

The background image shows a scenic view of the Harlem River. A large, arched steel bridge spans the river. In the distance, a tall, brick tower with a green roof stands on a hill. The river is calm, and a small boat is visible in the water. The sky is blue with some clouds. Green leaves are visible in the top left corner.

Harlem River Watershed and Natural Resources Management Plan for the Bronx

BCEQ Learn Up – November 14, 2018

NYC Parks Forestry, Horticulture, and Natural
Resources

Funded by the NYS Department of State

A large, white, stylized leaf logo is positioned on the left side of the image, partially overlapping the river and the bridge.

Parks

Outline

- Harlem River Watershed Plan – overview of development process & plan structure
- Examples of general and site specific recommendations
- Sneak peek – GI concepts!
- Next steps

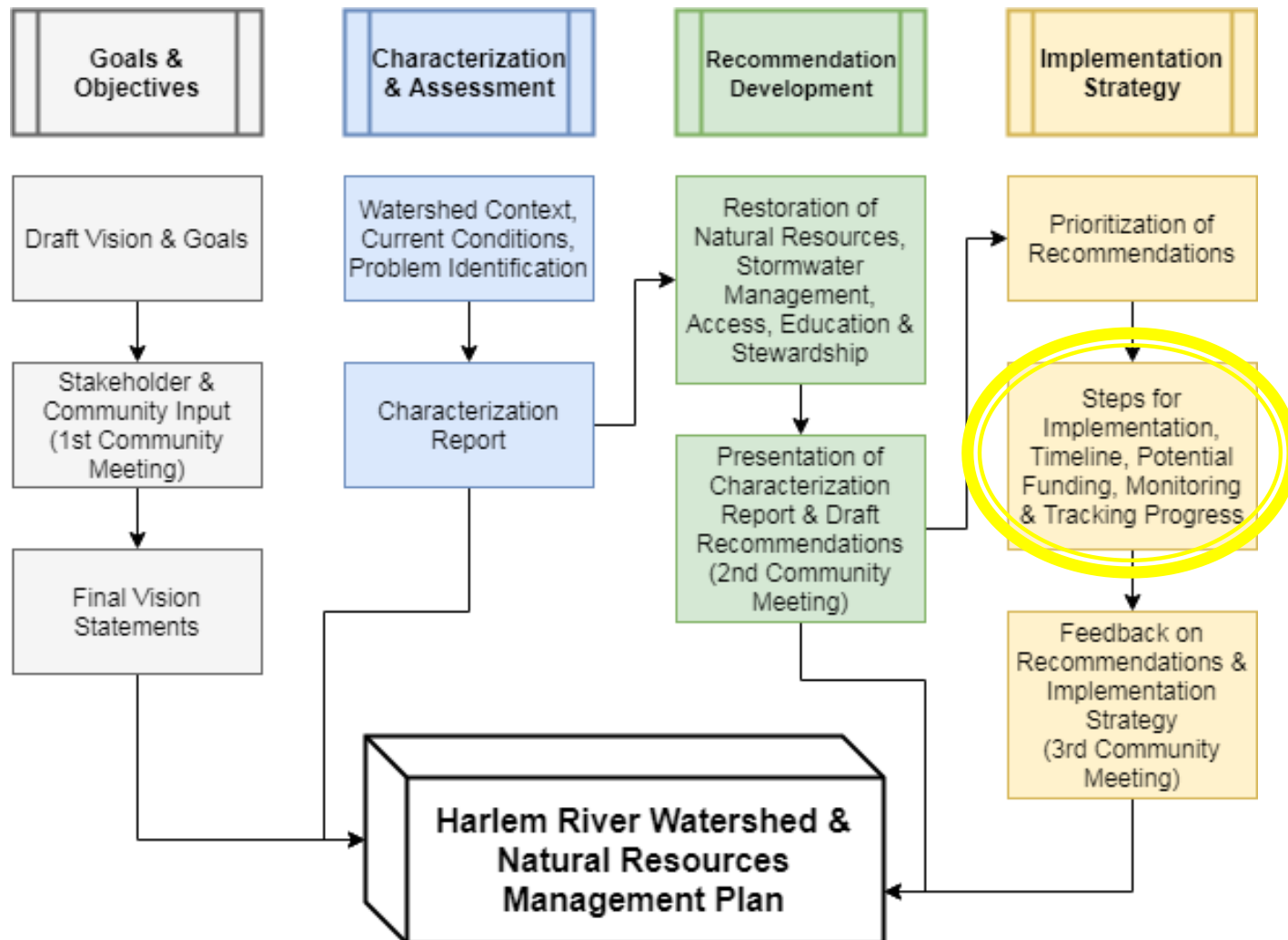


Plan Overview and Objectives

- Recommend actions and projects to guide protection & restoration of resources within the Harlem River Watershed in the Bronx
- Identify priorities as a focus for future funding
- Generate typical design concepts for key projects
- Build on priorities identified through other community-based planning efforts (e.g., BOA & Harlem River Greenway Plan)
- Get community input and reflect community and stakeholder priorities



Watershed Plan Development



Vision

The Harlem River watershed is a **critical ecological & social resource** where clean water, healthy habitats, public well-being, & **access to these benefits** are valued and protected. It is a place where environmentally sound practices, policies, **education & stewardship** help maintain diverse native habitat & improve water quality, as well as public health, recreation, & a high quality of life available to local & adjacent communities.

Goals

- **Protect, restore, & enhance natural resources**
- **Manage stormwater**
- **Promote access & connectivity**
- **Maximize public engagement & education**



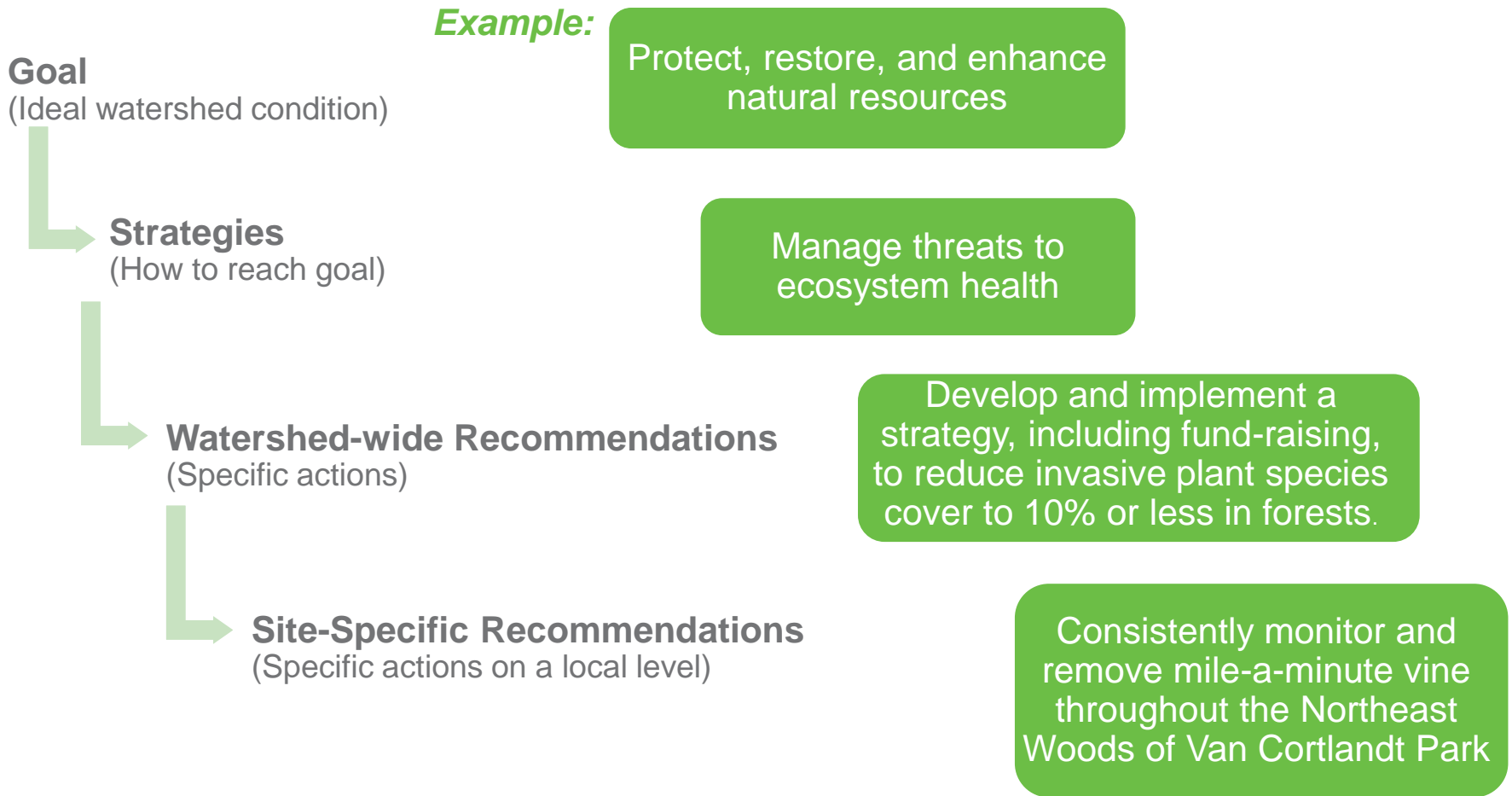
Watershed Advisory Committee

- Bronx Community Boards
- Bronx Council for Environmental Quality
- Friends of Van Cortlandt Park
- The Gaia Institute
- New York-New Jersey Harbor Estuary Program
- NYC Soil and Water Conservation District
- Riverkeeper
- South Bronx Unite
- Randall's Island Park Alliance
- NYC Department of City Planning
- NYC Department of Environmental Protection
- NYC Department of Transportation
- NYS Department of State
- NYS Department of Transportation
- US Army Corps of Engineers
- US Environmental Protection Agency
- US Geological Survey
- US Forest Service

Development of Strategies and Recommendations



Development of Strategies and Recommendations



Watershed Goals

Protect, restore, & enhance natural resources



Promote access & connectivity



Manage stormwater



Maximize public engagement & education



Draft Strategies

	Natural Resources	Stormwater Management	Access & Connectivity	Engage & Educate
Strategy 1: Expand ecological connectivity				
Strategy 2: Manage threats to ecosystem health				
Strategy 3: Restore and enhance ecosystem health				
Strategy 4: Monitor ecosystem benefits of natural resources and street trees				
Strategy 5: Work across political boundaries to manage shared natural resources				
Strategy 6: Improve interagency management of stormwater and BMPs				
Strategy 7: Expand green infrastructure practices				
Strategy 8: Invest in collaborative partnerships to improve designs and effectiveness of GI				
Strategy 9: Reduce volume of stream flow entering sewers				
Strategy 10: Improve access to the waterfront and open space				
Strategy 11: Increase connectivity along the waterfront and between open space				
Strategy 12: Foster collaborative partnerships with community, cultural, and educational organizations				
Strategy 13: Prioritize outreach to and inclusion of diverse audiences				
Strategy 14: Ensure clear agency communication on watershed policies and regulations				

Recommendations

Watershed-wide

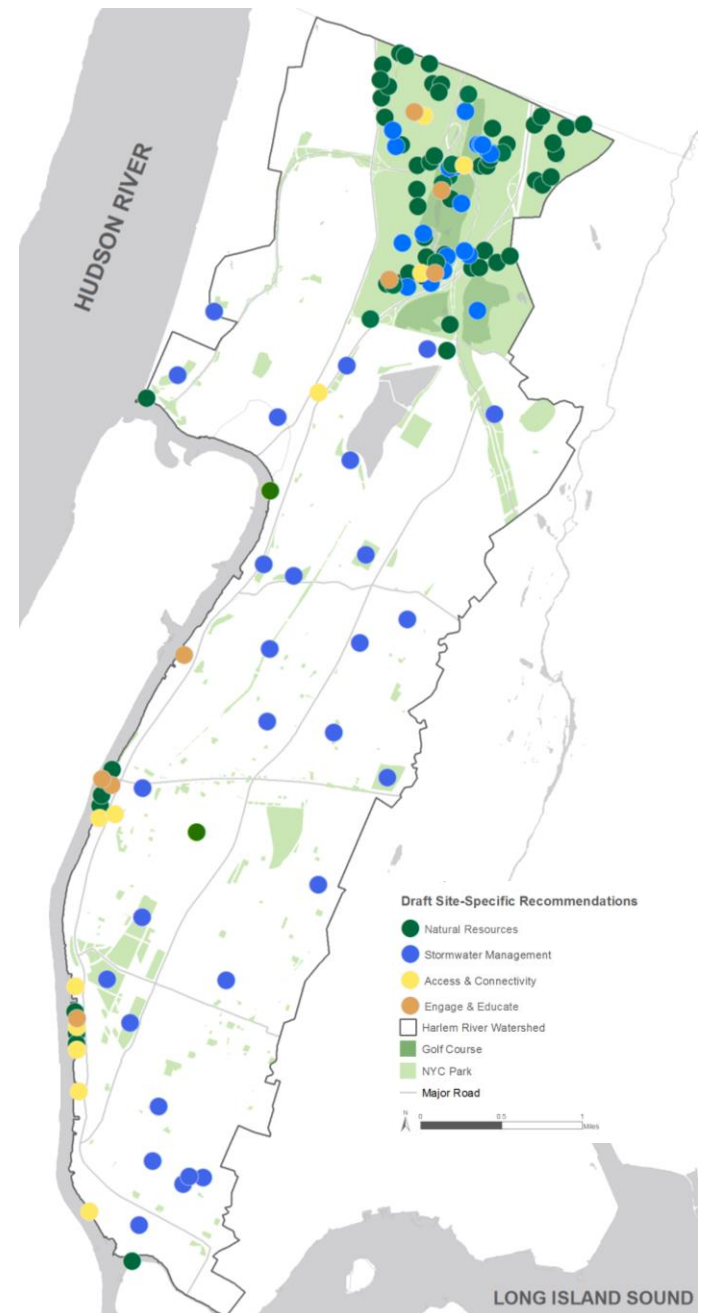
- General strategies and recommendations for how to reach ideal watershed state

Site-specific




- Local recommendations
- Mapped by the goals they address

Final plan will include:







- Prioritized site-specific recommendations
- Near & long-term actions
- Typical design concepts for GI












Examples: Watershed-Wide Strategies and Recommendations

				Primary Goal Addressed:	Additional Goals Addressed:
Natural Resources	Stormwater Management	Access & Connectivity	Engage & Educate		
Strategy 3: Restore and enhance ecosystem health					 
Recommendations		Short-term (within 5 years)	Long-term (>5 years)	Lead & Partners	
Ecologically enhance hardened shoreline where possible.		✓		NYC Parks BCEQ	

Examples: Watershed-Wide Strategies and Recommendations

Natural Resources	Stormwater Management	Access & Connectivity	Engage & Educate	Primary Goal Addressed:	Additional Goals Addressed:
Strategy 3: Restore and enhance ecosystem health					 
Recommendations	Short-term (within 5 years)	Long-term (>5 years)	Lead & Partners		
Ecologically enhance hardened shoreline where possible.	✓		NYC Parks BCEQ		
Strategy 7: Expand green infrastructure practices					 
Recommendations	Short-term (within 5 years)	Long-term (>5 years)	Lead & Partners		
Continue to map NYC Parks sewer infrastructure, existing stormwater BMPs, and identify potential GI opportunities to reduce stormwater pollution in MS4 and direct drainage areas.	✓	✓	NYC Parks		

Examples: Watershed-Wide Strategies and Recommendations

Natural Resources	Stormwater Management	Access & Connectivity	Engage & Educate	Primary Goal Addressed:	Additional Goals Addressed:
Strategy 3: Restore and enhance ecosystem health					 
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Strategy 7: Expand green infrastructure practices					 
Recommendations	Short-term (within 5 years)	Long-term (>5 years)	Lead & Partners		
Continue to map NYC Parks sewer infrastructure, existing stormwater BMPs, and identify potential GI opportunities to reduce stormwater pollution in MS4 and direct drainage areas.	✓	✓	NYC Parks		
Strategy 9: Reduce volume of stream flow entering sewers					 
Recommendations	Short-term (within 5 years)	Long-term (>5 years)	Lead & Partners		
Conduct engineering feasibility study for by-pass of base flow from Tibbetts Brook.	✓		NYC DEP		

Examples: Site-Specific Recommendations

Goals addressed:

- a) Protect, restore, and enhance natural resources
- b) Manage stormwater through green infrastructure

Bridge Park South



Design and build an ecologically sensitive shoreline

Manage highway runoff through green infrastructure

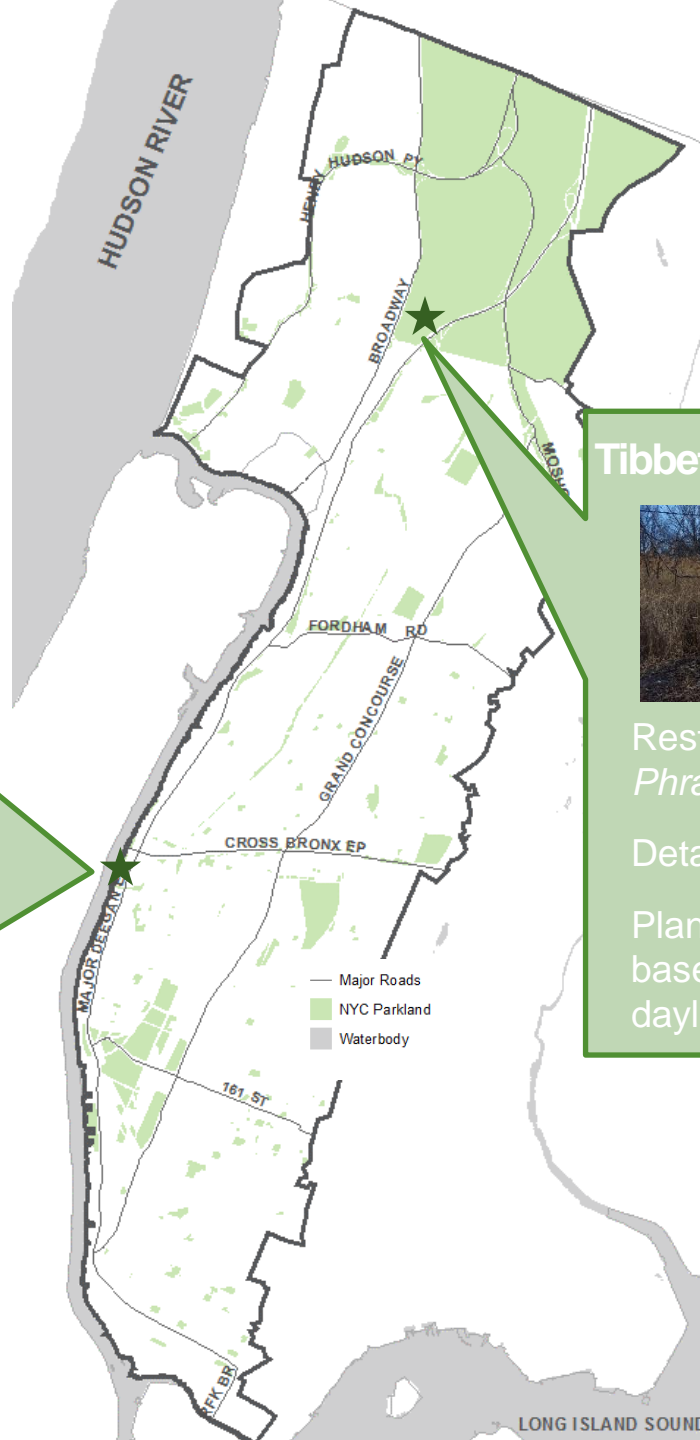
Tibbetts Brook Wetland



Restore degraded *Phragmites* wetland

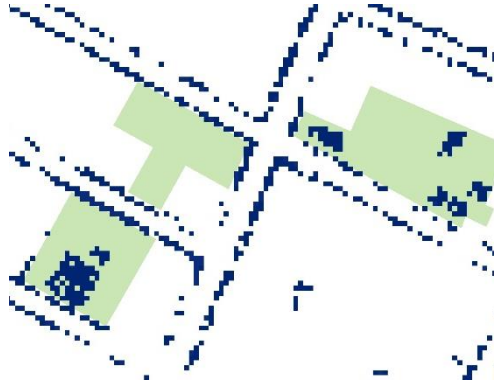
Detain stormwater

Plan future by-pass of base flow and future daylighting



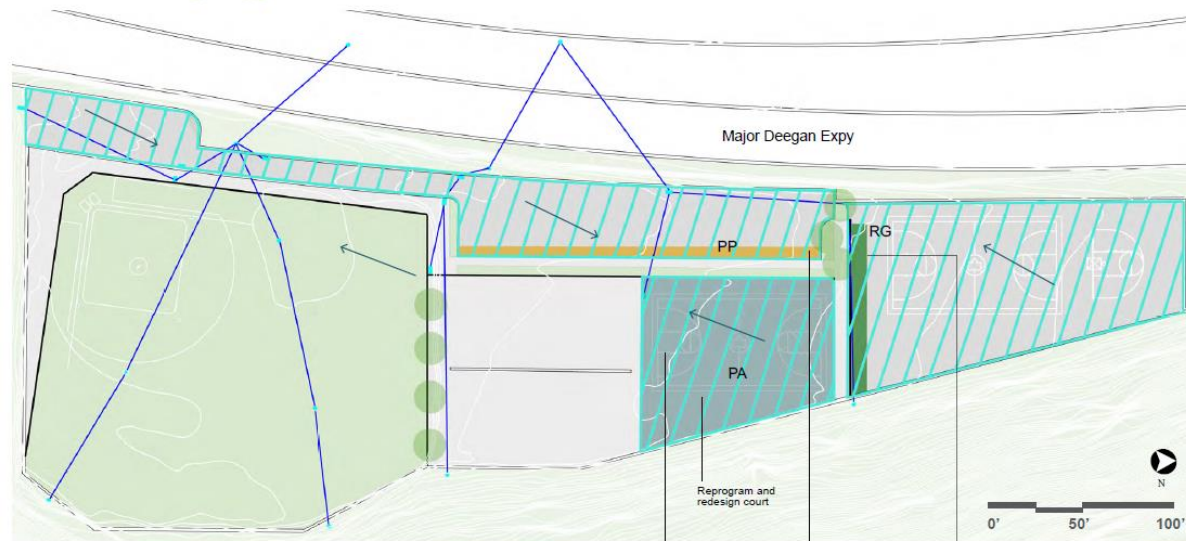
Green Infrastructure Concepts

- Designed six GI concepts of varying Park and BMP typologies to showcase opportunities for stormwater capture
- Calculated total stormwater capture potential per BMP type
- Additional designs include:
 - Van Cortlandt Park Stables
 - Van Cortlandt Park Golf House
 - Slattery Playground
 - People's Park
 - Bridge Park South



Green Infrastructure Concepts

Fordham Landing Playground Schematic

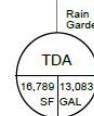
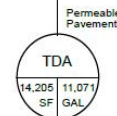
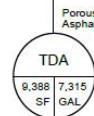


Legend

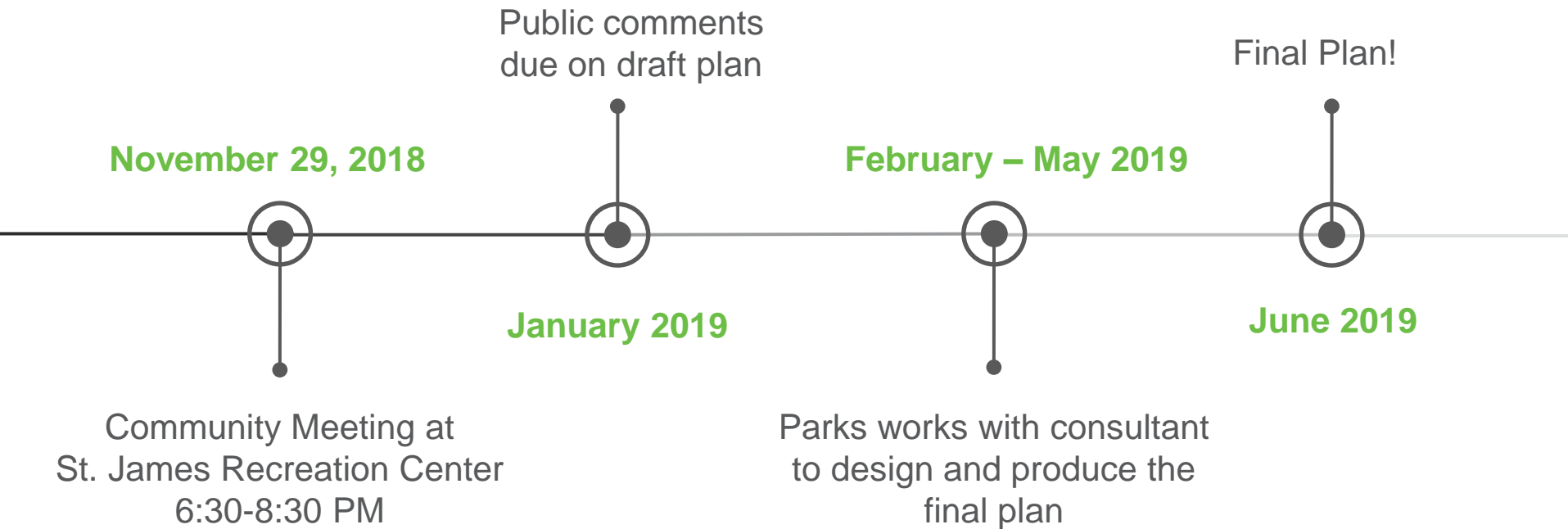
- Road/Parking Lot
- Field
- Existing Tree
- Tributary Drainage Area TDA
- Rain Garden RG
- Permeable Pavement PP
- Porous Asphalt
- Existing Catch Basin
- Contour Line
- Storm Drain Line
- Flow Direction

Stormwater Calculation Table

GI ID	GI Asset Data			Total Stormwater Managed (Infiltration + Storage)	
	Managed Impervious Tributary Area	Volume 1.25" Rainfall on Impervious Area	GI Footprint Surface Area	Calculated Volume of 1.25" Rainfall Captured	% Impervious Surface Managed
	sf	cf	sf	cf	%
Rain Garden	16,789	1,749	842	1,748	100%
Porous Asphalt	9,388	978	9,388	18,771	1,920%
Permeable Pavement	14,209	1,480	1,225	2,521	170%
TOTALS	40,386	4,207	11,455	683	548%



Next Steps



Thank you!

Katie Friedman

Aquatic Ecologist

Katie.Friedman@parks.nyc.gov

212-360-1429

Sara Powell

Urban Waters Ambassador

Sara.Powell@parks.nyc.gov

212-360-1480

www.nycgovparks.org/planning-and-building/planning/conceptual-plans/harlem-river-watershed



NYC Parks

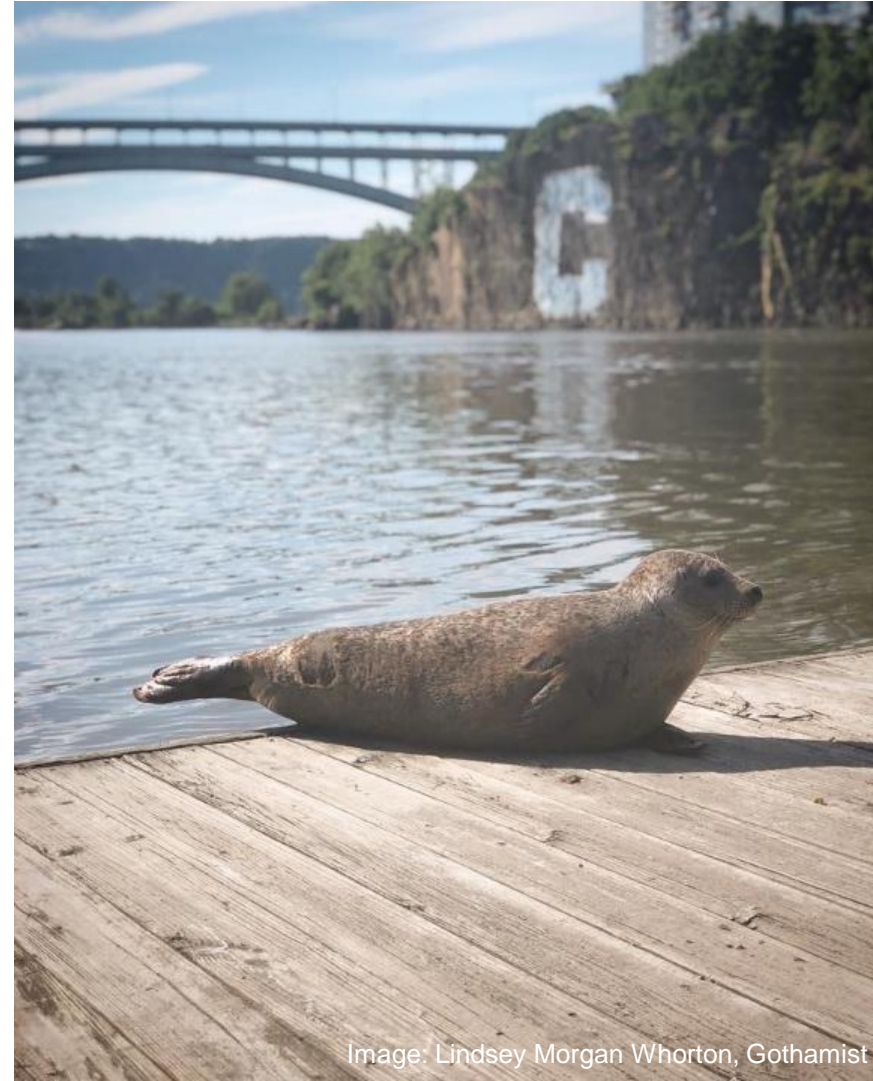


Image: Lindsey Morgan Whorton, Gothamist