Mayor Keisha Lance Bottoms

City of Atlanta's Environmental Impact Bond for Green Infrastructure

Amanda Medori Hallauer, Department of Watershed Management

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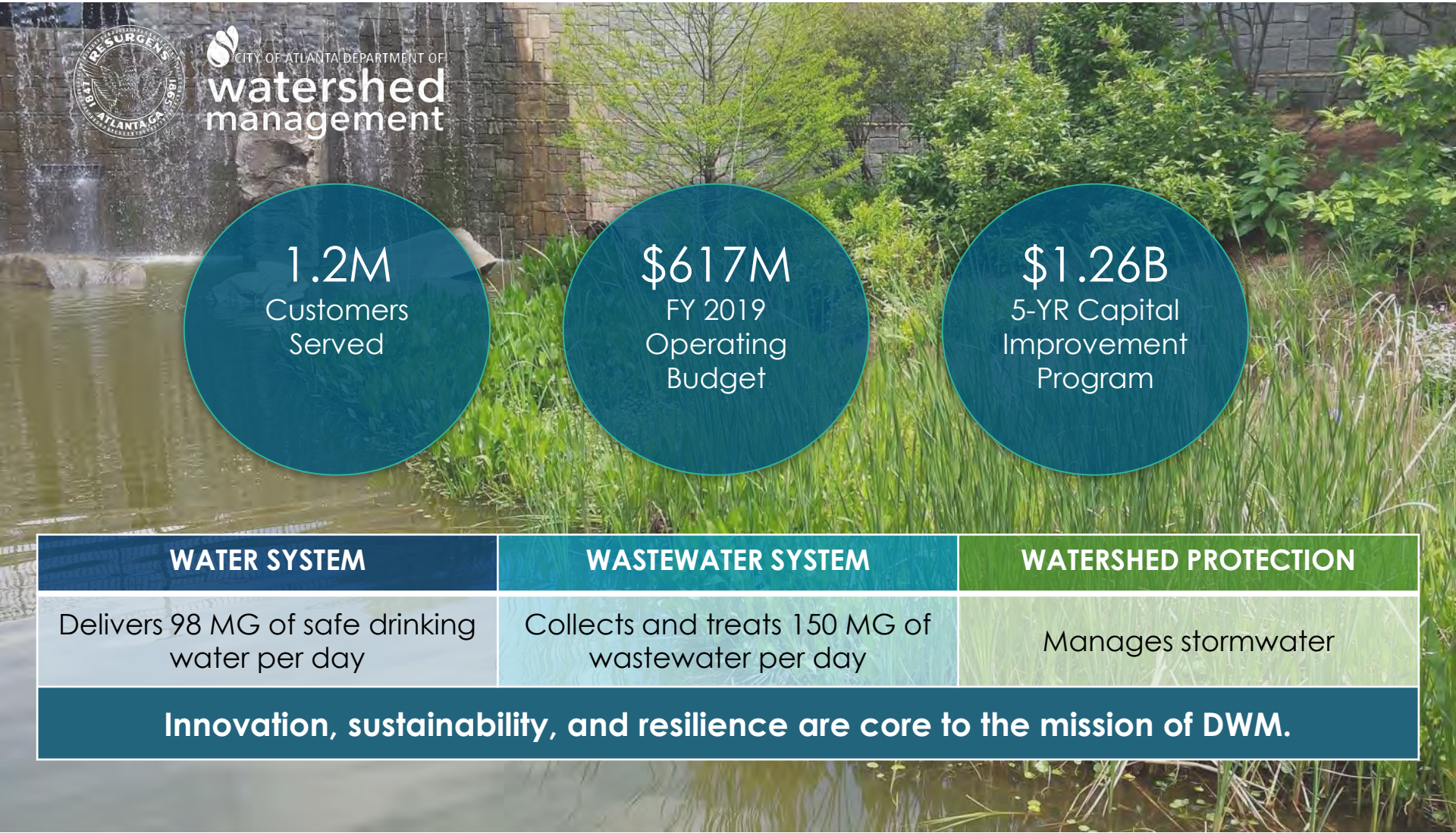


WATER SYSTEM	WASTEWATER SYSTEM	WATERSHED PROTECTION
Delivers 98 MG of safe drinking water per day	Collects and treats 150 MG of wastewater per day	Manages stormwater

Innovation, sustainability, and resilience are core to the mission of DWM.

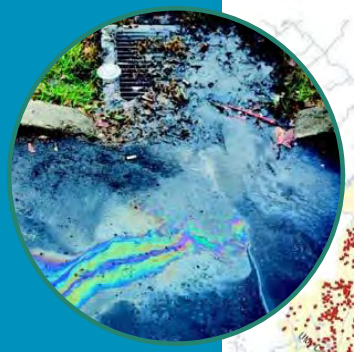
Stormwater Management is one of the challenges to our city's resilience

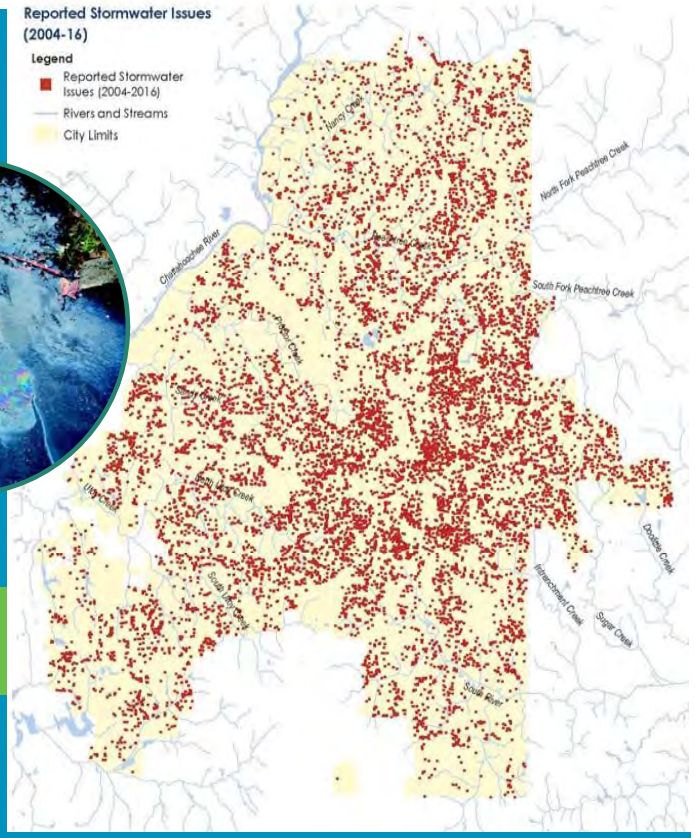
Urbanization and climate change compound the impacts of stormwater runoff

Damaged Infrastructure

Street Flooding

Water Quality Issues





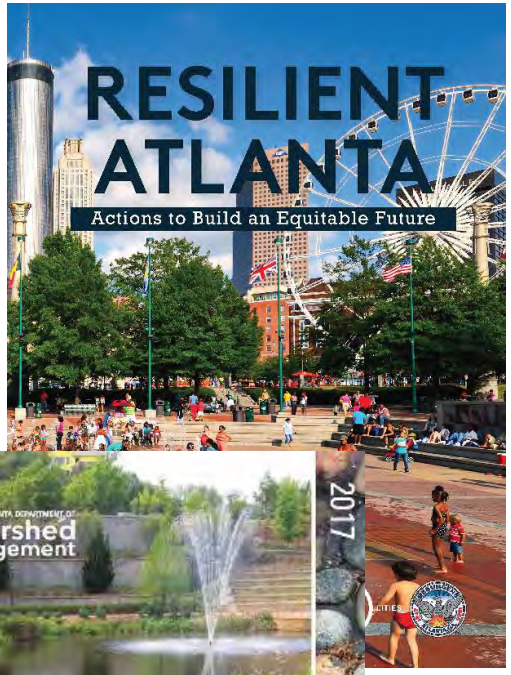
DWM receives about 1,300 complaints about stormwater issues every year.

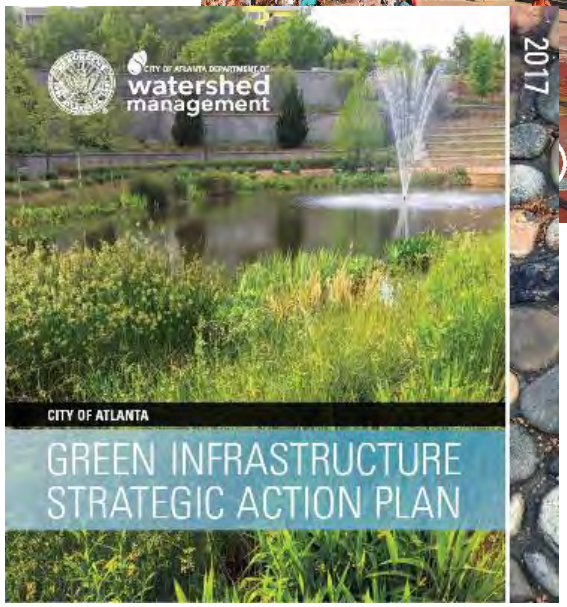
Issues are city-wide.

Stormwater runoff degrades waterways, affects public health, and causes private property damage, threatening the City's resilience.

Resilience & Green Infrastructure

- Resilient Atlanta Plan establishes the need for comprehensive stormwater management
- Green Infrastructure (GI) is a stormwater management approach that reduces runoff by replicating or restoring natural systems, with the added advantage of multiple co-benefits





Environmental

- Water quality
- Air quality
- Wildlife habitat
- Floodplain restoration
- Climate mitigation

Social

- Equity & workforce
- Flood reduction
- Public health
- Education
- Access to green space

Economic

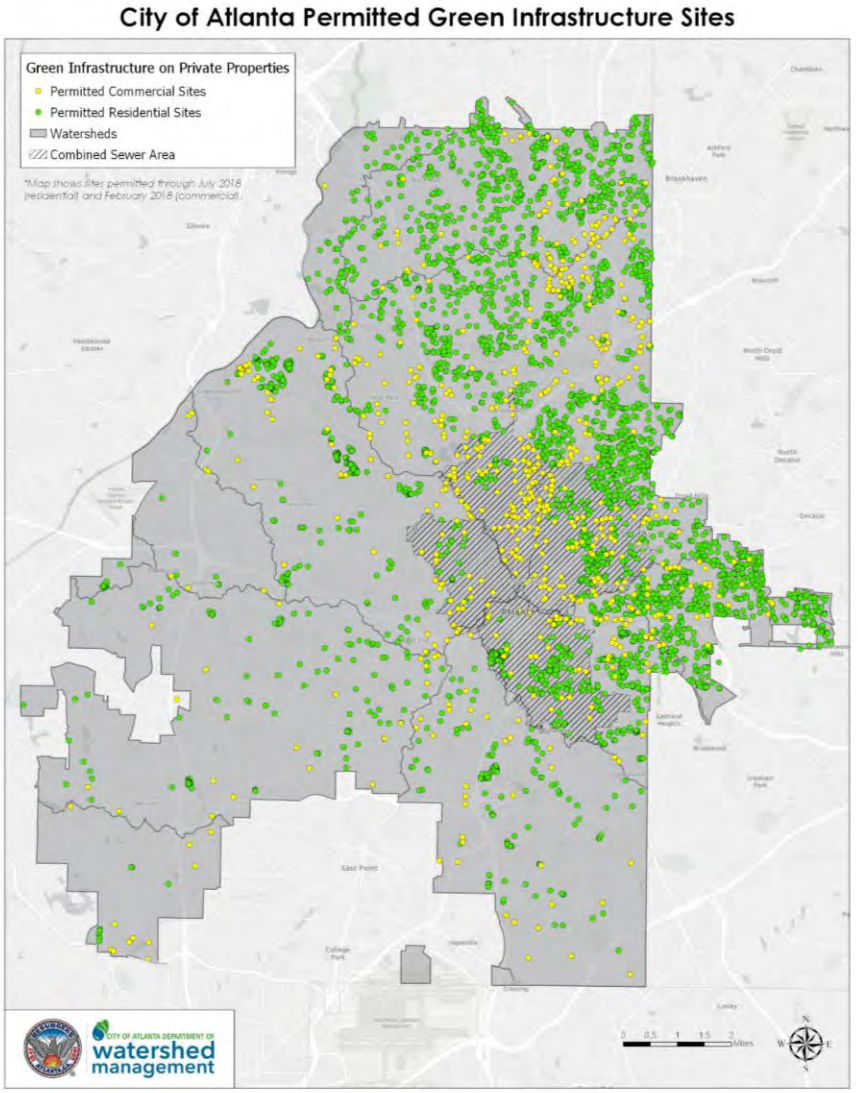
- Job creation
- Increased property values
- Avoided flood damages
- Reduced infrastructure/ treatment costs

Implementation, Funding, & Equity

- Lack of adequate funding for Stormwater Management necessitates creative sources, partnerships, and alternate approaches
- Atlanta's amended Stormwater Ordinance added a GI requirement for new and redevelopment projects
- Development not equitably distributed through City

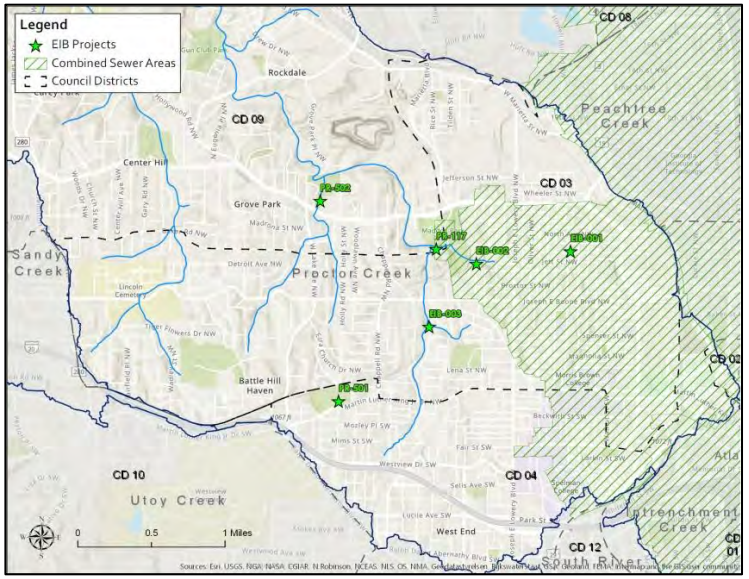
Permeable Pavers - Urban Market on Howell Mill

Bioswale - Edgewood Townhomes



Atlanta's EIB Opportunity

- Announced in March 2018: DWM awarded opportunity to pioneer first publicly offered EIBs targeting impact-investors
- Rockefeller Foundation grant funding to structure and market bonds
- $13.5M to finance 6 green infrastructure projects in the upper Proctor Creek watershed
  - Combined and separate sewer areas
  - A mix of ecosystem restoration and urban stormwater BMPs to improve the health and resilience of Westside communities
- Multiple environmental and social benefits
- Expected to provide a total of 6.4 million gallons of stormwater storage capacity, resulting in 56 MG reduction in annual stormwater runoff



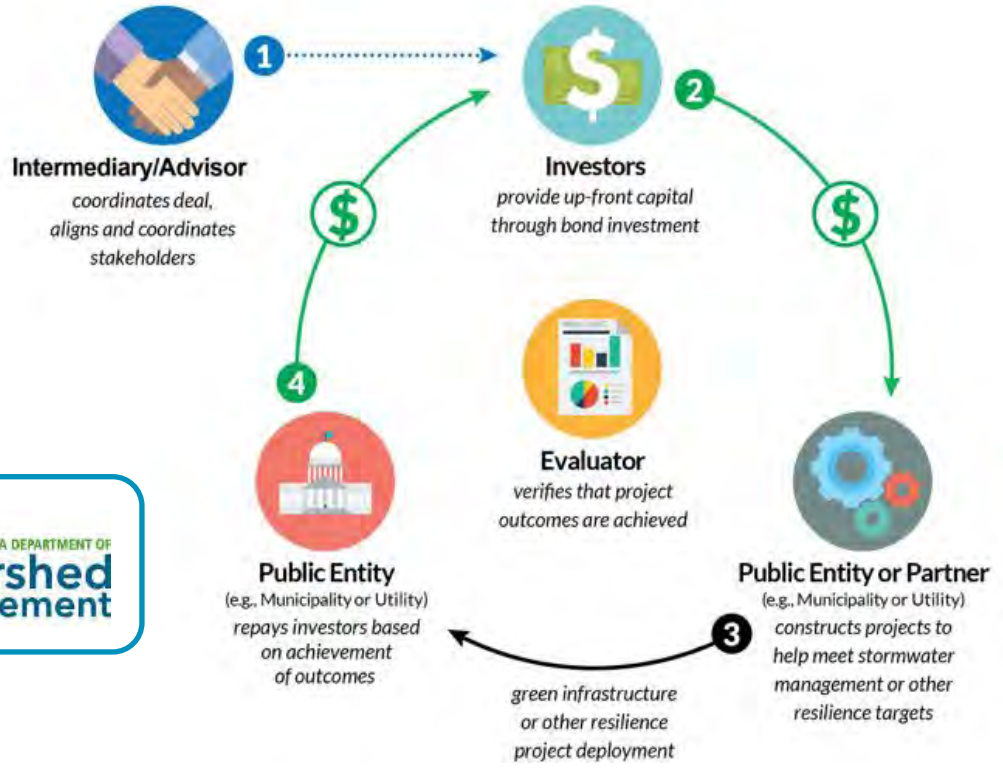
What is an EIB? – "Pay for Success"

An **Environmental Impact Bond (EIB)** is an innovative financing tool that uses a Pay for Success approach to align public spending with the outcomes issuers care about from projects, rather than for the projects alone.

Quantified Ventures

Neighborly

CITY OF ATLANTA DEPARTMENT OF watershed management



Central to any EIB is an ability to:

- Model and assign an economic value to project benefits
- Price these benefits into the performance-based financial structure
- Evaluate actual project outcomes post-construction

Why Use an EIB?

Compared to more traditional financing approaches, EIBs offer the ability to:

- Capture the degree of **uncertainty** around **environmental performance** of projects
- **Define** and **monetize** the value of positive environmental and social outcomes

Advantages – This allows the issuer to:

- Access a new source of investment capital
- Prioritize impactful projects
- Test innovation and/or scale up
- Manage risk
- Share the value of project benefits with investors = alignment of incentives
- Make public spending more efficient
- Learn how projects actually perform to inform future planning and funding

This approach leverages environmental and economic data and monitoring to support investment in resilient infrastructure

Proctor Creek

- Atlanta's Proctor Creek Watershed one of 19 designated Urban Waters in the US, EPD impaired list
- Tributary of Chattahoochee River, running through the Westside
- Downstream of City center
- High poverty, vacancy, and crime rates
- Flooding, water quality issues, brownfields
- Historic and cultural significance – Civil Rights era
- Over $100M investment needed to restore watershed and improve water quality
- DWM identified at least 27 GI and Stream Restoration project opportunities

EIB Projects & Goals

- Types of Projects:
  - Bioretention along streetscapes and in City parks
  - Stream and floodplain restoration
  - Constructed wetlands
- Primary Driver: to address local **flooding** and **water quality** issues by reducing impact of stormwater runoff on combined sewer systems and waterways
- Multiple additional benefits:
  - Create new greenspace
  - Restore and improve native habitat for wildlife and pollinators
  - Provide public environmental education
  - Improve public health
  - Local workforce development

Outcome Metric and Evaluation

How did we link EIB bond repayment to project performance?

The calculated **volume** of capacity for capture or detention of stormwater by the green infrastructure is the outcome metric that will be used to determine whether the additional performance payment is made to bondholders.

Why Volume?

- A simple metric that can be applied to and aggregated across all projects (types and geography)
- Reflects both flood reduction and water quality improvement, the two major drivers of project performance
- Easy for investors to understand and related to their environmental interests

Evaluation Methodology

Hydrologic surveys, corroborated by aerial imagery, completed by a third-party validator

Calculating Performance Terms

Economic Valuation of Project Outcomes*

Benefit	Value
Flood Risk Reduction	$2,400,000+
Water Quality Improvement	$13,200,000+
Job Creation	$3,100,000+
Air Quality Improvement/Heat Island Reduction	$200,000+
Total	$19,000,000+

*calculated based on as-designed volume

Probability Analysis of Volume Outcome

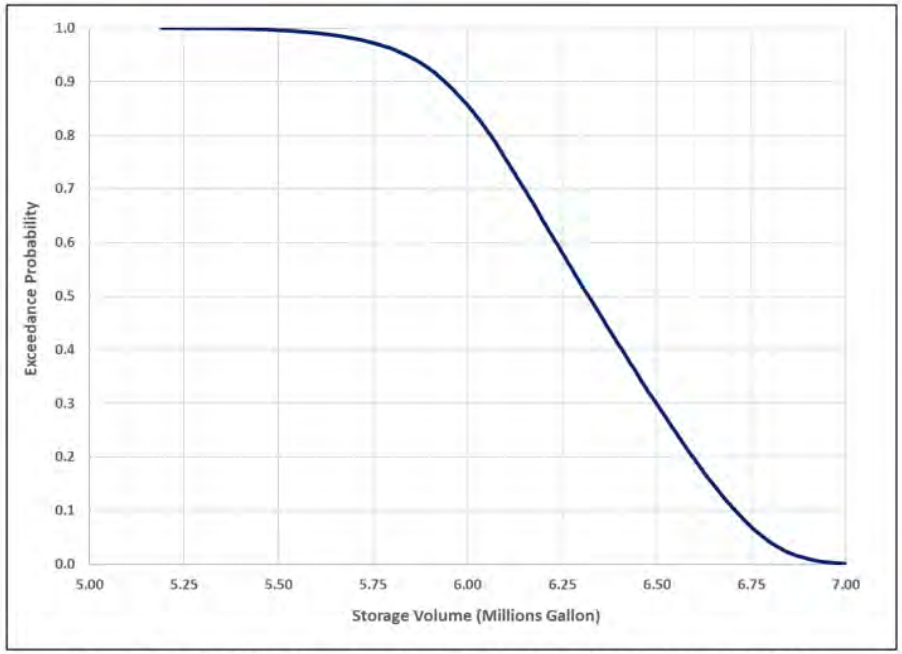
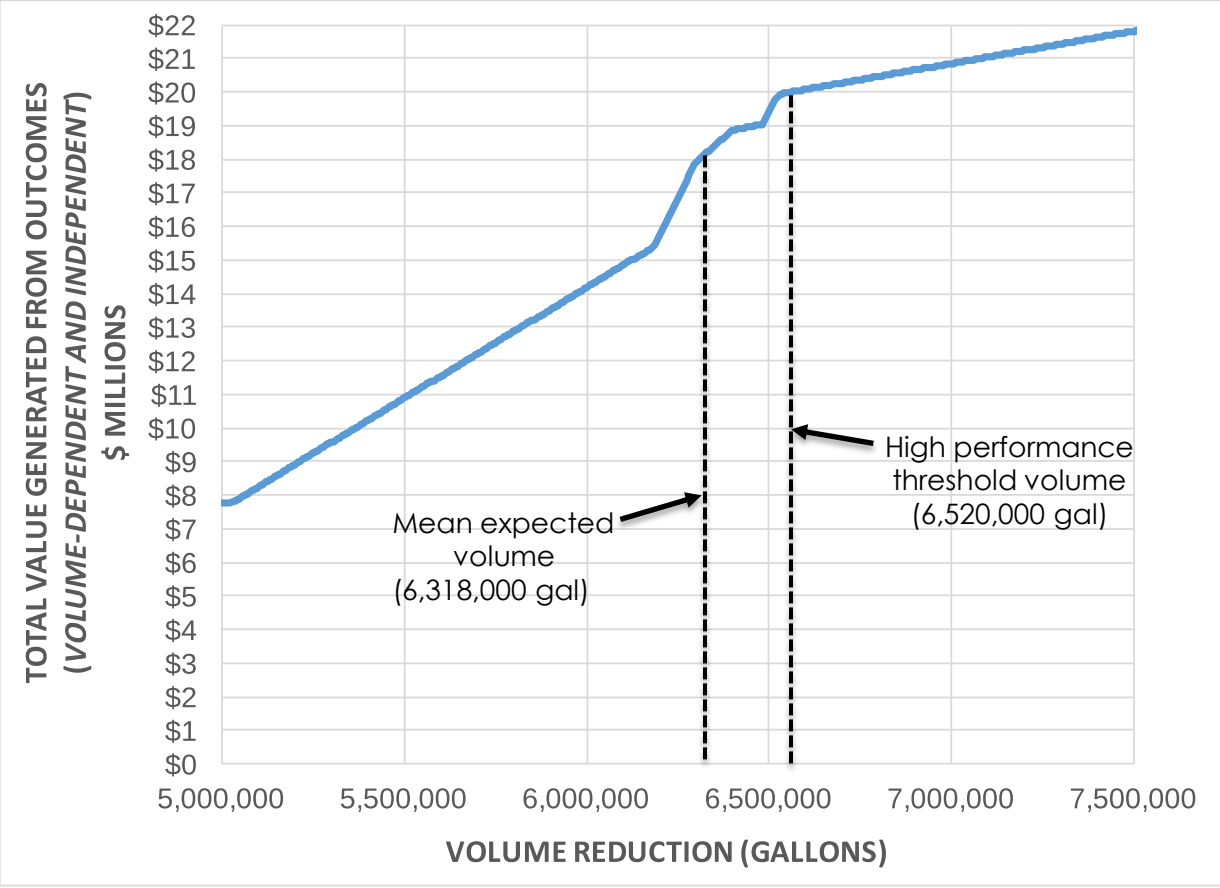


Figure 3. Probability Curve based on the Monte Carlo Simulation Method

Calculating Performance Terms

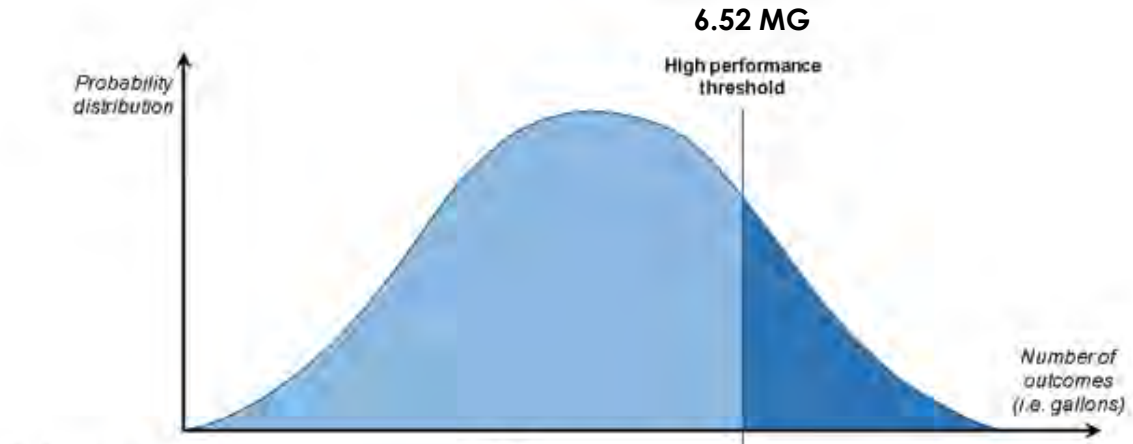


The estimated economic value of project outcomes depends on the ability of the green infrastructure to capture stormwater.

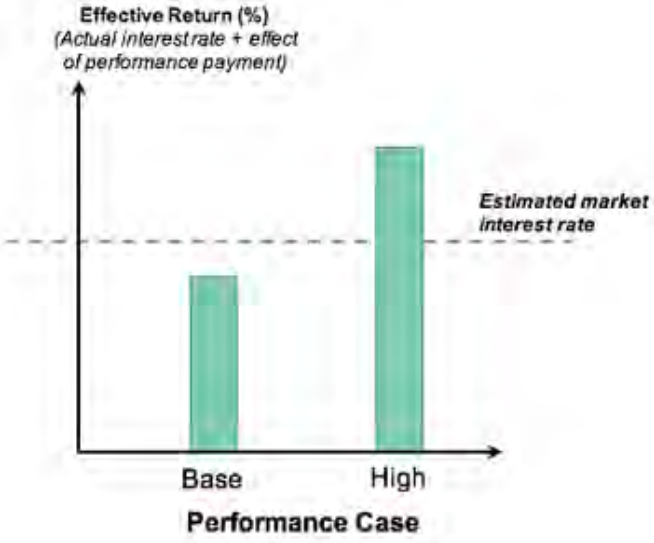
At the base case, expected level of performance, the $13.5M set of projects is **estimated to generate $18M** in environmental and social outcomes. If greater performance of stormwater volume capture is achieved, **there is expected to be additional economic value of at least $1.8M**, well over the additional $1 million payment.

Transaction Structure

TWO-TIERED PERFORMANCE STRUCTURE

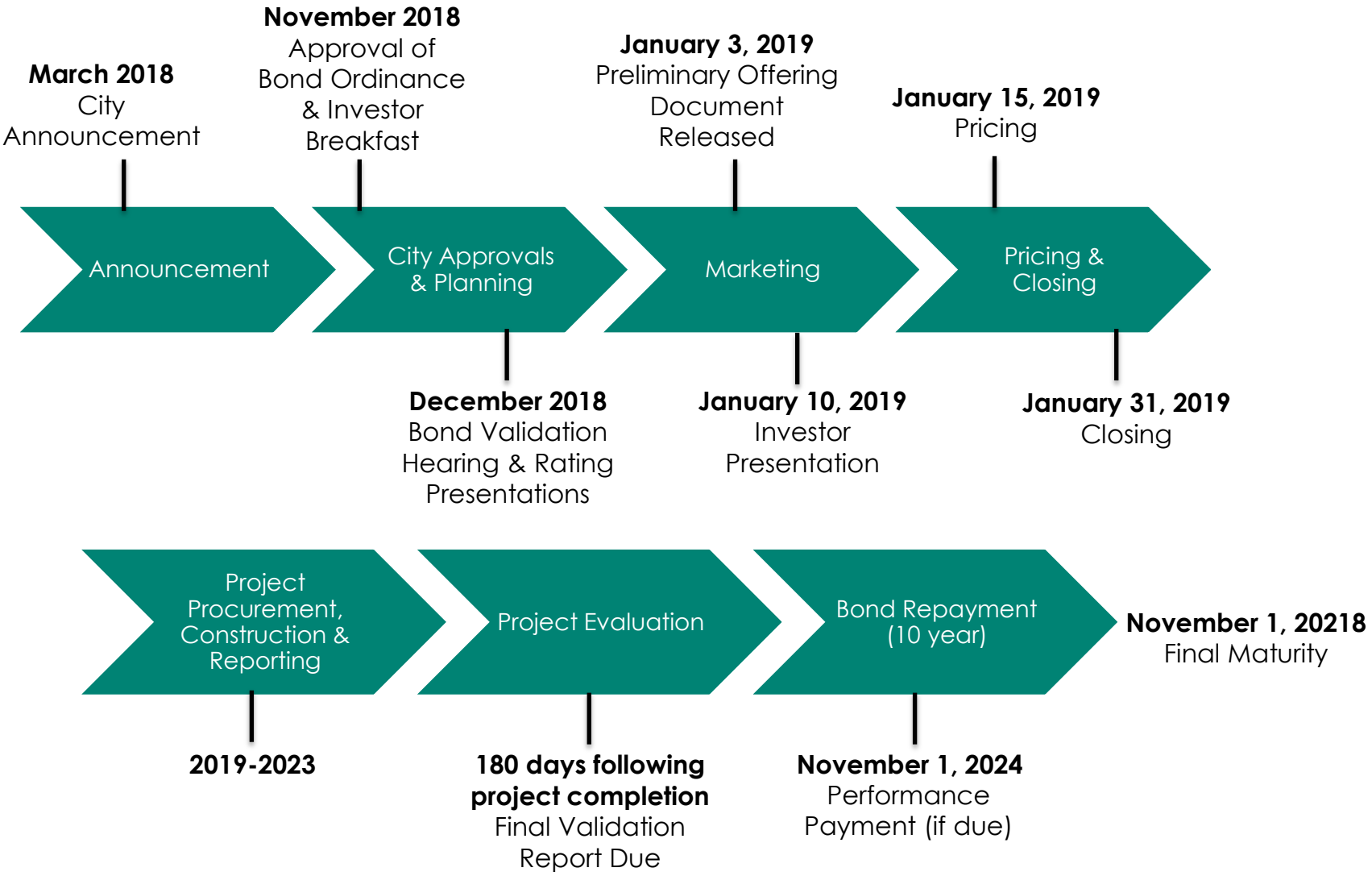


Performance:	Base	High
Fixed (Actual) Interest Rate:	Below market rate *(estimated)*	Below market rate *(estimated)*
Additional Payment:	None	Issuer to Investors



- Below market interest rate and risk transfer in base case
- If projects exceed performance threshold, investors receive a supplemental performance payment as a share of the economic benefits ($1 million pro rata)

Timeline


March 2018
City Announcement
November 2018
Approval of Bond Ordinance & Investor Breakfast
January 3, 2019
Preliminary Offering Document Released
January 15, 2019
Pricing
Announcement
City Approvals & Planning
Marketing
Pricing & Closing
December 2018
Bond Validation Hearing & Rating Presentations
January 10, 2019
Investor Presentation
January 31, 2019
Closing
Project Procurement, Construction & Reporting
Project Evaluation
Bond Repayment (10 year)
November 1, 20218
Final Maturity
2019-2023
180 days following project completion
Final Validation Report Due
November 1, 2024
Performance Payment (if due)

Takeaways

- EIBs are marketable offerings in the public sector.
- Volume is a viable metric across different types of GI.
- A two-tiered performance structure is replicable.
- Importance of consistent measurement methodology
- Timing is key for both structuring and marketing the deal.
- Relatively high transaction costs as a "pilot"
- Tying project design to financing terms involves coordination across departments with multiple partners.