

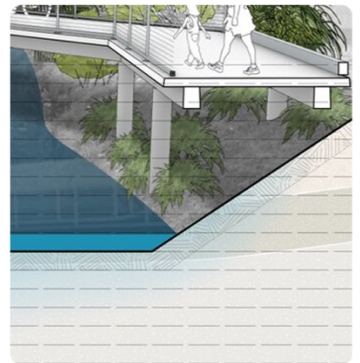
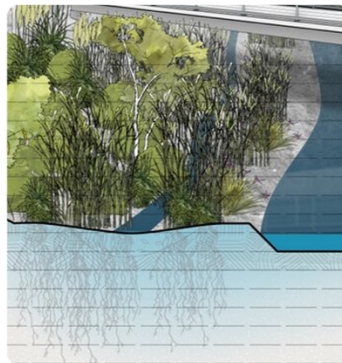


Resilient Hampton

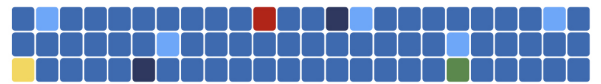
Financing green infrastructure with an environmental impact bond

CLIMATEFIT International best practice factsheet

Case ID: 08



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Summary

The Hampton Environmental Impact Bond (EIB) is an innovative financial instrument designed to finance the Resilient Hampton initiative in Virginia, USA. This initiative focuses on green infrastructure projects to improve stormwater management and enhance urban resilience to climate change. The bond financed three pilot projects: the Big Bethel Blueway, North Armistead Avenue Road Raising, and Lake Hampton, totalling an investment of \$34 million, with \$12 million funded through the EIB. These projects aim to increase stormwater volume storage capacity, reducing polluted water runoff and flooding, while providing additional benefits like improved air quality and green spaces.

An EIB is a designation given to a "green" municipal bond that not only funds environmentally or socially beneficial projects but also commits to a quantitative prediction, post-implementation evaluation, and disclosure to both bond investors and the community, of actual project outcomes. There are generally two types of EIBs: a performance payment EIB where the financing terms are related to the project outcomes, and a disclosure only EIB without a pay-for performance mechanism. Although its development and issuance required external technical and financial expertise, and despite the bond's relatively small size, the bond received overwhelming attention from a mix of investors, including large international investors, due to its quantification of project outcomes. This case proves that even small- or medium-sized municipalities can successfully use an EIB to finance (innovative) green infrastructure projects. This requires cross-departmental collaboration, high-ranked 'champion' officials that advocate for it, external expertise, early involvement of the financial department, and the ability to quantify (non-)financial project outcomes.

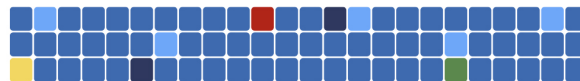
Keywords: Environmental Impact Bond, stormwater, green infrastructure, Resilient Hampton

Actors interviewed: (i) Team leader at Quantified Ventures; (ii) former senior planner of Hampton's Community Development Department

Cover photos: © Katherine Hafner (top photo); © Waggonner&Ball (middle photo)

Further reading: [Using Environmental Impact Bonds to Finance Green Stormwater Infrastructure in the Chesapeake Bay Watershed: A Case Study](#)

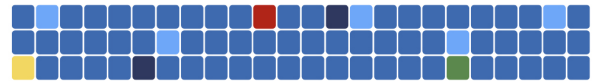
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Best practice information card

Table 1. Hampton Environmental Impact Bond. Information card

Location	Hampton, Virginia, United States
Population size	138.037 (2022)
Project area size	Big Bethel Blueway: 3.38 hectare water storage capacity, 1.8 km publicly accessible walking and biking path North Armistead Avenue Road Raising and Lake Hampton: no data
Area type	Watershed in an urban area (residential and commercial)
Climate challenge	Climate changes leads to increased precipitation, leading to more stormwater runoff and consequently increased flooding and water pollution
Key Community System(s)	Water management, critical infrastructure
Objectives	Resilient Hampton: improve residents' quality of life in the face of water-related challenges by increasing the City's ability to withstand and recover from them
Climate challenge solution	Three green infrastructure pilot projects to increase stormwater volume storage capacity.
Key benefits	A reduction of polluted water runoff and flooding. City-wide co-benefits of green infrastructure: improved air quality, neighbourhood green spaces, reduced urban heat island effect.
Implementation status & timeframe	Since 2015 (construction of two projects ongoing, one expected to start construction late 2024).
Investment volume (€)	\$34 million (2020 US Dollar value), of which \$12 million is financed from an environmental impact bond.
Key financing barriers addressed	Insufficient public budget to meet demanding federal and state water quality requirements
Financial model	An Environmental Impact Bond is a designation given to a "green" municipal bond that not only funds environmentally or socially beneficial projects but also commits to a quantitative prediction, post-implementation evaluation, and disclosure to both bond investors and the community, of actual project outcomes.
Financial sources	Private: asset owners/institutional investors (impact investors, insurers, pension funds, investment banks). Public: national- and state-level government agencies.
Financial instruments	Debt and results-based financing: environmental impact bond (similar like sustainability-linked bonds). Grants: implementation grants.



Overview and timeline

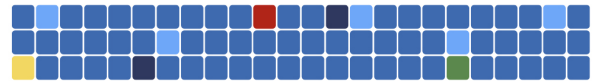
The city of Hampton lies in the state of Virginia, which, together with five other states plus Washington D.C., makes up the Chesapeake Bay watershed, the largest and most important estuary in the United States. Hampton has almost 140,000 inhabitants (2022) and lies directly at the Bay. **Hampton has experienced increased stormwater runoff due to climate change, which increases water pollution and leads to higher flooding frequencies.** Hampton's streams and rivers flow into the Chesapeake Bay, contributing to the Bay's pollution. As a consequence of poor water quality, in 2010, national regulations instituted the TMDL (total maximum daily load), a limit on pollution levels allowed in the Chesapeake Bay and hence the water bodies flowing into it. Along with the requirements tied to Virginia's Clean Water Act permit for Hampton, the city suddenly faced demanding requirements regarding water quality standards. **Stormwater infrastructure is very expensive in urban and suburban settings,** especially if it must be retrofitted into already developed landscapes. Traditional financial instruments to pay for stormwater infrastructure in the US include municipal bonds, municipal budgeting, stormwater fees or utilities, federal or state revolving loan funds, and public or private grants. Obtaining new money required to meet increased requirements is a challenge, especially for green infrastructure retrofitting projects.

When imposed with more demanding water quality requirements, Hampton realised that it was facing other water-related challenges, including regular and increasing tidal- and storm-related flooding of various residential and commercial areas in the city. Following the 2011 Hampton Comprehensive Waterways Management Plan, an interdepartmental Resilient Hampton team was created within the city in 2015. The team initiated **Resilient Hampton**, a city-wide interdepartmental sustainability initiative with the objective to improve residents' quality of life in the face of water-related challenges by increasing the City's ability to withstand and recover from them. The city drew in external consultants from various regions and companies to help with planning and design. In 2017, the city published **Living with Water Hampton**, a city-wide plan including guiding principles, goals, and values, marking the end of Phase I. Phase II included the development of detailed plans and projects on a watershed level. Through community involvement and collaboration with external consultants, the city published the **Newmarket Creek Water Plan** in 2020, a concept plan for the Newmarket Creek Watershed, one of the city's main water bodies in the heart of the city. A second watershed plan for Downtown Hampton, Phoebus, and Buckroe was completed in October 2023.

This report focuses on the Newmarket Creek Water Plan. The plan consists of **three nature-based infrastructure pilot projects** (Figure 1) to increase stormwater storage volume capacity, with an estimated total added volume capacity of 32,600 m³: Big Bethel Blueway, North Armistead Avenue Road Raising, and Lake Hampton. Construction of Lake Hampton is ongoing and will be completed by the summer of 2024. Construction of the Big Bethel Blueway started in autumn 2023 and is expected to be completed in autumn 2025, and construction of the North Armistead Avenue project is expected to start in autumn 2024 and is expected to be completed in 2027. **The projects have a total investment cost of \$34 million, of which \$12 million will be financed from the proceeds of an environmental impact bond (EIB).** The EIB is the focus of this report, and its process will be explained in detail in the section 'Business model and financial model'. Hampton is only the third EIB being adopted, the first one being the DC Water Environmental Impact Bond in 2016.

Table 2. Hampton Environmental Impact Bond. Timeline with key moments

Date	Key moment
2010	TMDL – Total Maximum Daily Load was imposed on all states of the Chesapeake Bay. TMDL is a calculation of the maximum amount of a pollutant that a waterbody can accept and still meet the state's Water Quality Standards for public health and healthy ecosystems
2011	The City of Hampton publishes its Comprehensive Waterways Management Plan with recommendations and strategies to address key issues associated with the City's waterways, shoreline, and storm water management needs
2015	The Resilient Hampton initiative starts with the objective to improve residents' quality of life in the face of water-related challenges by increasing the City's ability to withstand and recover from them
2017	Publication of 'Living with Water Hampton', a city-wide plan including guiding principles, goals, and values for water-related challenges
2020	Newmarket Creek Water Plan in 2020, a concept plan for the Newmarket Creek Watershed, including three pilot projects: Big Bethel Blueway, North Armistead Avenue Road Raising, and Lake Hampton.
2023	Completion of a second watershed plan for Downtown Hampton, Phoebus, and Buckroe
2024, summer	Expected completion time of the Lake Hampton project. Construction is ongoing.
2023-fall 2025	Expected construction time for the Big Bethel Blueway project. Construction is ongoing.



2024-2027	Expected construction time for the North Armistead Avenue Road Raising project. Construction has not yet started. ¹
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Figure 1. The Hampton Resilience's three pilot projects: Big Bethel Blueway, North Armistead Avenue Road Raising, and Lake Hampton.²

Governance and key stakeholders

Figure 2 provides an overview of the organizational structure of the Resilient Hampton initiative, highlighting the project planning and development of the Newmarket Creek Water Plan on the right side, and the Environmental Impact Bond (EIB) on the left side. At the centre of the organisation is the city's **interdepartmental Resilient Hampton Team**, currently (April 2024) comprising fourteen people from six city administrations or departments. Two other main actors are the **Chesapeake Bay Foundation (CBF)** and **Quantified Ventures (QV)**. The CBF is the largest independent conservation organisation dedicated solely to saving the Bay. QV is a consulting company that helps public and private stakeholders structure outcomes-based transactions and drive capital towards innovative solutions across the environmental, health, and social sectors. CBF reached out to various foundations and grant funders with a detailed proposal for a two-year research project to explore EIB applications in the Chesapeake Bay Watershed. An anonymous donor provided the first large grant, which needed to be matched by others. The Kresge Foundation matched part of it, and smaller matches were provided by two Baltimore-based grant-makers, the Abell Foundation and the Goldseker Foundation. In 2017, the Chesapeake Bay Foundation (CBF) launched a three-year project to explore the potential application of EIBs to finance infrastructure in the Chesapeake Bay Watershed. As part of that project, CBF and QV approached Hampton and introduced the city to the idea of using an EIB to finance (part of) future Resilient Hampton projects. The donation-funded research project allowed CBF and QV to provide technical services for developing the projects and the EIB in Hampton.

¹ Status as of April 2024

² Community Development. (nd). *Resilient Hampton*. City of Hampton. Last consulted on 8 April 2024, [URL](#)

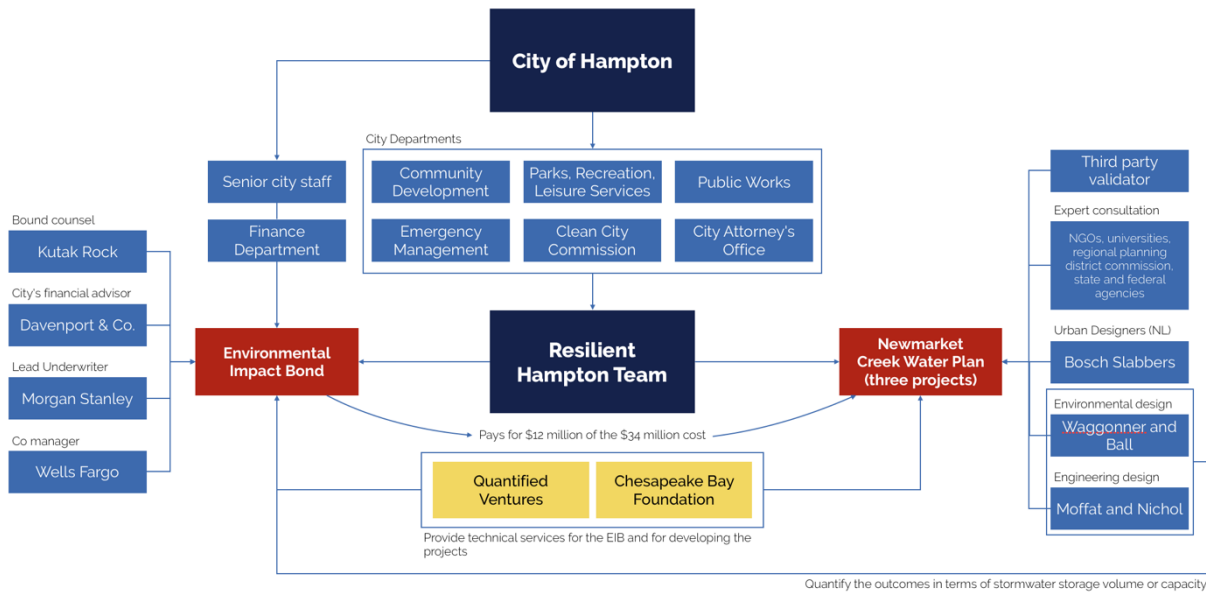
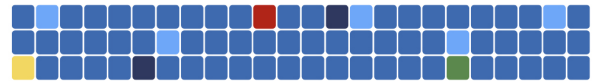


Figure 2. Organizational structure of Resilient Hampton, including the Environmental Impact Bond and the Newmarket Creek Water Plan

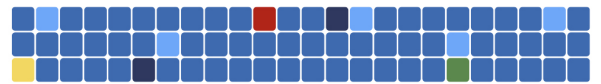
The development of the projects included in the **Newmarket Creek Water Plan** was the result of a partnership between the Resilient Hampton Team and **external consultants**, including urban designers from the Netherlands (BoschSlabbers), an architecture and environmental design firm based in New Orleans (Waggoner & Ball), engineering design work by national engineering firm Moffat & Nichol Engineers, and other partners (including NGOs, universities, regional planning district commission, and state and federal agencies).

The EIB was the result of an intense partnership between CBF, QV, ten senior city staff, the city's Finance Department, the Resilient Hampton Team, and four financial actors. Once Hampton's application for CBF assistance was approved, briefings of **senior city staff** about how an EIB might work began. It soon became a strong working relationship. CBF and QV began participating in a regular meeting schedule for ongoing coordination and consultation with other partners. **Law firm Kutak Rock is the bond counsel** that provides assurance both to issuers and to investors who purchase the bonds that all legal and tax requirements relevant to the matters covered by the opinion are met. **Davenport & Co. is the city's independent financial advisor. Bank Morgan Stanley served as the underwriter, with bank Wells Fargo as co-manager.** Kutak Rock, Davenport, the city's finance staff, QV, and CBF created the bond transaction documents. The underwriters (Morgan Stanley and Wells Fargo) purchase all the bonds subject to certain terms and may offer and sell them to certain dealers or investors.

An important characteristic of an environmental impact bond is that it reports to its investors the actual outcomes (as-built) of what the proceeds are used for, in this case, the total stormwater storage volume capacity of three pilot projects (more details in the next section). This requires estimated outcomes (as-designed) that can be included in the issuance of the bond, so there is a target outcome that investors are aware of before purchasing bonds. **Moffat & Nichol and Waggoner & Ball helped quantify what the outcomes were going to be**, and even led some of the EIB meetings. They helped determine the evaluation and reporting procedures. A third-party validator (unknown at the time of writing) will be responsible for evaluating the three pilot projects' outcomes once construction is completed. Once the city receives this information, it will be reported by the Resilient Hampton Team.

Table 3. Hampton Environmental Impact Bond. Key stakeholders and their responsibilities or roles

Stakeholder	Type	Role and responsibilities
City of Hampton	Public (municipality)	Responsible for meeting state and national stormwater regulations and requirements.
Resilient Hampton Team	Public (municipal)	A team composed of members of six City of Hampton departments or offices. They lead the Resilient Hampton initiative to develop plans and projects to tackle water-related challenges, including the Newmarket Creek Watershed Plan and the EIB. Responsible for reporting on the project outcomes once completed.



Chesapeake Bay Foundation (CBF)	Private (foundation)	largest independent conservation organization dedicated solely to saving the Bay. together with QV, CBF provides technical services for the EIB and for developing the projects.
Quantified Ventures (QV)	Private (consulting)	Together with CBF, QV provides technical services for the EIB and for developing the projects.
Kutak Rock	Private (law firm)	Bond counsel that provides assurance both issuers and investors who purchase the bonds that all legal and tax requirements relevant to the matters covered by the opinion are met. Kutak Rock Helped crating the bonds transaction documents.
Davenport & Co.	Private (finance advisor)	The city's independent financial advisor. Davenport Helped crating the bonds transaction documents.
Morgan Stanley	Private (bank)	Underwriter of the EIB
Wells Fargo	Private (bank)	Co-manager of Morgan Stanley as underwriter of the EIB
Moffat & Nichol	Private (engineering)	They helped quantify the outcomes (stormwater storage volume) and did engineering design of the three pilot projects (phase II).
Waggoner & Ball	Private (design)	They helped quantify the outcomes (stormwater storage volume) and did the architecture and environmental design of the three pilot projects (phase I and II).
BoschSlabbers	Private (urban design)	Urban design firm from the Netherlands that did consultation for the Resilient Hampton initiative (phase I and II).
Other	Private (various)	External consultation also came from NGOs, universities, regional planning district commission, state and federal agencies.
Third party validator (unknown)	Private	Responsible for measuring the outcomes – total stormwater storage volume capacity – of the three pilot projects once construction is completed.

Business model & financial model

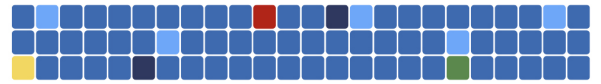
Business model

The Resilient Hampton initiatives and the plans and projects it has developed do not have an explicit business model. The initiative can be interpreted as **a shift from traditional grey stormwater infrastructure to green infrastructure** that offers local communities, including disadvantaged groups in society, various co-benefits alongside complying with stormwater regulations. Among these co-benefits are adaptation and resilience. In 'Living with Water Hampton' (2017), it states: "Resilience strategies require a shift in the approach to water management. The current strategy of piping and draining stormwater will become less effective as sea levels rise. Methods for slowing, storing, and - when possible - discharging water can create a living water system with greater capacity for adaptation and stress absorption." Like other municipalities and counties in the Chesapeake Bay states, Hampton was obligated to comply with increasingly demanding stormwater regulations. Other programmes, like the Washington Stormwater Regulations and Stormwater Retention Credit trading programme, solely aim to decrease stormwater runoff to improve water quality. Washington has separate programmes to address flooding. Resilient Hampton, on the other hand, is a more holistic approach that looks at solutions to address multiple water-related challenges, while being conscious of the dispersion of possible projects and benefits across communities of varying sociodemographic compositions.³

The main value of the three critical projects is a **reduction of polluted water runoff and flooding** in the Newmarket Creek watershed, an area with extreme flooding vulnerability. The projects offer a variety of **citywide co-benefits**, including improved air quality, neighbourhood green spaces, reduced urban heat island effect, and, with other funding for future expansions, recreational spaces with walking and biking trails. Lake Hampton will also become a habitat for birds and other wildlife. North Armistead Avenue Road Raising will reduce flooding on one of the city's main streets, eliminating traffic disruptions from a current average of 92 hours of flooding per year. The residents of Hampton can look forward to improved storm resilience, cleaner water, and better transportation and recreation infrastructure because of these important projects.

In 2021, the three pilot projects of the Newmarket Creek watershed plan were estimated to cost \$12 million. At that point, the impression was that the \$12 million EIB would cover those costs. Final designs led to an

³ It is unclear how the environmental impacts and broader socio-economic impacts are considered. The Resilient Hampton initiative, including 'Living with Water' plan and the Newmarket Creek Pilot Project Area Water Plan, includes a range of goal statements but does not have any key performance indicators.



increased **estimated cost of \$34 million**. The EIB proceeds were insufficient but helped to secure an additional \$24 million in grants from state and federal agencies. As of 2023, the city has only expended about \$6 million from the bond so far. Hampton's Community Development Director said that the city plans to explore the feasibility of using remaining bond grant funds for other resiliency projects. Maintenance is not included in these cost estimates. The city will be responsible for maintenance, which will be added to their workload. The interdepartmental Resilient Hampton team ensures that maintenance becomes a shared responsibility of multiple departments.

These **three pilot projects are by far the biggest stormwater infrastructure projects in Hampton**. Other stormwater infrastructure projects included in the city's Capital Improvement Fund range between \$500,000 and \$1.5 million, including drainage improvements, wet pond construction, and a detention pond. Some of these project investments are spread across multiple years.

Financial model

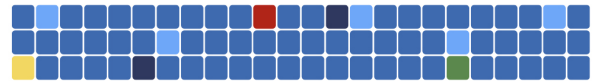
An **environmental impact bond (EIB)**, like a green bond, provides regular bond-type financing, where investors provide capital to municipal entities to create infrastructure labelled as green or sustainable. The capital is paid back with interest to the investors over a set schedule, often with maturity between 10 and 30 years. In a green bond framework, the projects for which the proceeds are eventually used are publicly reported. Different from a traditional green bond, **an EIB is a designation given to a "green" municipal bond that not only funds environmentally or socially beneficial projects but also commits to a quantitative prediction, post-implementation evaluation, and disclosure to both bond investors and the community, of actual project outcomes**. EIBs are modelled after social impact bonds, which had been in the marketplace several years before the first EIB. Green bonds have been criticised for not disclosing outcomes once projects become operative, making it difficult to determine how green or sustainable the investments actually are for which proceeds were used. There are two EIB types:

- **Performance payment EIB:** The financing terms are determined by the outcomes of the project. The financing terms can include a **success payment** if the project performs better than predicted. Investors will then receive an additional financial reward next to the principal amount and annual interest rates. Financing terms could also include a **risk share contribution**, whereby investors pay the issuer a predefined amount if the project fails to achieve its predicted outcomes. Risk share payment terms are especially useful if EIB proceeds are used for innovative projects or solutions with unproven impacts. If the project fails, the issuer, e.g. a municipality, recovers some of the debt repayment that can be used to finance new projects. This EIB type, aside from being a debt instrument, can also be considered a results-based financing instrument because payments are partly based on the achievement of particular outcomes and targets.
- **Disclosure only EIB:** Investors are only informed about project outcomes; **there are no payments related to performance**. Even without a performance payment, EIBs remain appealing to impact investors who are not only interested in the bond's intended use (some particular social good) but also in the bond's actual outcome.

The **Hampton EIB is a disclosure-only EIB**. Hampton is a rather fiscally conservative municipality, which was a factor in the city's decision not to have the financial terms based on the results. The general impression of those involved was that they first wanted to try the EIB this way, and if the experience is positive, the next one may include a performance payment.

Three key principles of an EIB are **prediction, evaluation, and disclosure** of the quantitative outcomes. Consequently, EIBs have extra financial-technical components compared to traditional green bonds. Outcome metrics must be determined that are measurable and quantifiable. EIBs can target projects that generate avoided costs in the future, such as reduced costs from NBS versus grey solutions, avoided regulatory enforcement and punishment for non-compliance (e.g., for not meeting state or federal stormwater requirements), or reduced losses in the event of a significant storm event. Furthermore, the result of the project may be non-financial, such as the recovery of habitat if the outcome beneficiary is willing to attach a value to it and remunerate investors for contributing to it.

For the City of Hampton EIB, the Primary Outcome Metric is gallons of stormwater volume storage capacity across the three Resiliency Projects. In the case of a performance payment EIB, the bond also describes the size of these performance payments and the thresholds that trigger performance payments. In both performance payment and disclosure-only EIBs, a third-party evaluator or validator evaluates the project outcomes to compare the as-built project outcomes with the as-designed (pre-construction) project predictions. As described in the EIB's technical memorandum, "the city will contract with a third-party validator once the projects are nearing completion and ready for outcome evaluation. To preserve objectivity, the third-party evaluator has not and will not have been involved in the City of Hampton EIB or its projects up until that point." **The technical memorandum further describes the outcome evaluation methodology:** "The measurement of as-built Stormwater Volume Storage Capacity will be evaluated in two steps:



1. "The contractor will measure the final volume storage capacity after completing construction of each project by conducting an as-built survey of each project site. The surveys will measure the geometric dimensions of each project that determine its stormwater volume storage capacity."
2. "The independent third-party validator will conduct a site inspection of each project to corroborate the contractor's as-built survey, including spot check field measurements and photography." The results are put in a report to be shared with the City."

The environmental metric that seemed most amenable to measurement, and most relevant to all three projects, was the volume of water to be stored and managed. Specifically, the metric would measure the volume of water management (storage capacity) projected from the pre-construction designs (8.62 million gallons), as compared to the "as-built" projects, to be validated in post-construction surveys by an independent evaluator.

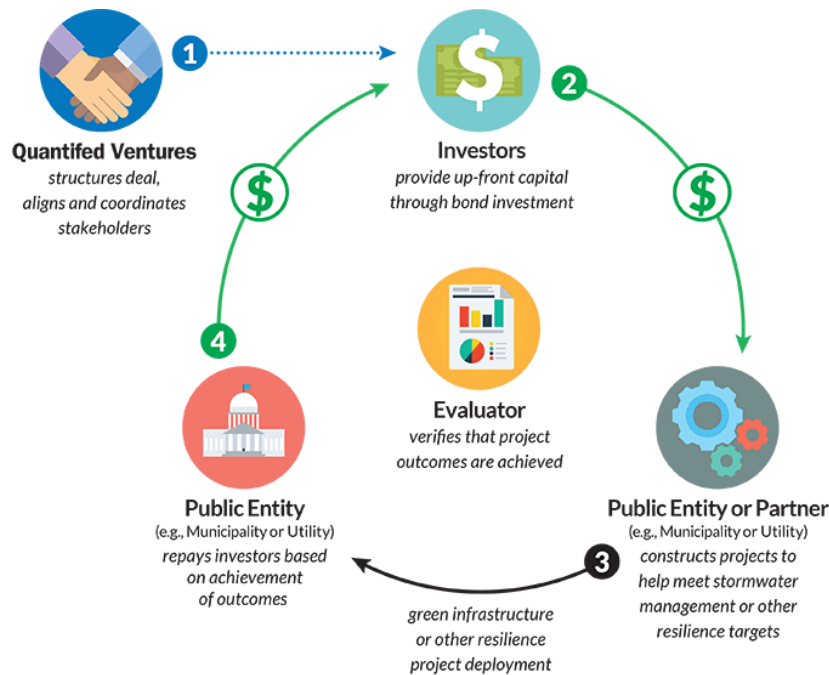


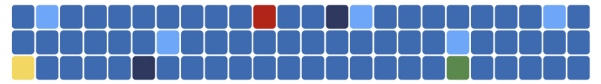
Figure 3. Overview of how an environmental impact bond works. © Chesapeake Bay Foundation

Figure 3 visually summarises the key steps of an EIB as applied in Hampton:

1. Quantified Ventures (QV) or other companies that assist with outcomes-based capital development work with municipalities to bring the necessary parties together and **determine the parameters of the Environmental Impact Bond**, including interest rate, timeframe, outcome metrics, and more.
2. A **municipality issues the Bonds and sells them** to private investors to finance environmental capital projects.
3. The municipal issuer then uses this funding for **green infrastructure solutions**. The entity is required to pay interest on the bonds and to repay the principal amount of the bonds on scheduled payment dates.
4. The independent, third-party validator will conduct site inspections of each project and will make a report. The city will post the validator's report and comparisons of the as-designed and as-built project volume storage capacities on the Resilient Hampton website, fulfilling the city's obligations to report the outcome to the bond investors.

In the case of a performance payment EIB, a fifth step includes an outcome payment by the issuer to the investors if the project performs better than expected, or a risk-sharing payment by the investors to the issuer if the project underperforms.

In Hampton, after the bond solicitation on the open market was made with the help of the bond underwriting team, bids were received and reviewed by the City's financial team. EIB investors were selected by the City shortly thereafter, with winning bids offering a very favourable interest rate: less than two percent. Within the US bond market, the \$12 million Hampton EIB is a relatively small bond but still received interest from some of the largest investors in the world, including large investment banks, bond firms, and capital managers. Other investors included regional banks and insurance/pension plans. This resulted in a mix of mainstream municipal bond investors based on Hampton's excellent credit rating as well as some of the largest ESG-oriented bond investors in the world, who were attracted by the enhanced impact measurement of this bond.



No information was found about the instruments that the City of Hampton uses to repay investors. A possible instrument could be revenues from stormwater bills, as seen in other cases of innovative finance for stormwater improvements around the Chesapeake Bay.

Enabling conditions

While an environmental impact bond was, and still is, a relatively new type of bond, it did not require new or different official, legal, or statutory requirements not already in use for normal bond issuances. All the specific characteristics of an EIB are simply captured in the bond documents themselves. More important were **financial knowledge and expertise**. The City of Hampton did not (and still does not) possess the in-house expertise to launch an EIB. The expertise of Quantified Ventures and the Chesapeake Bay Foundation's research project funded by donors and foundations were important enabling conditions. The lack of knowledge about EIBs among city staff required QV and CBF to engage in multiple conversations with the finance department and the city's financial advisors to make them feel comfortable with the EIB. At that time, standard market interest rates for loans were so low and competitive that the city questioned if it wasn't better to just stick to the instruments and sources they knew. It was, therefore, challenging to sell the EIB to Hampton, but QV and the CBF were successful in the end. The city itself did not hire any new staff or invest specific money in the development of the EIB. The city incorporated the workload into the duties and responsibilities of existing municipal staff and financial operations.

The **risk-sharing** of an EIB depends on the type of EIB, and following that, it becomes a **matchmaking exercise between issuers and investors**. If an EIB is used for very innovative projects, the investment is riskier for an investor if the EIB has a risk-sharing payment mechanism. From the perspective of the issuer, the risk-sharing payment partly protects the issuer in case the project underperforms. In the case of a disclosure-only EIB, the investors cannot get an additional reward but also do not lose part of their investment if the project underperforms. Which investor is attracted to which type of EIB thus depends on the risk appetite and general vision of the investor. For example, philanthropic organisations may be more willing to put their capital at risk in innovative green infrastructure solutions. Regardless of the type of EIB, the environmental impact label of the bond ensures that investors know exactly how their investment has performed, contrary to traditional green bonds that do not disclose performance outcomes.

Outcomes

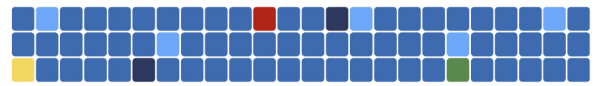
Because all three pilot projects of the Newmarket Creek watershed plan are under construction, there is no information at the time of writing (April 2024) about the outcomes.

Lessons learned

Successes and limitations

We cannot make statements about the success or failure of project outcomes because project construction is still ongoing. We thus focus on the success and limitations of the Environmental Impact Bond segment of Resilient Hampton. Generally, the issuance is perceived as successful considering the many and different types of investors it attracted. An important **success factor** stated by the interviewees and found in CBF's (2021 report) that initially led to the issuance of the EIB is the **partnership** that was established between city officials, decision-makers, and the external partners. The successful partnership has different layers. First, the **city authorities were very interested** in this new instrument whereby money is specifically set aside for (innovative) green infrastructure projects for which it is difficult to obtain financing through traditional means like municipal bonds or state revolving loan funds. This, in combination with strong relationships across city departments, including the finance department, and continuous engagement of the community, convinced Hampton to issue an EIB. Convincing decision-makers and high-ranking officials required a second layer of external experts that could explain an EIB in clear terms and gain the confidence of the finance department and other city staff.

Once issued, the attention for the EIB was overwhelming and the bond was oversubscribed multiple times, with winning bids collectively presenting a very favourable interest rate for the City: less than two percent. The attention from large international investors is very unusual for an issuance of this size. This is because of the **bond's environmental impact label** and the quantification of outcomes. Some investors even said that they would never have considered a bond this small if it wasn't an EIB. Investors also liked the **replicability potential of the pilot projects**. Hampton deliberately chose the three pilot projects Big Bethel Blueway, North Armistead Avenue Road Raising, and Lake Hampton because these project types, if performing well, could be replicated in other parts of the city. Investors valued the idea that their investment may have longer-term impacts beyond these three pilot projects, which are the first of their kind in Hampton. These success factors were reported in Brears (2022) for EIBs in general and mentioned by the interviewees for this particular case.



The number of EIBs issued globally is still limited, and there is no information about important **limitations** attached to the EIB, nor in this case. A possible disincentive for municipalities or regions that must comply with the federal and state Chesapeake Clean Water Blueprint to use an EIB is that municipalities get pollution reduction credit based on the completion of a stormwater project—not on how well that project subsequently performs. The current regulatory framework in this area does not reward performance.

Transferability conditions and potential

The Hampton EIB proves that even small- or medium-sized municipalities can successfully use an EIB to finance (innovative) green infrastructure projects. The EIB is merely an extension of (green) bonds already widely used globally to finance infrastructure. The bond itself contains more financial-technical elements than traditional (green) bonds, but these do not require different legal frameworks than other types of bonds. The overwhelmingly positive attention for the Hampton EIB from the underwriters and later investors is proof that mainstream investors are looking for outcomes-driven investments like this as their own ESG strategies and interests expand. This global demand increases the transferability potential of EIBs to other territories, including the municipalities and regions in the EU. Interested territories must consider the following **conditions**:

- **High-ranking champions** within a public authority are important to create trust among the city staff, the community, investors, and other partners. There must be support for this type of financing instrument.
- **A strong team** with good relationships and collaborations between high-ranking officials, multiple departments, and external partners. The team must be flexible with respect to the different EIB types and projects that will be financed with the proceeds.
- **Involve the finance team early** in the process to familiarise them with the concept of an EIB.
- It is expected that local authorities, especially small- or medium-sized municipalities, possess knowledge neither about an EIB nor about municipal bonds in general. In that case, it is important to **have external expertise on the team** that can provide assistance and explain the ins and outs of an EIB.
- The ability to **quantify the performance** of green infrastructure projects in financial or non-financial terms. We have no knowledge of EIBs for other types of social or environmental projects. If quantifiable or measurable outcome metrics can be identified and agreed upon, an EIB could be used as a financial instrument in other project types too.

Related factsheets

- The factsheets of the Clean Water Partnership (ID 02) and the Washington Stormwater Retention Credit trading programme (ID 07) also discuss the challenge of water pollution (and to a lesser extent flooding) in the Chesapeake Bay Area under the federal Clean Water Act, but those areas use other adaptation funding and financing solutions to direct money to green-blue infrastructure. In Washington, they use a stormwater credit trading programme with project developers as the main sources, whereas the Clean Water Partnership is an example of a community-based public-private partnership.
- Other cases that include a bond, although not an environmental impact bond, are Paris Climate Bond (ID 09), Viveracqua Hydrobond (ID 16), and Gothenburg Green Bond (ID 18).

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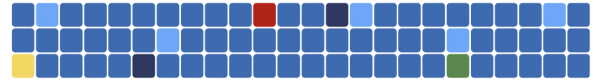
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