American Rivers
RIVERS CONNECT US®

ISSUE BRIEF: PRIVATE PROJECT FINANCE FOR WATER INFRASTRUCTURE

Understanding New Models for Accessing Private Investment

JANUARY 2022

JEFF ODEFEY
American Rivers

VANCE RUSSELL
VR Conservation Collective

With Congress' recent passage of the Infrastructure Act, and the uncertain prospects of the Build Back Better Act, there has been much attention on federal funding for the nation's infrastructure. Water systems, including investments to improve drinking water health and security, wastewater and stormwater systems, and natural infrastructure stand to benefit from this infusion of money. However, underneath this apparent largesse lurks a different truth – over 85% of all investments in our communities' water infrastructure comes from local sources - people like you and me paying our taxes and water bills to our local water agencies. Chronically underfunded, these agencies can benefit not just from infusions of public funds from DC and state capitals, but from smart, innovative financing strategies that leverage private investments to help local funding work harder.

A parallel news cycle highlighted the increasing appeal of environmental impact bonds and similar outcomes-based approaches to financing water infrastructure. The City of Buffalo just closed on the nation's largest environmental impact bond, bringing in $49 million to help that city overcome flooding and pollution problems with green infrastructure installations on private property. In California, Blue Forest Conservation and the Yuba Water Agency recently launched a second Forest Resilience Bond, delivering another $25 million to forest and watershed health projects in the Northern Sierra. What makes these approaches compelling? How do they work, and what benefits can they provide? This document hopes to clear up some of the mystery around the financing strategies by:

- Clearly describing collaborative project finance
- Unpacking the roles played by participants in these strategies and the structures that deliver private investment to projects
- Providing examples and lessons learned from existing finance collaborations

Why Private Finance?

Impact investment, outcomes-based finance packages, private-public partnerships, and other strategies to access private capital are, in some ways, variations on a time-tested model for accessing the capital needed to fund community infrastructure. Many water agencies have traditionally issued bonds to borrow the money needed to finance sewer systems, water treatment facilities, and other hard infrastructure. Debt-financing these investments has many advantages, including immediate access to the full amount of money needed for projects, reduced upfront costs compared to paying cash for projects, and inter-generational equity that spans repayment across the lifespan of the project. In addition, debt financing may reduce impacts on water rate payers. Our partners at the WaterNow Alliance point out that if a utility with a $70 million annual budget were considering investing $10 million in a major GSI incentive program, the utility would have to raise rates 14% to pay for the program out of its annual operating budget. If instead the utility debt-financed the program and paid for it over 20 years, less than a 1% rate increase would be needed to implement the same $10 million program.[1]

Benefits of Private Finance:

- Matches investment-ready capital with on-the-ground restoration projects that yield environmental and social returns.
- Accelerates the pace and scale at which restoration work can yield these dual returns by raising funds upfront and decreases the time for project completion from decades to 2-3 years.
- Stabilizes otherwise irregular funding from public sources, allowing work to move forward more rapidly and predictably, significantly aiding cash-poor non-profits and municipalities in starting and completing projects.
- Builds local capacity and greatly eases the contracting burden across project proponents.
- Can be structured to re-distribute the risk for project design and success away from payor and toward implementer (e.g., via a pay-for-performance approach.)

Compared with traditional debt financing, "non-traditional" strategies to access private investment offer some advantages, particularly for smaller and mid-sized water agencies. First, many of these strategies can transfer risk from the water agency and public to private investors and investment facilitators. What do we mean by this? Initially, approaches such as the partnerships developed by Corvias, place the responsibility for financing and delivering infrastructure projects on the private sector. Sometimes referred to as private-public partnerships or Design-Build-Finance-Operate-Transfer project delivery, this approach can reduce burdens on water agency staff and open finance opportunities when agencies lack expertise and capacity to directly engage private investors. Risk can also be transferred by lining repayment rates to the success of the project; in essence, a water agency is committing to pay for the benefits of a project rather than for the project itself. An interesting example is the Bailey's Trail System Environmental Impact Bond which is delivering a mountain biking trail network to a rural community in Ohio.[2] Repayment of this investment isn't linked to completion of the trails but to the expected increase in community economic activity in the local community. This economic uplift was the purpose of the project and financing.

Another benefit can come from using private investment to leverage multiple funding sources, creating a portfolio of funds that can repay the initial investment. The North Yuba Forest Resilience Bond is an excellent example of a debt-finance structure that combines private and public funds to accelerate and scale-up watershed health projects. Finally, private investment strategies may be accessible for green infrastructure and natural infrastructure projects that may otherwise have limited access to federal and state funding and financing programs, such as State Revolving Loan Funds. Impact investment bonds have successfully delivered green stormwater infrastructure projects in Atlanta, the District of Columbia; the North Yuba Forest Resilience Bond is leveraging multiple investments to deliver forest restoration work across tens of thousands of acres in a fire-threatened California watershed.

Private Investment in Action


Photo: American Rivers

There isn't a one-size-fits-all approach to developing a locally relevant private finance strategy, but some key elements appear in many of the pioneering examples in this field. At a most basic level, private finance of water infrastructure requires relationships between *stakeholders* or *beneficiaries* who can participate in the planning and initiation of projects. These beneficiaries may be *investors* in the project; however, *investors* may be an entirely separate set of entities. Ultimately, the central role is played by the agency or agencies who are the primary *payor*(s) for the project. *Payors* are responsible for the repayment of all debt, including any interest on borrowed money. *Payors* may be able to draw upon rate or tax revenues and other sources of income to repay the *investors*. In the water sector, payors may be motivated by the need to comply with regulations or other legal mandates, the obsolescence of outdated infrastructure, or the need to respond to emerging conditions or threats. For community groups or other non-agency proponents of a project, establishing a partnership with a payor is instrumental to the success of most financed projects.

Let's take these roles in turn.

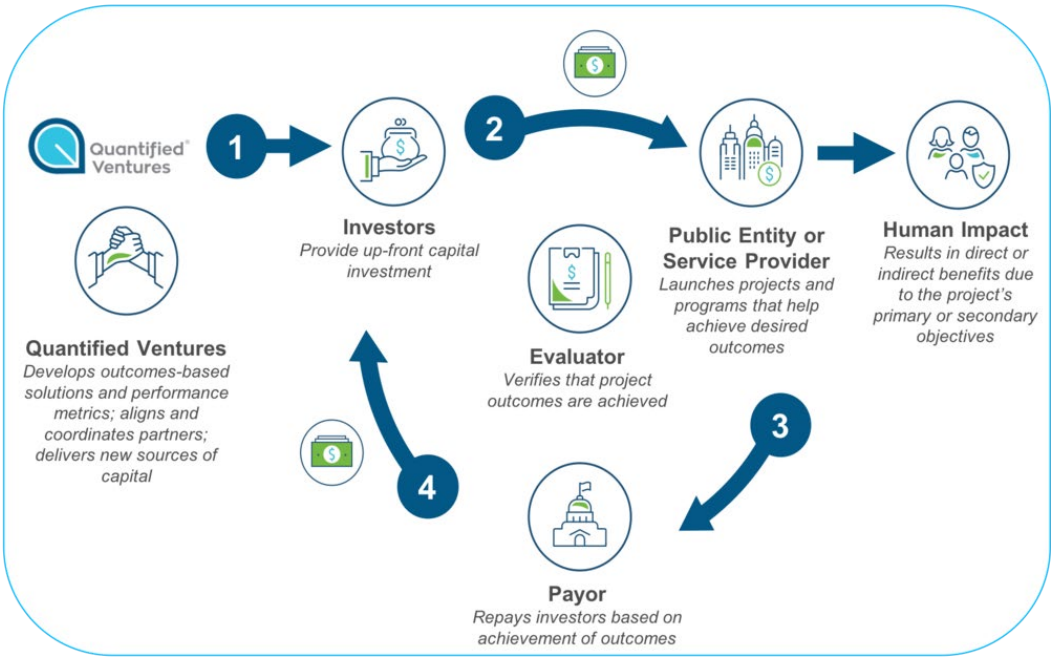
Collaboratives. Often, successfully planned, financed, and implemented projects succeed because they are informed and supported by a collaboration of affected beneficiaries or stakeholders. These individuals and organizations can ground a project in the needs of the surrounding community, contribute expertise and perspectives that inform project design and implementation, and contribute social capital that leads to political support for the project. This support can translate into opened opportunities for funding, investment, and other forms of support.

Investors. Federal or state agencies may contribute partial funding for a project or provide various forms of financing support such as credit guarantees, credit enhancement or loss reserves, or technical assistance. Investors can come from many sectors. For instance, insurance companies, retirement funds, university endowments, and institutional investors may offer below-market interest rates if a project meets their environmental or social benefit goals. Individual impact investors, acting alone or through composite funds, may be willing to provide capital at reduced rates of return to environmentally or socially beneficial projects. Finally, philanthropic foundations may be available to invest in projects that fulfill their programmatic interests. One benefit of private finance strategies is the potential to blend multiple investment sources into one project portfolio, perhaps even sequencing these sources of financing to discrete phases of a project.

Payors. Ultimately, projects must be paid for, and investors repaid for the financing they provide. Often, this repayment obligation will fall on a public water agency, or other governmental body, with an operational or ownership interest in the proposed project. Agencies with a regulatory or other driver that compels their interest in the benefits of a project will be the most 'secure' payors. However, other forces may motivate agencies, institutions, even businesses to pay for (or contribute toward) the outcomes associated with a successful project. Corporations with sustainability, resilience, or environmental justice commitments are equally driven to invest in projects that provide beneficial outcomes. Economic development agencies and entities may have funding to contribute to projects that meet local job creation or business engagement goals.

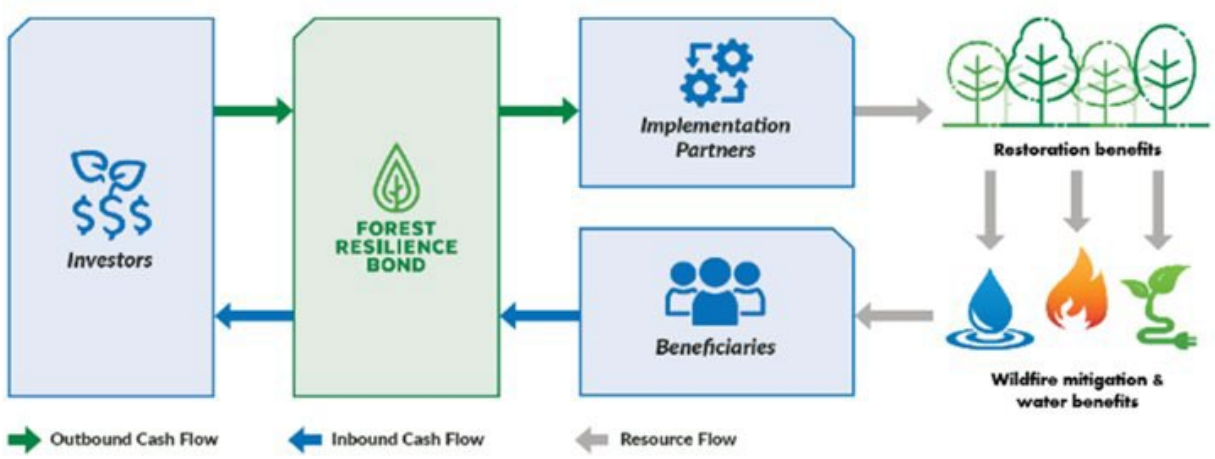
Combining all these actors into a financing package keyed to a natural infrastructure project may be less straightforward than the pathway to traditional bond issuance and is certainly more complicated than simple cash pay-go approaches to capital improvements. Where simpler approaches to making investments in infrastructure are available, it's likely best for an agency to pursue those avenues. However, private finance can unstick projects long deferred in the wait for traditional finance opportunities or for capital improvement budgets to finally provide enough cash. Private finance can also deliver projects that are larger in scale and have beneficial outcomes than can be supported with annual grant or budget cycles. It can be useful to look at the financing structures adopted by existing private investment models to better understand the interplay between investors, payors, and beneficiaries.

In 2017, Quantified Ventures and the District of Columbia's Department of Water and Sewer (DC Water) launched the nation's first environmental impact bond focused on implementing green infrastructure to reduce sewage overflows and flooding.[3] This outcomes-based investment package tied the rate investors earned to the achievement of specified environmental performance goals. The investment package structure linked DC Water to private bond buyers. The structure used by Quantified Ventures, DC Water, and their investors follows the track illustrated below. Noteworthy in this outcomes-based repayment scheme is the role of the third-party evaluator. Five years after launching the project, the evaluator confirmed that stormwater runoff had been reduced by nearly 20%, a level that met the bond's base-level repayment criteria.[4]



Credit: Quantified Ventures

Blue Forest Conservation's Forest Resilience Bond adopts a somewhat different approach. The Bond, more of a revolving loan instrument, is not strictly speaking an outcomes-based financing strategy. The payor for the project, Yuba Water Agency, makes payments to investors that are not linked to achieving any of the project's many benefits. The structure adopted by Blue Forest enables the creation of a portfolio of investors and funders who repay and complement the Agency's funding.



In the above diagram, the investors (Calvert Impact Capital, AAA Insurance, and others) provide up-front capital by paying into the Forest Resilience Bond. This aggregate fund, administered by the National Forest Foundation, pays contractors and local NGOs to plan and deliver forest and watershed restoration activities. Once completed, Yuba Water Agency (the beneficiary) repays implementation costs to the fund, which repays the investors.

Additional Case Studies

In addition to the three examples mentioned above, other experiences with innovative private financing showcase the flexibility and appeal of these strategies.

- Corvias, a leading developer of private-public partnerships, built on its success in Prince George's County, MD, with the launch of the Fresh Coast Protection Program with the Milwaukee Metropolitan Sewerage District. Through this program, the partnership secured $75 million in financing, providing resources that will enable Corvias to design and construct green infrastructure projects that will help MMSD meet its regulatory goals. The outcomes-based partnership commits the District to pay a fixed cost per gallon to Corvias, with the ultimate target of installing 8.45 million gallons of stormwater retention capacity.
- Several municipalities in California pioneered Enhanced Infrastructure Financing Districts to leverage the value of infrastructure improvements as the collateral for obtaining the resources to implement these projects.[5] Using a technique also referred to as tax increment financing, this approach allows water agencies and municipal governments to issue bond debt for projects that will be repaid by future increases in property tax revenue.

These examples show the possibilities and benefits of creative strategies that bring private capital to support water infrastructure projects.[6] Nevertheless, there are exceptions to the normal pathways that water agencies and municipal governments take to finance such projects. There are some challenges to securing private finance that have stymied broader acceptance of this approach – and more effort is needed to understand and reduce the impact of these obstacles. Institutions like the Conservation Finance Network are commendable resources for cultivating knowledge about financing, highlighting best practices, , and generally sharing notable experiences with a wide audience.

This is not to say that pursuing these approaches to private finance is challenge-free. Some of the costs and challenges will be familiar to public utilities that already have experience with bond preparation and issuance for capital projects. Considering outcomes-based finance or similar approaches adds some new issues: lack of familiarity and capacity, uncertainty about how to best measure outcomes, lack of established networks between utilities and investors are but a few. The authors of this paper discuss significant impediments, and pathways to reduce them, in a separate issue brief.

Collaborative Finance Series

This Tinderbox blog is part two of a series of blogs on collaborative finance. Part one, Finding the Pathway, outlines the steps to collaborative finance. A third paper explores barriers facing collaborative finance and strategies to leverage public grants and loans to secure private investment. Part Four looks at approaches to financing forest restoration and wildfire risk reduction projects. A final paper examines strategies for leveraging public and private sources of project funding.

This paper is one of a series of discussions supported by a California Department of Water Resources Integrated Regional Water Management Disadvantaged Community Involvement, Technical Assistance grant provided to the Yuba Water Agency.

[1] Caroline Koch, WaterNow Alliance, personal communication with the author.
[2] Quantified Ventures, Outdoor Recreation Outcomes-Based Financing
[3] Abby Martin, Alec Appelbaum, *Conservation Finance Network*, A Pioneering Environmental Impact Bond for DC Water (Updated)
[4] Quantified Ventures, DC Water's Pioneering Environmental Impact Bond a Success
[5] Southern California Association of Governments, Enhanced Infrastructure Financing Districts.
[6] For a more complete discussion of these, and other, case studies, see the American Rivers report Because It's Worth It.