



Environmental Impact Bonds: Overview + Case Studies

LGAC Quarterly Meeting
Chesapeake Executive Council

September 29, 2021 | Jason Y. Lee + Matt Lindsay



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

What We Do

We develop projects and structure financing for innovative environmental and health solutions using an outcomes-based or “pay-for-performance” approach that aligns financing with project results



QV offerings span the entire project financing process, from initial solution scoping to raising capital



Consulting

We assess, model, and deliver outcomes-based financing solutions to resolve protracted health, social, and environmental challenges confronting communities.



Project Development

We work with diverse partners to design and develop programs and projects that create health, social, and environmental benefits for people and ecosystems.



Investment

We offer creative financing solutions for public and private organizations seeking to drive improvements by tying payments to achievement of positive outcomes.

Practice area

Example projects



Urban and Coastal Resilience

Urban green infrastructure installations to address CSO overflows, flooding, and water quality; coastal restoration and resilience; water quantity issues



Forestry and Land Use

Proactive forest health treatments to reduce risk of wildfires; reforestation; outdoor recreation for economic development; and reclaiming biomass byproducts for commercial use



Agriculture

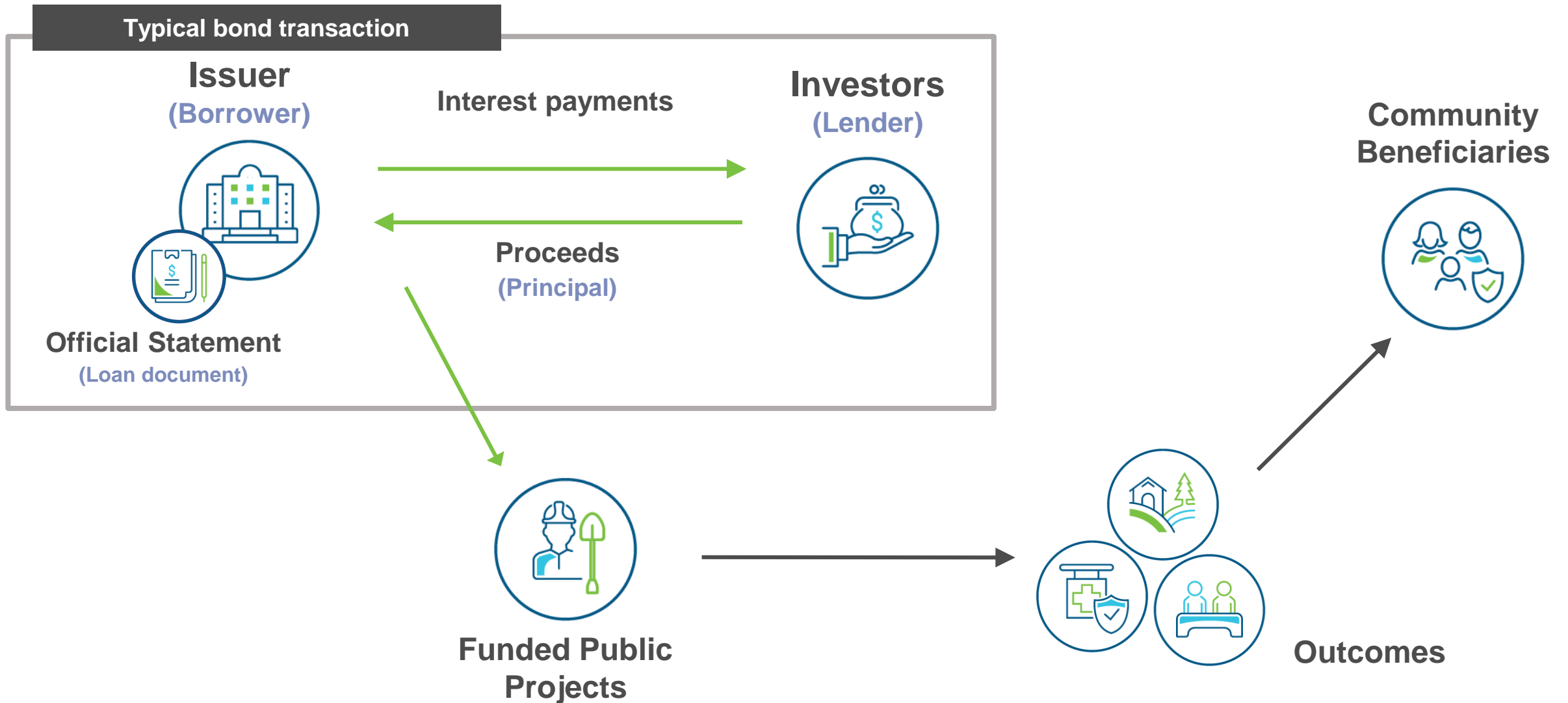
Introduction of sustainable agriculture practices that sequester carbon and reduce nitrogen, phosphorus, and sediment runoff



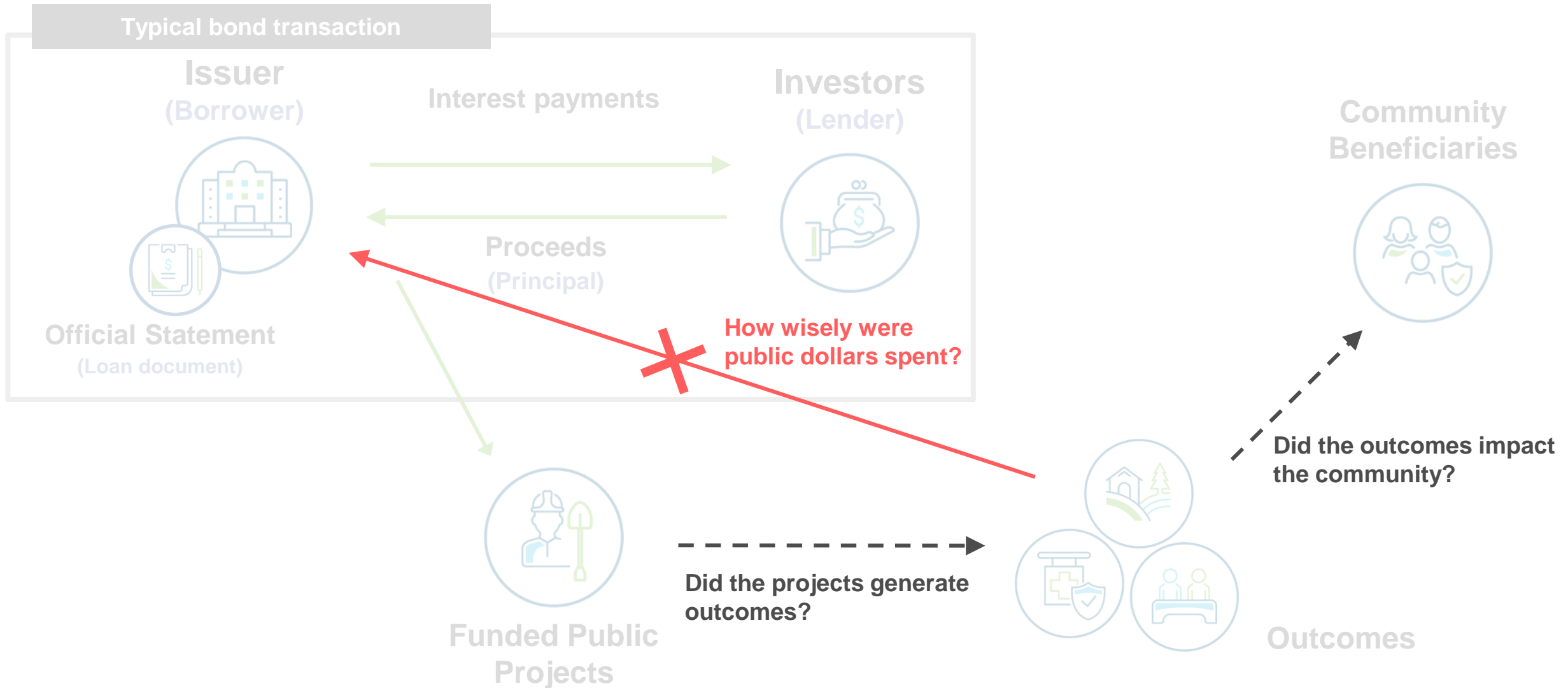
Health and Human Services

Scaling social determinant of health programs to address the health and community needs of underserved populations

Municipal bonds 101: a type of loan taken out by a municipal government to fund public projects for community benefits

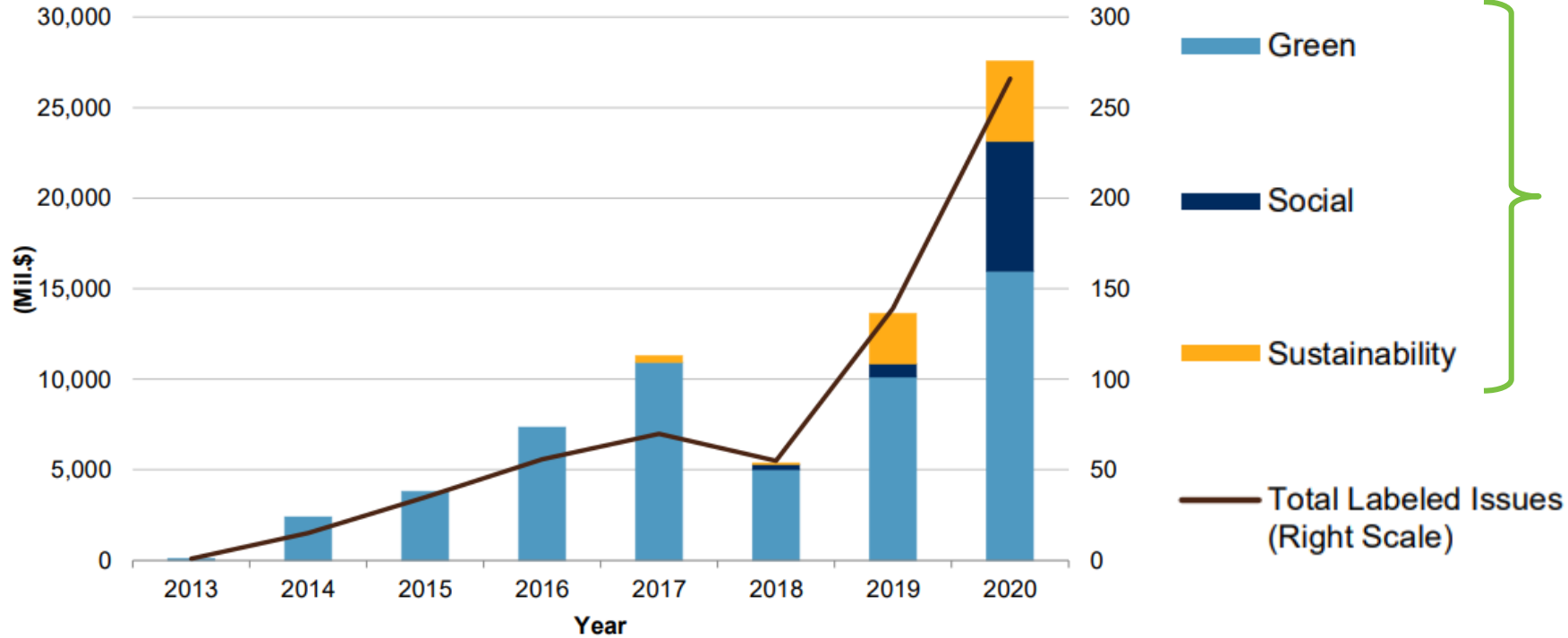


Most municipal investments lack post-implementation evaluation to know how effectively the projects served the community



Muni bond investors, too, are increasingly asking for proof that their investments generate positive community impact

U.S. Municipal Sustainable Debt By Label: Par And Issues



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Industry-standard labels defined by the Int'l 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.

An Environmental Impact Bond does three things:

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

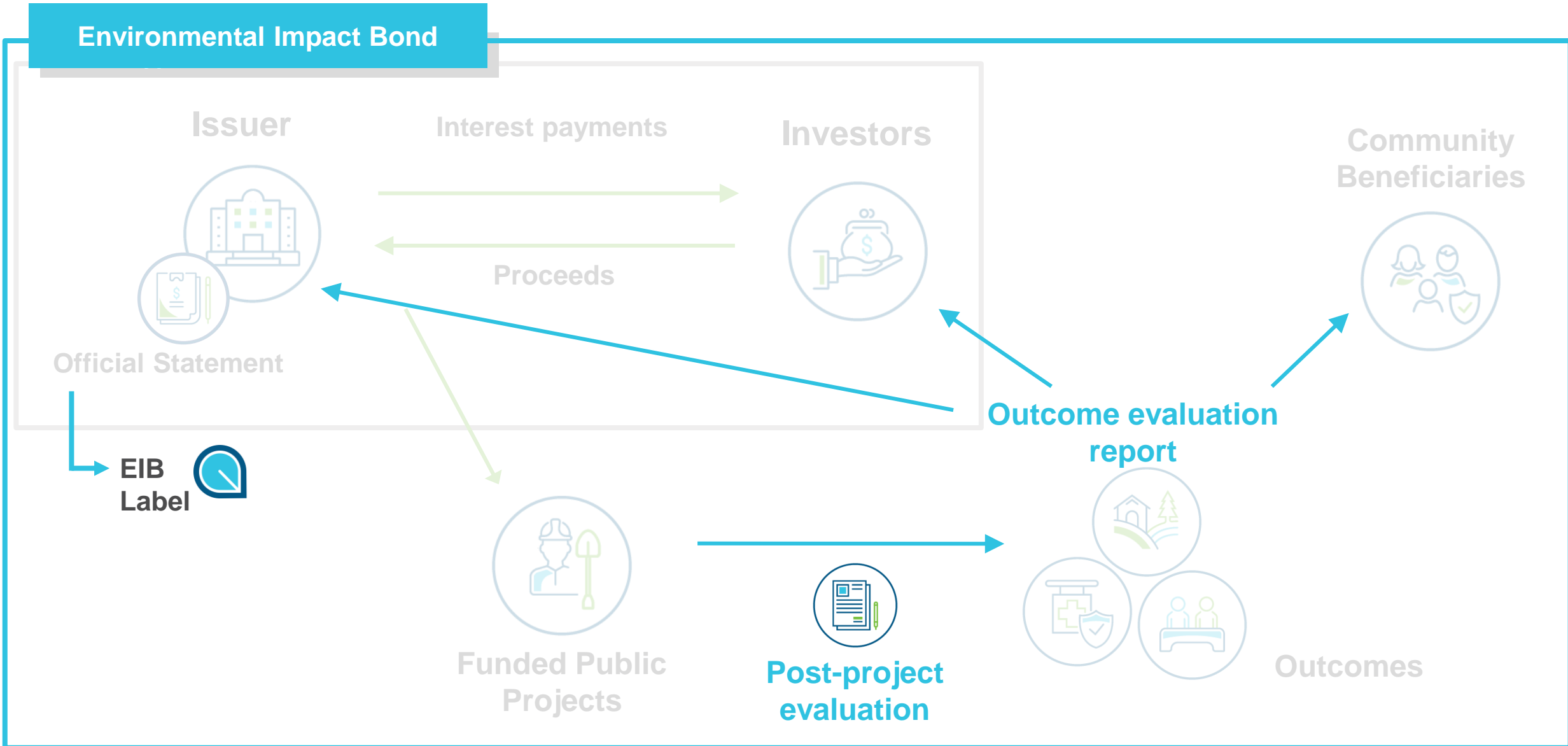
2 **Post-implementation evaluation of actual project outcomes**

- Simple low-cost protocols, ideally using existing issuer expertise and capacity

3 **Disclosure of actual outcomes to investors and stakeholders (e.g., the public)**

- Some EIBs may have some terms of the investment change with outcomes

An EIB provides transparency for the community, credibility for investors, and performance data for issuers



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

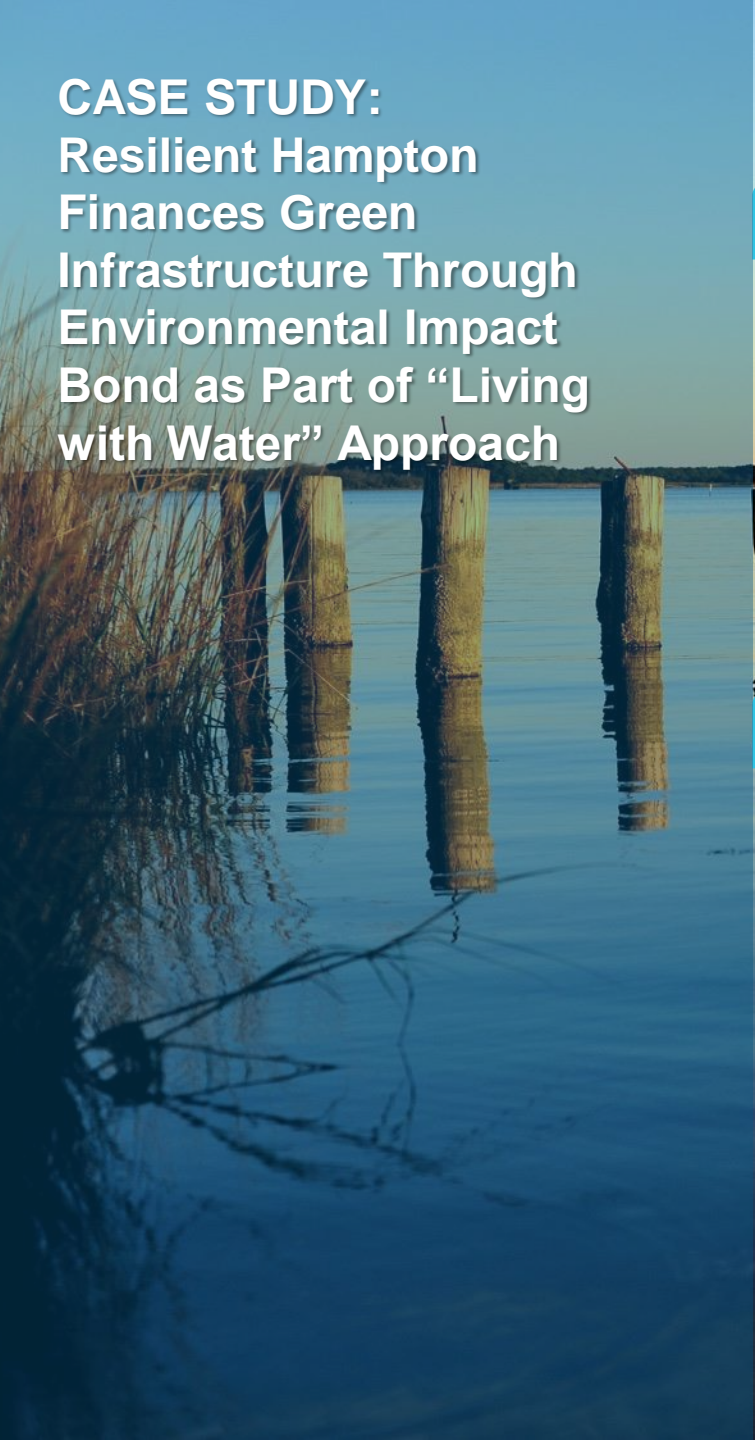
- Local, national, and industry news coverage
- Leadership among peer municipalities
- Trust built with taxpayers

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



**CASE STUDY:
Resilient Hampton
Finances Green
Infrastructure Through
Environmental Impact
Bond as Part of “Living
with Water” Approach**

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 work¹¹



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

Environmental Impact Bond Structures Are Highly Customizable Based on Local Context, Priorities, and Needs

	WASHINGTON, DC	ATLANTA, GA	HAMPTON, VA	BUFFALO, NY
Primary Value Proposition of EIB	What is the cost-effectiveness of green vs. grey infrastructure for CSO reduction?	How can green infrastructure improve local flooding, water quality, and economic conditions?	How can outcomes disclosure and reporting signal climate preparedness to investors?	Can an outcomes-based positive incentive help Buffalo over-achieve on its CSO goals?
Size	\$25 million	\$14 million	\$12 million	\$54 million
Term	30 years (5 year mandatory tender)	10 years	20 years	30 years
Placement	Private	Limited Public	Public	Public
Outcome Metric	Volume capture (<i>flow / runoff</i>)	Volume capture (<i>capacity / storage</i>)	Volume capture (<i>capacity / storage</i>)	Impervious surface area managed
Regulatory Driver?	Yes	No	No	Yes
Outcomes-Based Financing Structure	<ul style="list-style-type: none"> 3-tiered performance payment structure (Low, Base, High) 	<ul style="list-style-type: none"> 2-tiered performance payment structure (Base, High) 	<ul style="list-style-type: none"> Outcomes evaluation, reporting, and disclosure only 	<ul style="list-style-type: none"> Outcomes-based early call option, coinciding with step-up in coupon rate

Please reach out for more information



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