporation from seeking profit or an equity stake, CWS funding is provided in exchange for the right to claim specific water benefits; profit or equity-based benefits could undercut claims to be providing stewardship benefits. Regardless, it is important for the corporation and the other investors to negotiate and agree on who can claim what and how much/many water benefits. Some investors may be concerned with a specific benefit claim while others may not. Confirming this before co-funding is important.

As an example of co-funding with an impact investing mechanism, in a WSIP, corporate co-funding could be deployed to lease water from the partnership to dedicate to an environmental use like watering new riparian habitat plantings. CWS funds would be used by the WSIP to satisfy investor expectations, but for the corporation, their investment would be directly tied to water stewardship outcomes.

In the case of an impact bond, a corporation would likely purchase the water benefits. They would join the ranks of watershed stakeholders for whom the impact bond is providing benefits and pay accordingly. In the context of a forest restoration bond, for example, a corporation could purchase the volumetric water benefits from forest thinning that accrue from additional precipitation reaching the ground in the treated forest and boosting groundwater and connected surface water levels (as well as co-benefits like fire reduction, infrastructure protection, climate resilience, and others).

BOX 7: Expanding Impact Investing Opportunities in the Colorado River Basin

Quantified Ventures, a social and environmental investment firm, initiated a Colorado River Basin Challenge in June 2022 to work with select organizations on innovative solutions to the rapidly developing water supply crisis in the basin (Quantified Ventures 2022). Through grant funding, Quantified Ventures will offer their technical expertise at no charge to organizations to design, finance/fund, and scale investible, cost-effective solutions that deliver beneficial outcomes for CRB ecosystems and communities. They are targeting environmental and resilience initiatives that:



1. Prioritize cost-effective solutions for water demand management and supply enhancement.
2. Promote the leveraging and pooling of environmental funding and financing.
3. Provide scalable and equitable solutions.

Quantified Ventures has initiated six regional outcome-based financing challenges, which have produced numerous new initiatives and transactions to support socially and environmentally beneficial outcomes. Within these challenges, they utilized a range of solutions, including environmental impact bonds, conservation agriculture, and SRF water solutions. Quantified Ventures selected its CRB projects in the fall of 2022. There is now an opportunity for corporations to invest in projects developed under the program and that may strive to leverage federal funding with matching requirements.

6. Evaluation Criteria for Selecting Co-Funding Opportunities

This section discusses a set of evaluation criteria that can be used to assess the degree to which the existing and emerging funding mechanisms that are candidates for co-funding support this report's working definition of innovative co-funding for the CRB: the use of a flexible funding stream like a corporation's water stewardship budget in concert with other funding sources to drive impacts that the individual sources alone might not achieve. The four identified evaluation criteria are relevance, leverage, efficiency, and scalability. It is important to note that the evaluation criteria are not meant to be applied to the existing and emerging mechanisms themselves, but rather are discussed as an analytical tool for evaluating each as a candidate for co-funding alongside CWS funds.

Feasibility measures the degree to which opportunities exist to utilize the mechanism in the near-term (i.e., the next five years). More specifically, it addresses the question of whether there are willing and ready co-funders (i.e., entities that have or can access funding corporations can't access on their own) or partners (i.e., entities that can provide local context/knowledge that improves project design, implementation, and outcomes).

Leverage focuses on the likelihood that using a particular mechanism will result in more impact, in this case greater water benefits, than if each of the co-funders were to invest the same amount of funds on their own. For example, if two corporations each provide a \$100,000 grant to an NGO, the total investment would be \$200,000, whereas if the NGO needed \$200,000 as match to receive funds from a federal or state source and those two corporations each used their \$100,000 to provide that match, the total investment would be \$400,000. In addition, a project would go forward that may otherwise not have happened.

Complexity is the ease with which a mechanism can be deployed or combined with corporate funding: is there a straightforward path to implementation and coordination, or an example(s) of how the mechanism has been implemented in an innovative way that could be referenced, or built upon? Alternatively, is the approach potentially complex or cumbersome, requiring, for example, sophisticated legal or other expertise?

Scalability as defined in this report builds on the need for large-scale actions in the CRB. While many of the mechanisms may have the potential for replication or scalability in the longer term, they are evaluated here on their potential for short-term scalability.

While both the actions being evaluated and the criteria used to evaluate them are different, the Organisation for Economic Co-operation and Development Development Assistance Committee (OECD DAC) Network on Development Evaluation (2022) includes two relevant principles for using evaluation criteria (Box 8).

BOX 8: Principles for Using Evaluation Criteria

Principle 1:

To support high quality and relevant evaluation, the criteria should be applied thoughtfully.

Criteria need to be considered in the context of the individual evaluation, the action being evaluated and the stakeholders involved. How criteria are interpreted and analyzed should be informed by both the evaluation questions (what are the criteria being used to find out) and how the answers to the questions will be used.

Principle 2:
























Criteria should not be applied mechanistically, but rather, their use should align with the purpose of the evaluation.

The overall evaluative analysis and that of each criterion should be consistent with the evaluation's purpose and the evaluator's needs. In addition, the rigor applied should conform to the time and resources available.

Note: Adapted from OECD DAC Network on Development Evaluation 2022

Following these guiding principles, the funding mechanism discussed in this report were qualitatively evaluated using the identified criteria (Table 3). Each mechanism was given a low, medium, or high score for each criterion.

TABLE 3: Evaluating Existing and Emerging Mechanisms as Candidates for Co-Funding with CWS Funds 

<div> HIGH  MEDIUM  LOW  </div>					
Type	Mechanism	Feasibility	Leverage	Complexity	Scalability
Grants	CWS Co-Funding with Government Grants				
	CWS Co-Funding with Philanthropic Grants				
Financing	CWS Co-Funding with PRIs				
	CWS Co-Funding with Revolving Loans				
	CWS Co-Funding with Impact Investing				

In general, under this report's definition of near-term, innovative co-funding opportunities for the CRB, grants score higher than financing mechanisms. Both government and philanthropic grants score high for feasibility because they represent immediately available, well-known, and widely used funding pathways; funders are looking for opportunities to support watershed projects in the CRB now and substantial amounts of funding are available (for example, the \$4 billion recently announced under the IRA). Government grants scored highest because of the significant near-term potential of the IJIA and the IRA, and for the leverage opportunity they present due to matching requirements. Large federal and some state funding programs are also scalable because they have significant amounts of money available and can be deployed across the entire CRB and beyond. Finally, even though individual grant applications may be complex, grant money moves from both government and philanthropic sources to projects on a well-worn path with few surprises or untested methods.

Financing options score lower on feasibility because, in general, there is less clearly identified money available. Also, while powerful, many of the financing approaches have only emerged recently and are still in pilot phases. Investors are motivated to expand on existing pilots and try new approaches as well, but these mechanisms need more testing and refinement to increase their near-term feasibility. Financing is also inherently more complex; repayment obligations, even with simple no- or low-interest terms, implicate a greater degree of legal complexity and require a level of sophistication that exceeds that required for grants. Similarly, impact investing strategies run a spectrum from relatively simple revolving loan funds to significantly more complex and intricate financial mechanisms.

The results of this ranking exercise should not be read to imply that grants are objectively “better” than financing mechanisms. Instead, the results suggest that grants present a straightforward and feasible opportunity for co-funding in the CRB today. This is largely driven by the fact that large amounts of funding are available immediately and can be granted to projects through broadly accessible pathways. Financing mechanisms, by nature of being more innovative and inherently more complex, score slightly lower. They have tremendous potential and should be considered viable options for co-funding with the understanding that they may require more due diligence, time, and expertise to fully evaluate for fit with CWS goals and needs.

While corporations ultimately need to select funding mechanisms and projects that align with their internal needs and water stewardship goals, the results of this ranking exercise suggest that government grants provide an immediate and viable co-funding opportunity for corporations if willing project partners eligible for federal funding can be found.

Government grants scored highest because of the significant nearterm potential of the IIJA and the IRA, and for the leverage opportunity they present due to matching requirements.



7. Challenges

Challenges to corporations successfully implementing the identified co-funding approaches include:

- The lack of a consistent link between corporations and project proponents at the incubation phase of project development;
- Limited knowledge of and opportunities to link corporations directly with potential co-funders, including large federal funding agencies; and
- Technical and accounting hurdles.

7.1. MISSING LINKS BETWEEN CORPORATIONS AND PROJECTS AT KEY JUNCTURES

To ensure funding success, corporations need to be linked with proponents implementing water stewardship projects at the right time. When a funding gap occurs at the project design and planning phase, it can mean missed opportunities to submit proposals for private or public funding, either because of a lack of capacity to write large, complex grant applications, or because a project proponent cannot find a commitment of funding for matching requirements. Linking corporations to project proponents before projects are formally begun is particularly challenging. It requires CWS staff to have relationships with project proponents that facilitate funding requests for conceptualizing projects and/or developing project proposals.

Bonneville Environmental Foundation (BEF) works to connect corporations to project funding opportunities, including opportunities to fund projects at early phases (see Box 9). BEF is active in the CRB and has successfully catalyzed co-funding for numerous high-profile projects in the basin. Corporations can coordinate with BEF to find project opportunities, including specifically indicating when they are willing to consider projects in development rather than, or in addition to, shovel-ready projects or project outcomes. Similarly, the California Water Action Collaborative (CWAC) is a multi-stakeholder platform that helps connect funders across sectors both to each other and to innovative water projects (de Souza et al. 2020).

To ensure funding success, corporations need to be linked with proponents implementing water stewardship projects at the right time.

Another set of approaches corporations might consider is issuing formal requests for proposals (RFPs), conducting regular, periodic open project solicitations, or partnering with established funders who already have an RFP process for water stewardship projects. Publicizing a willingness to fund in a specific area or fund a specific type of project could help connect corporations to project developers they might not otherwise meet. Part of the RFP process can include developing an understanding of possible co-funders working with RFP respondents. Ranking RFP submissions, for example, could include criteria that favor projects with existing or proposed funding to match corporate contributions. Ideally, RFP-based approaches should incentivize new project development rather than targeting existing projects. The best way to do this is to begin publicizing potential funding availability long before the RFP takes place, signaling a demand for projects and allowing time for project development.

BOX 9: Water Restoration Certificates and Connecting Corporations to Project Developers

Water Restoration Certificates (WRCs), Developed by BEF, are a funding vehicle that provides a currency for corporate investment in specific volumetric outcomes that result from a water stewardship project. The currency is based on a restored volume so that, for example, one certificate unit equals one acre-foot or other volume of water that has been verified as resulting from a project. Certificates are generated from a range of project types, including water transactions, watershed function restoration, and improved water-use efficiency.



Water saved and restored through investment in a project must be verifiable for water certificates to be utilized and are usually verified by a third-party expert. This volume is then registered and tracked over time as a requirement of the certificate, providing the investor confidence in the quality and validity of its impact.

BEF pioneered the water certificate approach over a decade ago. One WRC equates to 1,000 gallons restored to benefit people or nature. BEF's WRCs align with the United Nations Sustainable Development Goals, qualify for Alliance for Water Stewardship certification, count toward LEED certification, qualify for 1% for the Planet membership, and apply to B Corp certification.

Along with the innovation of WRCs themselves, BEF has pioneered a role connecting corporate funders to project proponents and projects in the CRB and beyond. BEF's work provides a template for one way to overcome the lack of connection between corporate water stewardship staff and project developers on the ground.

7.2. MISSING LINKS BETWEEN CORPORATIONS AND POTENTIAL CO-FUNDERS

To date, there are limited opportunities to link corporations with potential co-funders, especially federal funding programs. This is especially important now (early 2023) when significant federal funding is available; however, the practical realities of accessing this funding reveal several challenge areas.

1. **Project Readiness:** Many of the funding programs that are candidates for co-funding arrangements are aimed at “shovel ready” projects. Many CWS programs have largely focused on shovel-ready programs themselves. These are projects that have already completed any necessary scoping, planning, permitting, engineering, or design work and are ready to begin implementation. Focusing only on shovel-ready projects limits new and emerging projects that may be responding to worsening hydrological conditions or are positioned to offer a range of economic, social, and environmental co-benefits.

2. **Eligible Applicants:** Each federal funding program has unique eligibility requirements for applications. Often, the applicant must be a state, regional, or municipal agency, even if the project idea was developed by an NGO or community group. These eligibility restrictions require substantial, and often unfunded, upfront partnership development, and adds a layer of management and oversight complexity.
3. **Funding Administration:** Both the IJJA and IRA were developed, approved, and funded remarkably fast. However, in the speed of approval, there was not enough time to plan for an orderly application and dispersal system for those funds. As a result, agencies that are understaffed are responsible for managing and deploying the funds in already existing programs, which limits the amount of innovation and support for new projects and project types.

Given these challenges and the complexities of federal funding programs, creative approaches are needed to find entry points for corporations to leverage, match, or complement federal funding. For example, when connected to project developers at the right time, corporations could provide support for required engineering, planning, and design studies, or offer matching funds for activities that are outside the parameters of a federal grant. To meet CWS goals, this would need to be done in concert with specific agreements, allowing corporate funders to claim water benefits from projects that ultimately result from their funding.

These challenges are not unique to IJJA/IRA funding. Numerous other federal and state grants, as well as private philanthropic grants, may have similar requirements and constraints. Opening and expanding connections between corporations and potential co-funders, therefore, is a priority. Direct relationships between corporations and possible co-funding partners would help corporations understand the intricacies of various funding programs. This would also promote broader understanding within foundations and government funding agencies of the potential role corporations might play in leveraging their funding.

One additional challenge in linking corporations with possible co-funding partners is in the realm of impact investing. Here, as with government and foundation grants, the lack of direct relationships means corporations may not be introduced to projects during early phases when they might play a seed funding role. This challenge cuts both ways: corporations might not know about funding opportunities, and project developers might not know about the availability of corporate funding.

As corporations look to play a growing role in funding water stewardship projects, relationship building will be critical.

As corporations look to play a growing role in funding water stewardship projects, relationship building will be critical. Relationship building can be both broad and focused. To build a broad network, corporations should look for conferences and other gatherings of funders and project proponents. Focused networking is also critical and can enable companies to embed themselves deeply within an important region or watershed. For this purpose, companies should look to tribal partners, local and regional water utilities, cities and other local jurisdictions, watershed groups, and foundations with specific regional foci. Deepening connections with place-based, high-impact

partners will lead to more and better watershed project opportunities. At their heart, co-funding approaches all rely on partnerships which, in turn, are built through networking and relationship-building at both large and focused scales.

7.3. TECHNICAL MONITORING AND ACCOUNTING CHALLENGES

This section briefly highlights technical and accounting challenges to successful co-funding. Monitoring and accounting are at the heart of CWS. Without adequate, tailored monitoring and accounting, corporations cannot make credible, transparent water benefit claims backed up by data and they can't track progress toward lowering their water risk or offsetting their or their suppliers' water impacts. Monitoring and accounting can be especially complex when funding for projects comes from multiple sources or is channeled through complex funding structures like revolving loan funds or other impact investing mechanisms.

7.3.1. Allocating Benefits and Credit Across Co-Funders

When a corporation is a co-funder along with federal, philanthropic, or other partners, it may be necessary to determine how water benefits are allocated across project partners. In their working paper on methods for volumetric water benefit accounting, Reig et al. (2019) propose that the allocation be determined and agreed upon by all partners before implementing a project. Allocating benefits based on cost contribution is a common approach. Corporations claiming undue or excessive credit can increase their reputational risk and can also discourage subsequent partnerships more broadly. In some cases, allocating benefits may be straightforward; for example, a corporation that shares funding with a federal source to acquire water to be dedicated instream may be able to simply claim credit for a percentage of water equal to their funding contribution.

Without adequate, tailored monitoring and accounting, corporations cannot make credible, transparent water benefit claims backed up by data.

For more complex projects or projects with multiple types of benefits, allocating benefits across multiple funders can be more difficult and require clearly negotiating for and articulating the share of benefits each funder will claim. A final, related issue is how to allocate costs for monitoring outcomes and benefits over the life of the project. Monitoring costs, as with other types of costs to which CWS funding might be dedicated, may be split among different funding partners, or borne all by a single partner. There is no general practice or agreement on the extent to which monitoring needs to be funded to support volumetric or other water benefit claims; therefore, it would be advisable to establish monitoring funding and if/how it relates to allocating/claiming benefits as part of the general funding partnership planning and agreements.

7.3.2. Claiming Credit for Seed Funding

Funding projects in the conceptual or development phase (sometimes referred to as funding enabling conditions) can open co-funding opportunities for CWS; however, funding projects at this phase is problematic because phase does not directly generate water benefits under the existing

water volume benefit accounting best practice guidance. Benefits flow only after a project is fully funded and implemented. Corporate funding for early project phases does carry risk. Some projects funded early might fail to get off the ground and corporations would not be able to claim water benefits from these projects. Similarly, companies may be wary of the risk of investing resources in something that the public might scrutinize as not being tied to specific, measurable results. The expectation is that the number of successes would outweigh the failures and that access to more projects overall will result in a significant expansion of opportunities and water benefits claimed. Another way to address this challenge is to negotiate seed funding agreements in which corporations have a first right of refusal to fully fund or co-fund projects that result. In fact, access to such rights of refusal is a major reason to invest in projects at early phases in the first place. Another, broader way to address this challenge is by communicating the benefits of funding enabling conditions; rather than claiming specific measurable benefits, corporations can communicate that seed funding is critical to teeing up greater impact over time.

7.3.3. Timing and Amount of Revenue Generation for Projects with Financing Elements

Several co-funding mechanisms discussed in this report involve low or no interest financing. Projects implemented with financing need to generate revenue or find funding to repay the loans and any interest incurred. Designing projects that produce tangible water benefits, while also generating sufficient cash flow to service debt, can be a challenge, especially in the early stages of a project. Some projects may only generate returns after years of investment, while other projects may have benefits that are difficult to monetize (such as mitigating the risk of more severe future conditions). One of the roles proposed for corporate investment in this report is as a payor-beneficiary of projects seeking revenue generation. In this role, it will be critical for corporations to understand the quantifiable benefits of projects they are funding, including potentially framing payments as recompense for specific units of benefit (like acre-feet of water restored to an aquifer or pounds of nitrogen prevented from reaching a stream) that they are then able to claim.

7.3.4. Impact Measurement

Watersheds are complex, made more so by the unpredictability of climate change, shifting baselines, and on-the-ground realities. As a result, it is challenging to determine with sufficient levels of specificity when, how, how long, or in what manner investments might yield measurable impacts. For example, removing invasive plant species with high water use can have measurable volumetric water benefits, but the precise extent of these benefits is impacted by many variables like air temperature and the type and water use of native plants that grow back in place of the invasives. Strategic monitoring and ongoing operations and maintenance are required to measure impact at project completion and over time. Funding monitoring and maintenance is important for all water stewardship funders, including in co-funding scenarios. This challenge is not unique to co-funding approaches; it is present in most, if not all, water stewardship projects. It is important enough, however, that it deserves mention here alongside challenges more specific to co-funding innovations.

Funding monitoring and maintenance is important for all water stewardship funders, including in co-funding scenarios.

7.3.5. Valuing Water Benefits

The full value of water stewardship is often derived from a combination of avoided costs (e.g., water supply shortages), co-benefits (e.g. biodiversity, community well-being, groundwater recharge), and ecosystem services (e.g., riparian health, flood mitigation) (Abell et al. 2018). As investments to scale up stewardship projects increase, there is a growing need to develop consistent frameworks to value the full range of possible benefits. Benefit valuation is critical especially in the case of pay-for-performance and other financing mechanisms that depend on revenue streams for project finance. It is also important to help corporations make informed funding decisions and better understand the value of their portfolio of water stewardship investments.

7.3.6. High Capital Requirements for Water Infrastructure Projects

Investments in long-lasting water systems and infrastructure (e.g., irrigation and distribution systems) require a significant amount of capital investment. Estimates suggest that \$5–9 worth of investment in this type of infrastructure may be required to generate \$1 worth of annual revenues (Ikeda et al. 2020). This expense ratio points out one reason that public funding is so critical for public benefits in the water sector. Most projects funded by SRFs involve capital-intensive infrastructure—both gray and green. Corporations need not shy away entirely from these projects, despite their expense, because these projects can have significant benefits and co-benefits that are not easily monetized; rather, corporations should approach these types of projects with caution and a clear understanding of how their funding ties to quantifiable water benefits.





8. Summary of Findings and Recommendations

Water supply and hydrologic challenges in the CRB have accelerated over the past several years and are actively becoming more acute as storage in Lake Powell and Lake Mead decline. Investments in near- and long-term water stewardship projects are urgently needed to respond to the rapidly growing water supply crisis. CWS can play a role in this response: innovative co-funding strategies can expand existing and open new opportunities for measurable impact in the basin. With unprecedented federal funds available and enhanced attention to the region from large private foundations, states, and impact investors, there is both a need and opportunity to find ways to effectively deploy corporate funding alongside these sources.

8.1. SUMMARY OF FINDINGS

- The CRB is in dire need of strategic investments to achieve long-term water supply sustainability. CWS can play a role in this effort and innovative co-funding can help expand and focus that role.
- Co-funding requires a shift in how corporations think about CWS spending—from a focus on offsetting impacts from specific practices or links in a supply chain to partnering with funders and project proponents whose focus is on place-based *and* watershed-scale benefits.
- Corporations often have greater flexibility in deciding how to spend their water stewardship budgets than other funders, particularly federal and state agencies. This makes them ideal sources for match or cost-share funding to unlock opportunities that, but for the corporate spending, might remain unfunded or leave benefits on the table.
- Flexibility also means that corporations should consider providing seed funding to make sure that no good project fails to get off the ground. Funding projects at early phases does come with risks of project failure. Unlike paying for completed projects or packaged benefits like watershed credits, some projects that receive seed funding may not be successful. However, this strategy has significant upside and could open opportunities for corporations to expand their impact and secure the right to fund the implementation phase of projects for which they provided seed funding.
- The major challenge facing co-funding is broadening and deepening the links between CWS staff and both project proponents and potential co-funders.
- Co-funding water stewardship projects requires carefully measuring and valuing water benefits and proportioning credit based on funding amounts and additionality (ensuring that, but for dollars provided by a given funder, specific benefit(s) would not have occurred).

8.2. RECOMMENDATIONS

The findings and analysis in this report support three high-level recommendations. First, the IIJA and IRA have led to an unprecedented availability of federal funding for water, environmental restoration, and climate change responses. These sources have arrived at a moment when the CRB is moving towards a full system crash. Corporations should immediately focus on finding opportunities to co-fund alongside these massive infusions of federal dollars. If not already doing so, corporations should research the major federal funding programs through Reclamation and USDA that are likely to be conduits for much of the spending under the IIJA and IRA. These programs publicize funding availability as well as applications they receive for funding and award announcements. These are all opportunities to identify funding recipients and project proponents with which corporations might collaborate.

Second, corporations should continue to develop and deepen their networks of project proponents and potential co-funders, with support from connecting organizations like BEF and CWAC, NGOs active at the national scale like The Nature Conservancy and Environmental Defense Fund, and place-based NGOs, communities and water managers. Corporations can also send staff to conferences, reach out directly to foundations and on-the-ground NGOs directly, or solicit projects via public RFPs or regular, periodic project solicitations. These strategies could help develop the kinds of relationships that give corporations access to project opportunities at the conceptual and design phases and lead to long-term partnerships with potential for significant benefits.



Finally, corporations should consider increased involvement with project and funding strategy at the local and watershed scale. Instead of engaging at arm's length and seeking only to buy water benefits from shovel-ready projects, corporations could engage with impact investors, foundations, utilities, NGOs, and others to help design funding mechanisms from the ground up. Knowing that a corporate funding partner is committed to a watershed or a project could provide the confidence a group of investors needs to move forward with a new venture; the same knowledge could spur a foundation to expand investment or to turn to innovative tools like PRIs.

The need in the CRB now and into the foreseeable future provides the impetus for experimentation and innovation. Creative co-funding mechanisms are a natural fit in this context. They represent a meaningful way for corporations to expand their impact and provide a pathway to invest in water benefits at new and expanded scales.

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