Quantified Ventures is an outcomes-based capital firm that drives transformational health, social, and environmental impact.

Across 4 Practice Areas

- Forestry and Land Use
- Agriculture
- Urban and Coastal Resilience
- Health and Human Services

Delivering ROI + Impact

- Consulting
- Project Development and Operating Companies
- Investing

Certified B Corporation: This company meets the highest standards of social and environmental impact.
We need more and new sources to pay for solutions

1. **The challenges are complex**: Most challenges involve multiple stakeholders. Both public and private sectors need bold solutions to solve big and complex health, social, and environment challenges.

2. **Budgets are strained**: Resources are finite. Even recent funding wins do not bridge the gap in funding for services and infrastructure. There is a $2.6 trillion gap between what we currently spend and what we need to spend during the next 10 years to keep our country’s infrastructure in good repair.*

3. **Investors are motivated**: They are increasingly looking for opportunities to deploy capital to solutions that yield both financial and social returns. Impact capital is estimated at $715 billion and growing worldwide.**

* 2021 Infrastructure Report Card, American Society of Civil Engineers
** Global Impact Investing Network (GIIN)
Environmental, Social, and Governance (ESG) Trends

- Local community engagement to ensure economic and social equity.
- ESG tailwinds in public and private sectors.
- Transparency, data, and measurable outcomes.
Muni bond investors are increasingly asking for proof that their investments generate positive community impact.

With explosive growth in the ESG bond market, investors are looking for more than just pre-issuance intent to have impact. They're seeking investments with increased transparency, impact quantification, and credibility beyond simple use of proceeds.

Industry-standard labels defined by the International Capital Market Association (ICMA):

ICMA labels are earned by “use of proceeds”: the issuer declares intent to use investor dollars for projects that fit categories of green, social, or green + social projects.

With explosive growth in the ESG bond market, investors are looking for more than just pre-issuance intent to have impact. They're seeking investments with increased transparency, impact quantification, and credibility beyond simple use of proceeds.
Quantified Ventures customizes the financing structure of its projects to the needs and constraints of our partners

<table>
<thead>
<tr>
<th>Environmental Impact Bonds</th>
<th>Outcomes-Based Funds</th>
<th>Public-Private Partnerships</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Municipal bond with enhanced disclosure and potentially variable payments based on project results</td>
<td>- Investors seed a special purpose vehicle to fund upfront project development and maintenance</td>
<td>- Investors seed a private development venture (typically a special purpose vehicle) to fund upfront project development and maintenance</td>
</tr>
<tr>
<td>- Municipality decides on structure and range of variable payments and how outcomes will be measured</td>
<td>- Municipality repays SPV based on project results and measured outcomes (e.g., price per gallon)</td>
<td>- Municipality repays the development venture based on project results and measured outcomes</td>
</tr>
<tr>
<td>- Municipality oversees construction and maintenance</td>
<td>- Municipality oversees construction and maintenance</td>
<td>- Other co-beneficiaries brought in to subsidize municipality costs</td>
</tr>
<tr>
<td></td>
<td>- Provides off-balance sheet flexibility in terms and repayment structure</td>
<td>- 3rd party private development venture oversee construction and maintenance using city criteria (e.g., local workforce)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Other programs – e.g., workforce development – included in program based on community preferences</td>
</tr>
</tbody>
</table>
Quantified Ventures specializes in designing innovative and scalable solutions

Structured and replicated the first-ever **Environmental Impact Bond** financing green infrastructure to deliver social and environmental outcomes in urban areas.

Launched the first subsidiary, ReHarvest Partners, that **stacks carbon and water quality outcomes** to pay farmers to implement conservation ag best management practices through the Soil and Water Outcomes Fund.

Developing an innovative **family focused recovery health outcomes fund structure** to sustainably scale capacity to provide SDOH and health-related social services that will lower costs and improve health outcomes.
An Environmental Impact Bond (EIB) Ties Repayment to Project Performance

1. Quantified Ventures
   Develops outcome solutions, performance metrics, aligns and coordinates stakeholders

2. Investors
   Provide up-front capital through bond investment

3. Public Entity or Service Provider
   Constructs projects to help meet environmental outcomes or other key targets

4. Public and/or Private Entities
   Repay investors based on achievement of outcomes

Evaluator
Verifies that project outcomes are achieved
Environmental Impact Bond issuers commit to predict, evaluate, and disclose actual project outcomes

An Environmental Impact Bond does three things:

1. **Quantitative prediction of a project outcome metric**

2. **Post-implementation evaluation of actual project outcomes**
   - Simple low-cost protocols, ideally using existing issuer expertise and capacity

3. **Disclosure of actual outcomes to investors and stakeholders**
   - EIBs may have some terms of the investment change with outcomes
For the right issuer, turning a bond into an EIB conveys multiple benefits over a standard municipal bond.

**EIB Candidate**
- Planning to issue a bond in the next 6 – 18 months
- Leadership open to considering bold but market-tested solutions
- Projects with environmental and/or social goals

**Environmental Impact Bond**
- Municipal bond
  - Actual outcomes of funded projects predicted, evaluated, and disclosed to investors and public

**Reputational benefit**
- Local, national, and industry news coverage
- Leadership among peer municipalities
- Trust built with taxpayers

**Governance benefit**
- Accountability and transparency in public spending
- Data-driven decisions in future capital spending
- Stronger collaboration and communication across departments

**Financial benefit**
- Increase investor base to include ESG-oriented investors
- Relationships with new investors
- Reduce ESG risk perceived by investors and credit agencies
## Environmental Impact Bond Structures Are Highly Customizable Based on Local Context, Priorities, and Needs

<table>
<thead>
<tr>
<th>Primary Value Proposition of EIB</th>
<th>Washington, DC</th>
<th>Atlanta, GA</th>
<th>Hampton, VA</th>
<th>Buffalo, NY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td>$25 million</td>
<td>$14 million</td>
<td>$12 million</td>
<td>$54 million</td>
</tr>
<tr>
<td><strong>Term</strong></td>
<td>30 years (5 year mandatory tender)</td>
<td>10 years</td>
<td>20 years</td>
<td>30 years</td>
</tr>
<tr>
<td><strong>Placement</strong></td>
<td>Private</td>
<td>Limited Public</td>
<td>Public</td>
<td>Public</td>
</tr>
<tr>
<td><strong>Outcome Metric</strong></td>
<td>Volume capture (flow / runoff)</td>
<td>Volume capture (capacity / storage)</td>
<td>Volume capture (capacity / storage)</td>
<td>Impervious surface area managed</td>
</tr>
<tr>
<td><strong>Regulatory Driver?</strong></td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Outcomes-Based Financing Structure</strong></td>
<td>3-tiered performance payment structure (Low, Base, High)</td>
<td>2-tiered performance payment structure (Base, High)</td>
<td>Outcomes evaluation, reporting, and disclosure only</td>
<td>Outcomes-based early call option, coinciding with step-up in coupon rate</td>
</tr>
</tbody>
</table>
CASE STUDY: DC Water, the First-Ever Environmental Impact Bond

Green Infrastructure Proves its Worth in Washington, DC

**Challenge**

- DC’s combined sewer system was dumping 2.5 billion gallons of overflow annually into 3 rivers
- DC given consent decree in 2005 to fix the issue
- Original approach – $2 billion for grey tunnel system – was expensive and didn’t provide community benefits
- DC Water interested in green infrastructure, but performance was uncertain and risky

**Solution**

- $25 million Environmental Impact Bond issued to finance green infrastructure installation
- Outcome metric: stormwater runoff reduction vs. baseline
- Investor payments tied to stormwater volume capture outcomes thereby transferring some performance risk to investors
- 25 acres of new green infrastructure installed across the city reduced stormwater runoff into Rock Creek by nearly 20% (no outcomes payment)
- Green infrastructure workforce program that’s trained 190 District residents
- DC Water made mandatory tender and full repayment of the EIB in 2021
# Fighting Chronic Flooding and Water Pollution in Hampton, VA

## Challenge

- Coastal location, low elevation, and high impervious surface coverage / groundwater table causes frequent local flooding + polluted stormwater runoff
- Climate change, sea level rise, and increasing storm severity make Hampton and its citizens increasingly vulnerable
- Interdepartmental initiative – Resilient Hampton – searches for solutions

## Solution

- $12 million bond issuance to finance 3 green infrastructure projects to manage coastal and stormwater flooding in low- and moderate-income communities
- Outcome metric: gallons of added stormwater storage capacity (8.6M gall.)
- Focus on and measurement of outcomes promotes governance best practices, attracts municipal bond investors with ESG mandates, and informs future planning, financing, and implementation
- 2x oversubscribed; ESG-oriented investor interest contributed to underwriters ability to lower yields
- Financed projects prototypes for a decades-long pipeline of resilience work

## CASE STUDY: Resilient Hampton Finances Green Infrastructure Through Environmental Impact Bond as Part of “Living with Water” Approach
Equitable Natural Infrastructure in Buffalo, NY

CASE STUDY: Buffalo Sewer Authority Environmental Impact Bond

**Challenge**

- Buffalo, like many older cities, has a combined sewer system. In wet weather, untreated wastewater can overflow into creeks, rivers, and lakes.
- Buffalo Climate Vulnerability Assessment estimates the city will face up to 4 inches of additional annual precipitation by mid-century, increasing the risk of flooding and putting additional strain on stormwater infrastructure.

**Solution**

- $54 million municipal Environmental Impact Bond issued to design and implement green infrastructure to capture stormwater, reduce combined sewer overflows, and enhance community benefits, including jobs.
- 6 priority combined sewer overflow basins that are home to 48 percent of Buffalo’s residents are the focus for the green infrastructure.
- Basins selected based on social and economic equity considerations in addition to stormwater management need.
- EIB includes an option to refinance or retire the bond in year 7 or later, should it meet or exceed the outcome threshold of 200 new acres of impervious surface area financed and implemented with bond proceeds.
- Buffalo Sewer the first municipal issuer in the United States to link a positive incentive to performance.
Key Questions for EIBs

What are the range of outcomes that landscape-scale green infrastructure and ecosystem restoration deliver? How can those outcomes be valued?

Who values the potential outcomes? What is their risk tolerance and what role can they play? How are community stakeholders engaged?

What is the cost-benefit analysis of various approaches? Where does local capacity already exist and where does it need to be built? Are projects sustainable and equitable?
Who is Investing in Nature?

Coalition for Private Investment in Conservation

2021 Conservation Finance Report

Figure 4 – Type of investors among survey respondents. Other organizations include consulting firms and impact funds. Based on data from 26 organizations.
## EIBs and Other Outcomes-Based Financing

- Enable payments based on achievement of successful outcomes and goals
- Transfer risk of project performance to investors
- Outcomes evaluation builds evidence base to inform future project planning and funding
- Tap into new base of impact and ESG investors
- Enhanced reporting on and disclosure of outcomes to investors
- Opportunities to engage other beneficiaries and stakeholders and bring them to the table
- Showcase partners and projects; demonstrate innovation, attract internal and external support

## Traditional Municipal Bonds or Other Debt

- Payment for project alone, regardless of whether it successfully achieves goals and outcomes
- No risk transfer
- No outcomes evaluation
- Green and sustainability bonds tap into impact and ESG investors, but traditional bonds don’t
- Even green and sustainability bonds are typically “use of proceeds” with no reporting on *ex post* impact
- No engagement with additional beneficiaries or stakeholders at the table
- Business as usual
Please reach out for more information

Seth Brown
Director
brown@quantifiedventures.com