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Revolving Water Fund Pilots PFS Approach for Water Quality Improvements.

IN BRIEF

IN MAY 2019, THE REVOLVING WATER FUND AND THE CITY OF NEWARK, DELAWARE, ANNOUNCED THE CLOSING of the first ever pay-for-success transaction funding on-farm agricultural restoration activities to reduce nutrient and sediment flow into waterways.

THE REVOLVING WATER FUND POOLS CAPITAL TO SUPPORT UPSTREAM RESTORATIONS. IT AIMS TO QUANTIFY THE POLLUTION REDUCTIONS from these restoration activities, then package and sell the reductions to municipalities in the watershed seeking to cost-effectively comply with water quality standards.

IF NEWARK IS ABLE TO DEMONSTRATE TO REGULATORS THAT THEY HAVE REDUCED THEIR NUTRIENT AND SEDIMENT LOADS, NEWARK WILL PAY BACK THE FUND. The compensation will cover the costs of the project team, fund further restoration activities, and may eventually also pay back future private investors.

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In May 2019, the Revolving Water Fund and the city of Newark, Delaware, announced the closing of the first ever pay-for-success transaction funding on-farm agricultural restoration activities to reduce nutrient and sediment flow into waterways.

The traditional water fund model, which has been used around the world, pools philanthropic and donor capital to support upstream restorations. The Revolving Water Fund (a collaboration between i2 Capital and The Nature Conservancy in Delaware) innovates on this model by also aiming to quantify the pollution reductions from these restoration activities, then packaging and selling the reductions to municipalities in the watershed seeking to cost-effectively comply with water quality standards enforced under the Clean Water Act.

In the Revolving Water Fund's Newark pilot, capital from the fund pays for on-farm restoration activities upstream in the Brandywine-Christina watershed. After "purchasing" these restoration activities, if Newark is able to demonstrate to regulators that they have reduced their nutrient and sediment loads, Newark will pay back the Revolving Water Fund. The compensation will revolve back into the fund, cover the costs of the project team, fund further restoration activities, and eventually also pay back private investors in the future who may invest if the pilot proves successful.

The Revolving Water Fund was the result of years of cooperation between NGOs and regulators in the Delaware River watershed, as well as strategic infusions of philanthropic and federal grant funding to develop the model and bring it to the pilot stage. If successful, the ability to achieve regulatory compliance for water quality would be a first for the water fund model.

"Our goal is to produce pollution reductions in a way that the per-ton cost of sediment removed is

covered by an offtake agreement that is economically viable to the community," said Ashley Allen, founder and CEO of i2 Capital. The Revolving Water Fund team also hopes that increasing regulator confidence in the model, ideally to be validated through the pilot, will create private investor comfort with and interest in the revolving water fund concept.

Watershed-Scale Vision

The Brandywine-Christina watershed, in the southwest region of the Delaware River watershed, covers 565 square miles from Pennsylvania through Delaware. While the area is mainly rural and agricultural, the Brandywine-Christina watershed provides drinking water to over 500,000 people each day. It also faces development pressures from the nearby cities of Wilmington and Philadelphia.

Yet 400 miles of streams in the watershed are impaired, mainly due to agricultural and sediment runoff. This means that cities like Newark, which gets the majority of its water from the Brandywine-Christina, have to spend substantial municipal resources on treating the impaired water so that it is drinkable and complies with water quality regulations. This challenge is common across the Delaware River watershed.

In the face of these water quality challenges, in 2013 the William Penn Foundation launched their Delaware River Watershed Initiative. The Initiative is a $100 million commitment over 10 years to improve water quality in eight subwatersheds that make up the Delaware River watershed. The foundation selected NGOs in each subwatershed to create joint workplans for addressing local goals, such as nutrient reduction and improved water quality.

The Nature Conservancy (TNC) of Delaware and the University of Delaware were selected by William Penn Foundation to be collaborators within the Brandywine-Christina Watershed. Drawing from their experience from engaging with landowners implementing on-farm conservation practices in the watershed, the organizations set out to build the network needed for a revolving water fund to operate.

"One of the challenges [with developing the revolving water fund] is finding enough willing landowners to partner with on implementation of the practices," said Richie Jones, former Delaware state director of TNC. "That's the importance of on-the-ground partners who are building those relationships to implement the work being paid for."

Partnerships established through the Delaware River Watershed Initiative laid the groundwork for the on-the-ground project pipeline that the revolving water fund relies on. This gave i2 Capital the momentum to apply for a USDA Natural Resource Conservation Service Conservation Innovation Grant (CIG) to support scaled implementation of the model, which they received in 2017. The CIG funding allowed i2 Capital and TNC to bring Quantified Ventures, Environmental Incentives and the Stroud Water Research Center to the project.

"The CIG came at the perfect time, because we had done all the stakeholder outreach, and the political environment and systems were in place, thanks in large part to the William Penn Foundation and its Delaware Watershed Restoration Initiative," said Jones. The Bunting Foundation provided the startup capital for the revolving fund. Now, through pilot projects like the one with Newark, the team needs to test if they can cover the costs of staffing the program and implementing projects while also generating a return on capital back into the revolving fund.

Regulatory Challenges Create Opportunity

The Revolving Water Fund aims to tap into the regulations in Delaware and Pennsylvania that

require municipalities to reduce the nutrient and sediment pollution loads in their waterways. These forms of contamination are regulated through total maximum daily load limits (TMDLs) and municipal separate storm sewer system (MS4) permits. The fund's argument is that municipalities can achieve their regulatory goals for protecting water quality through conservation activities on agricultural lands. Basically, to stop the water from getting impaired upstream before it reaches the municipality.

"Regulators will be on board with this if you can prove the water fund moves money to the highest-efficiency, lower-cost avenues of compliance, which then gives investors confidence because they know that regulators already understand what we are trying to accomplish," said Jones.

Regulatory approval of the revolving water fund approach as a way for municipalities to meet their TMDL and MS4 permits is a big step in allowing the model to be replicated more widely. Recognizing this, the Revolving Water Fund team developed a pollution reduction calculator to measure the impact of on-farm conservation activities. This provided a tool for engaging with regulators early on, as the team worked with regulators on several versions before settling on a model that both sides felt comfortable with.

"We are getting the Delaware Department of Natural Resources and Environmental Control [DNREC] and Pennsylvania Department of Environmental Protection, the two regulators, to look at how we are addressing clean water methodologies and recognizing them as consistent with the regulatory parameters that exist or need to be expanded," said i2's Allen.

New Ability to Invest Upstream

"Newark has been trying to do source water protection work, but it's been a little ad hoc," said Tom Coleman, city manager of Newark. The city had to rely on NGO partners to help them find projects, he said, which is often not the most efficient use of funding.

The city of Newark is home to the University of Delaware and is the third largest city in the state, with a population of over 30,000. The city's dense urban center has meant that source water protection projects within the city limits are few and far between. In the past, Newark faced a decision between two expensive choices for meeting regulatory requirements: building water treatment systems or implementing source water protection projects on the limited urban land available.

Now the revolving water fund makes it possible for Newark to spend money on projects across state lines in rural regions of Pennsylvania, rather than use the little land available within the city on projects that would have lesser impact. This new capacity enables Newark to essentially purchase source water protection practices — on agricultural land upstream in the Brandywine-Christina watershed — that are cheaper and more effective than projects on the highly urbanized land within city limits.

"In Newark we could only really do wetland ponds and flood mitigation, and downtown land is very expensive," said Coleman. "It's more efficient to look upstream, it adds more tools to our toolbox."

By buying into the water fund, Newark can access cheaper source water protection practices that reduce runoff on agricultural lands in Pennsylvania, such as cover crops, grass swales and riparian restoration.

"It's no small feat to have Newark paying for agricultural restoration in Pennsylvania, but we've both spent a lot of time working with DNREC to get them comfortable," Jones said of the city and TNC's

efforts.

The Revolving Water Fund also offers new flexibility for municipalities like Newark by creating a pipeline of projects that a city can pay for based on their water quality needs. Through the pilot, Newark can budget long-term to pay for water quality improvements based on need, rather than their current method of funding projects only when they are available or when funding is available.

“When the Revolving Water Fund started to get fleshed out, we were excited that it would have another organization doing the legwork to find and prioritize the projects and understand their potential water quality improvements,” Coleman said.

Proving the Model
“Proof of concept is where the field [of conservation finance] hasn’t yet had sufficient movement,” said Allen. “Proving out this three-part operation is the precursor to raising a larger fund, which will provide the liquidity and velocity for more projects.”

With the Newark pilot and future pilots, The Revolving Water Fund team wants to prove their model works across a range of contexts and states. But first, a pilot needs to successfully demonstrate the nuts and bolts of a deal – contracts for supply and offtake, regulatory approval, and investment – before the model can be replicated.

“We envision this as a private debt instrument that basically provides the ability to produce a product up-front, with the debt capital providing risk reduction,” said Allen. “In this case, the private investor will take that risk, and the municipality will only pay for the product once it has the assurance that the product will work – that is, it meets regulatory approval, is scoped and will be in the ground.”

Looking Ahead

“We’re in phase one of implementation with the pilots, and the next phase is deploying larger-scale capital,” said Jones. “The opportunity is that we can hopefully aggregate the municipalities that want to do this.”

For example, Jones imagines they could use the revolving fund model to create an aggregated lending facility for a group of municipalities to get a lower interest rate when purchasing restoration activities. Companies that rely heavily on the use of water within the watershed could also be tapped as payors for the revolving fund.

This aggregation could also create opportunities for easier access to the Environmental Protection Agency’s State Revolving Funds (SRFs) for clean water projects, as SRFs could lend more to the Revolving Water Fund in a large lump sum. This is easier than giving smaller loans to each individual municipality, since it requires less administration in total.

“It would be interesting to have SRF money involved in this cycle, whether that’s on product development or the offtake side, a takeout for initial private investors or (probably more compelling) as liquidity for the municipal offtake,” said Allen.

As the Revolving Water Fund proves out its first pilot and looks to further projects, the team sees further applications beyond nutrient reductions.

“The next frontier for the water fund is around climate resilience,” said Jones. “How do we build in flood resiliency in watersheds like Brandywine-Christina, and could we use agriculture lands to retain water?”

Conservation Finance Network

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August 28, 2019

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