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Baltimore Trying New Tack to Pay for Costly Stormwater Projects.

City to issue \$6.2 million in ‘environmental impact bonds’ to finance runoff-reducing green infrastructure

Baltimore is slated to be the second city in the Chesapeake Bay region to try a novel way of financing its costly water pollution reduction projects under a plan announced Monday by city officials and the [Chesapeake Bay Foundation](#).

City officials said that with assistance provided through the Bay Foundation, they expect to issue up to \$6.2 million in “environmental impact bonds” later this year to help pay for green infrastructure projects aimed at managing stormwater in more than three dozen neighborhoods.

“Baltimore can and, we predict, will be a model for innovation in pollution reduction,” declared Bay Foundation President Will Baker at a news conference announcing the deal in West Baltimore by the site of one of the planned projects. “It’s a partnership with nature to save dollars and reduce pollution.”

The Annapolis-based Bay Foundation hired [Quantified Ventures](#), an “impact” investment advisory firm based in Washington, DC, to work with Baltimore to structure the bond deal.

Rudy Chow, the city’s public works director, said officials were looking to diversify the city’s borrowing as it attempts to curtail polluted runoff at the source. Baltimore is required by federal and state regulators to reduce and treat polluted runoff from more than 4,000 acres of pavement and buildings across the city by 2019.

Instead of building holding tanks and other hard infrastructure to collect and treat stormwater, city officials hope to use nature — by replacing asphalt and concrete pavement with grassy areas that can soak up rainfall and the pollutants it picks up. They have identified about 90 greening projects they intend to complete by year’s end to enhance neighborhood’s quality of life while also reducing runoff.

The overall cost is projected to be \$10.3 million, with the rest to be financed through traditional municipal borrowing.

The Baltimore deal is inspired by a much larger, \$25 million environmental impact bond issued in 2016 by the District of Columbia Water & Sewer Authority. [DC Water](#), as the authority is commonly known, was the first in the nation to use the financing tool to reduce chronic problems with rain-driven sewage overflows into the Potomac and Anacostia rivers.

DC Water also hired Quantified Ventures to help it issue the bonds.

“We really think that we’re starting a movement here in the watershed and across the country,” said Carolyn duPont, director of Quantified Ventures. “We believe that environmental impact bonds will

be a key part of public finance in the future. Budgets are always squeezed for cities, and there's also an ever-growing group of impact investors who are really excited to put their money and capital to work into projects like these that have both a financial return as well as environmental and social benefits."

Environmental impact bonds are a variation on "social impact bonds," which are familiar to charity-minded investors who focus on issues like chronic homelessness and prison recidivism. These bonds are meant to attract investors who not only expect a modest financial return, but also want to support environmental improvements.

As with conventional municipal bonds — which fund schools or roads, for instance — the bond issuer (the borrowing municipality) makes periodic interest payments on the amount invested, at an agreed rate, until the bond's maturity date, at which point the borrower pays back the entire principal.

But environmental impact bonds differ from traditional bonds: The municipality and investors share the risk of the investment to some degree, because the payback of the bond is based on the relative success or failure of the project. Given that setup, they are often called "pay for success" bonds.

If the project simply meets expectations, the investor will receive interest payments at the agreed-upon rate. If the project fails to meet expectations, the terms of the bond help the municipality recoup some of the cost by specifying that the investor earns little or no interest. This allows the city to protect its budget and likely channel the money held back from investors toward additional projects that help meet regulatory requirements.

If the project exceeds expectations, by curbing more pollution than anticipated, the municipality saves money by reducing the need for other projects. The investor benefits from these cost savings by receiving interest payments plus a premium — referred to as a "performance payment."

In DC Water's case, the authority is working under a consent decree reached with the U.S. Environmental Protection Agency in 2005 to reduce overflows from the combined sewer system into the Anacostia and Potomac rivers. The environmental bonds were issued to pay for installing green infrastructure — such as rain gardens, permeable pavement, green roofs and rain barrels — to soak up rainfall on a 20-acre area that otherwise would drain into the sewer system and overload it. DC Water believes such projects will be a cheaper way to reduce overflows than to build more costly underground tunnels to hold the polluted water until it can be treated at the Blue Plains wastewater treatment plant.

Once DC Water completes the green infrastructure projects, it plans after five years to compare runoff from the "greened" area before and after construction. If the projects reduce runoff by more than 41.3 percent, DC Water will pay investors an "outcome payment" of \$3.3 million on top of what they would be due on the bonds. And if the project reduces runoff by less than 18.6 percent, investors will owe a "risk-share" payment to DC Water in the form of a reduced payback on their bonds. Any reduction between those benchmarks would not require any extra payments in either direction.

While the bond issuer, under such terms, might get compensated for a project's failure or low performance, the downside likely would be substantial. DC Water, in this case, would still be liable under the 2005 consent decree to reduce sewage overflows by the promised amount, so they would have to fix the project or come up with another.

On the flip side, a bond issuer could wind up paying more to borrow for a project that does better than expected, but proponents say it saves the issuer from having to spend as much on other

projects to reduce pollution. If DC Water learns from the experience that green infrastructure is significantly more effective than originally thought, instead of having to invest in an additional 300-plus acres of green infrastructure, it might be able to do less.

With funding from the [Kresge Foundation](#), the Bay Foundation has contracted with Quantified Ventures to help Baltimore structure its environmental impact bonds and market them to investors, foundation spokesman Tom Zolper said. Third-party funding was needed, explained Quantified Ventures' duPont, because this type of financing is new and relatively unproven, and it requires some extra work to figure out up front how to measure the projects' performance.

Despite their novelty, proponents hope the environmental impact bonds will prove attractive to investors. DC Water's 30-year bonds sold at the same 4.34 percent interest rate that the authority pays on its conventional financing, duPont said.

Details of the Baltimore deal are still being worked out, but the city's public works director said he hoped that the "pay for success" approach will attract new investors willing to share the risk of trying to reduce stormwater runoff, which is a major source of nutrients, sediment and other pollutants fouling local streams, the harbor and the Bay.

Baltimore has budgeted \$79 million to spend on stormwater projects this fiscal year, and expects to spend \$74 million next year, said Troy Brogden, the city's chief fiscal officer. City officials opted to finance only a small chunk of its stormwater work with environmental impact bonds to test the concept, he said.

The Bay Foundation-Quantified Ventures partnership also hopes to persuade other municipalities and local governments to try the financing tool. Last summer, the foundation launched a search for municipalities and utilities in Maryland, Pennsylvania or Virginia that might be looking for ways to pay for their stormwater upgrades.

"Stormwater is a pollution source that is not going away. In fact, it's increasing in the Bay watershed," said Lee Epstein, lands program director and special counsel for the foundation. "And it's incredibly expensive to manage... We really want to see if [environmental impact bonds] could be made broadly available for more green infrastructure projects where some other kind of financing cannot. At this point, we're just not sure."

The pilot project seeks to help up to four local governments or utilities line up an environmental impact bond. The foundation hosted an informational webinar in September 2017 and shortly thereafter sent out a call for applications from localities that are under a mandate to upgrade their stormwater systems and have the necessary permits in place.

"Ideally, we're looking for communities that have green infrastructure projects that are ready to go," said Quantified Ventures' duPont during the September webinar, "and by that we mean they're in the planning process and within the next 12 to 18 months would be ready to implement those projects, assuming we can help [them] get the financing lined up."

Meanwhile, Al Wylie, president of the Harlem Park Neighborhood Council in West Baltimore, said residents were eager to re-green the patch of asphalt where the press conference took place. Over the years, pocket parks like this one in densely developed parts of Baltimore have been paved over and become litter-strewn places to avoid rather than amenities. Wylie said that in addition to grass, he'd like to see playgrounds and biking and hiking trails put in.

"It allows the community to be cleaner and safer," he said.

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By Donna Morelli and Timothy B. Wheeler on March 28, 2018

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