



# Citywide/Open Waters CSO Long Term Control Plan

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Public Meeting  
Harlem River/Tibbetts Brook

October 2, 2019

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	<b>Topic</b>	<b>Speaker</b>
1	<b>Welcome &amp; Introduction</b>	Mikelle Adgate
2	<b>Summary of Water Quality &amp; Existing Grey Projects</b>	Keith Mahoney
3	<b>Overview of Demand Management and Tibbetts Brook Daylighting Projects</b>	Pinar Balci
4	<b>Next Steps</b>	Mikelle Adgate

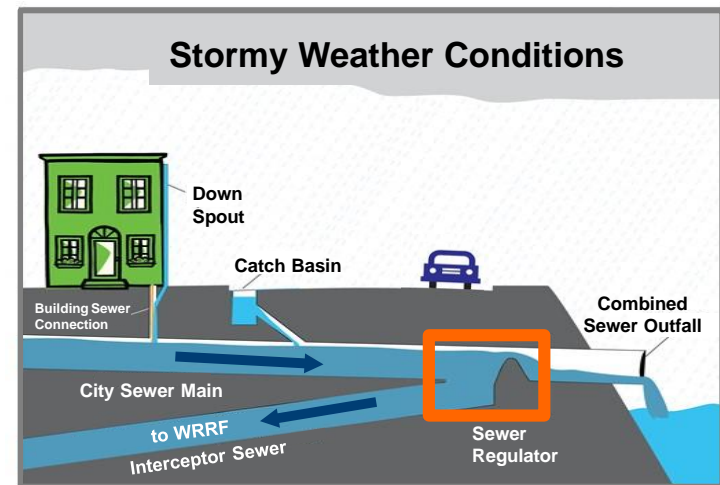
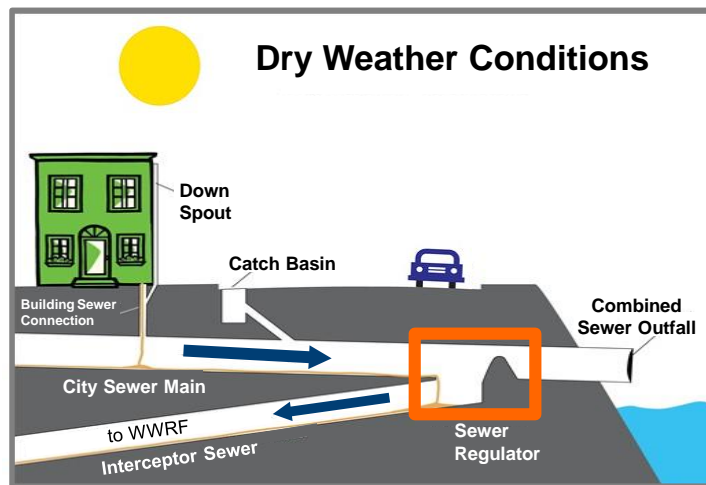
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# Welcome & Introduction

Mikelle Adgate  
Senior Policy Advisor  
DEP

# What is a Combined Sewer Overflow (CSO)?

- NYC's sewer system is approximately 60% combined, which means it is used to **convey both sanitary and storm flows**.



- 65% to 90% of **combined** sanitary & storm flow is captured at wastewater resource recovery facilities (WRRF).
- When the sewer system is at full capacity, a diluted mixture of rain water and sewage may be released into local waterways. This is called a combined sewer overflow (CSO).

## **Long Term Control Plan (LTCP)**

**identifies appropriate CSO controls to achieve applicable water quality standards consistent with the Federal CSO Policy and Clean Water Act**

## **CSO Consent Order**

**an agreement between NYC and DEC that settles past legal disputes without prolonged litigation**

**DEC requires DEP to develop LTCPs and mitigate CSOs**

- Waterbody-specific CSO evaluation of Open Waters:

■ Harlem River

■ Upper and Lower New York Bay

■ East River/Long Island Sound

■ Hudson River

■ Arthur Kill and Kill Van Kull

- Citywide/Open Waters LTCP will be submitted to DEC in **March 2020**

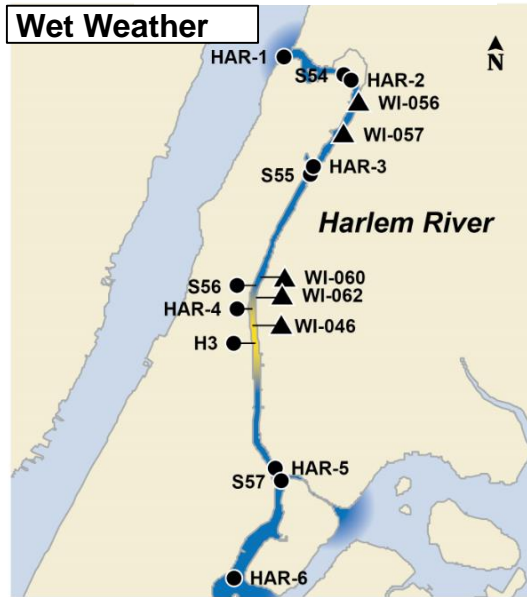
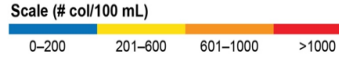


# Summary of Water Quality & Existing Grey Projects

Keith Mahoney, PE  
Senior Director  
DEP

# Harlem River – Fecal Coliform

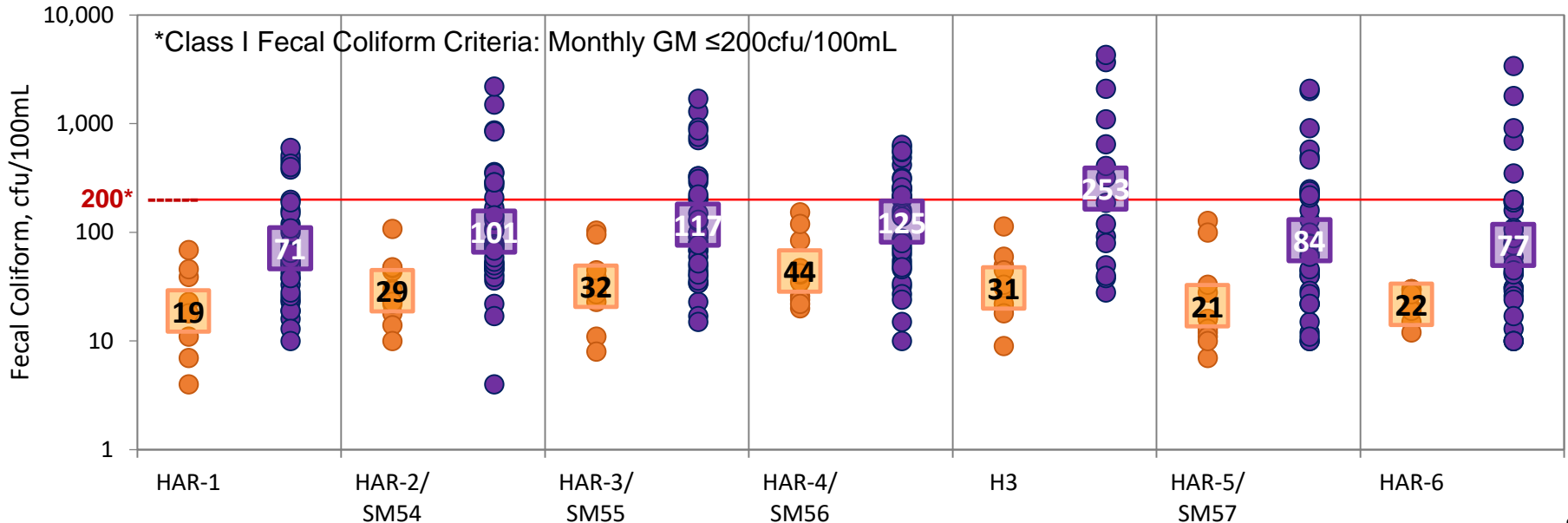
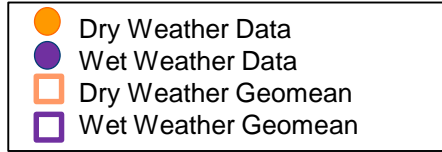
## Sampling Results at a Glance



## Sampling Details

	Sampling Period (2016)	# Locations	# Samples	
			Dry	Wet
LTCP	Apr 27 – Jun 9 Nov 16 – Nov 19	6	8	38
HSM	Jan 4 – Nov 9	1	12	15
SM	Mar 8 – Oct 19	4	3	1

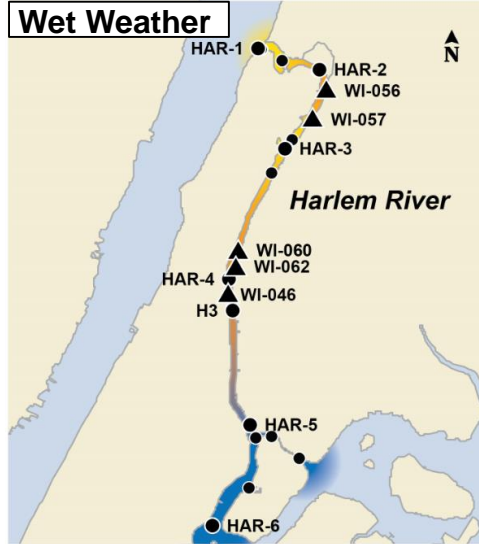
Note: Wet weather sampling conducted when Wards Island WRRF was not at 2xDDWF wet weather capacity due to construction.





# Harlem River – Enterococcus

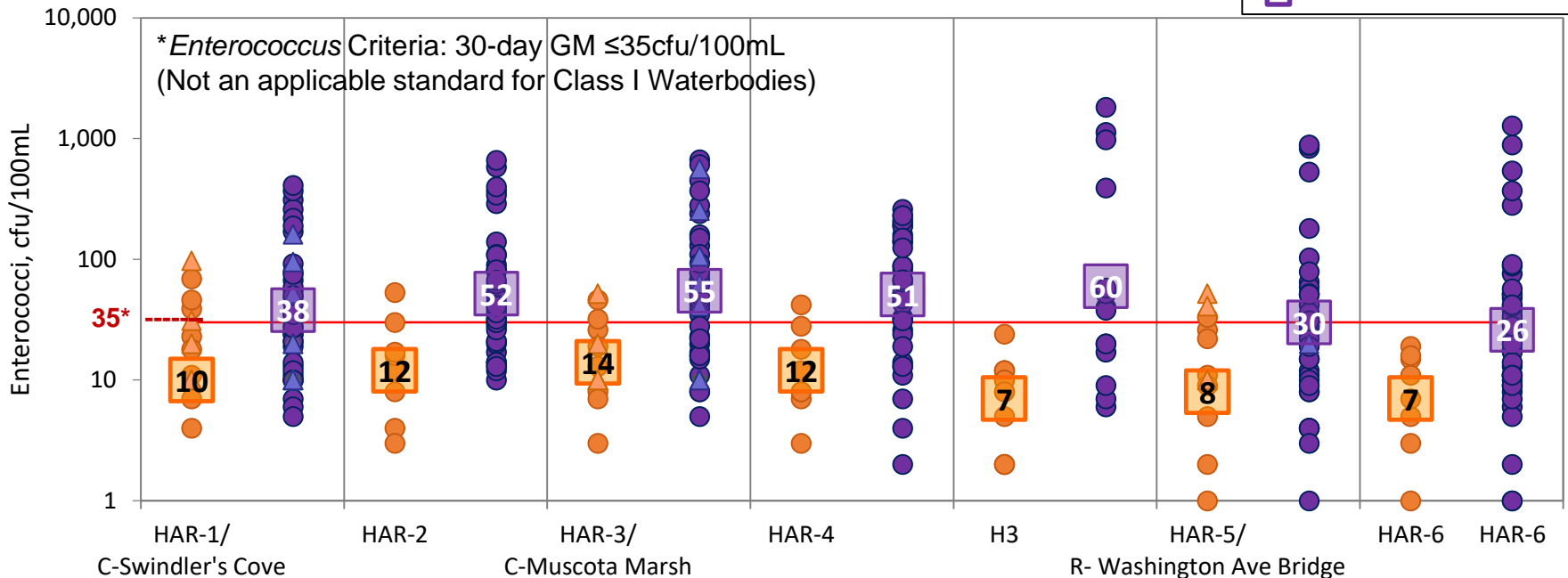
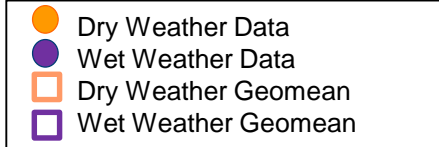
## Sampling Results at a Glance



## Sampling Details

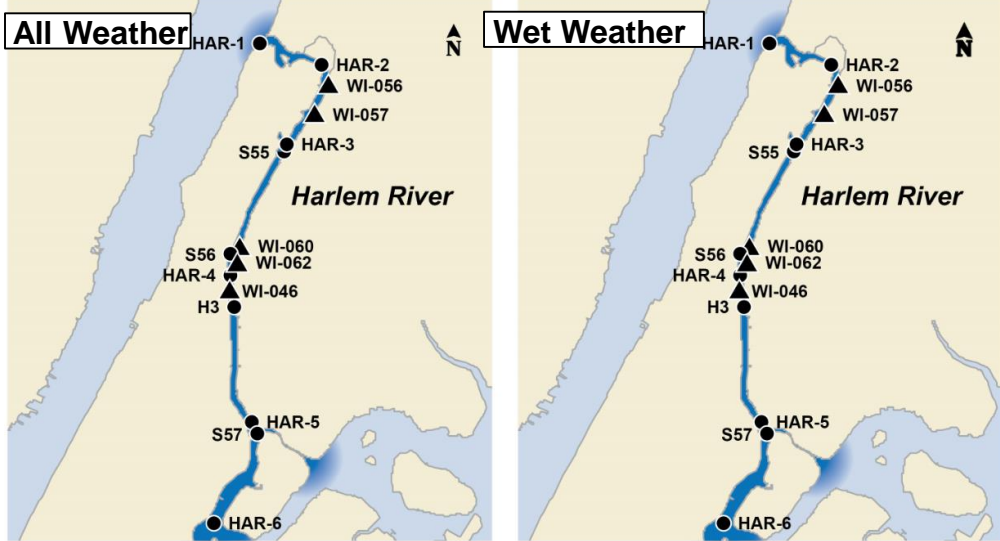
	Sampling Period (2016)	# Locations	# Samples	
			Dry	Wet
LTCP	Apr 27 – Jun 9	6	8	38
	Nov 16 – Nov 19			
HSM	Jan 4 – Nov 9	1	12	15
Riverkeeper	May 1 – Oct 31	2	5	1
Citizen	May 1 – Oct 31	5	7	13

Note: Wet weather sampling conducted when Wards Island WRRF was not at 2xDDWF wet weather capacity due to construction



# Harlem River – Dissolved Oxygen

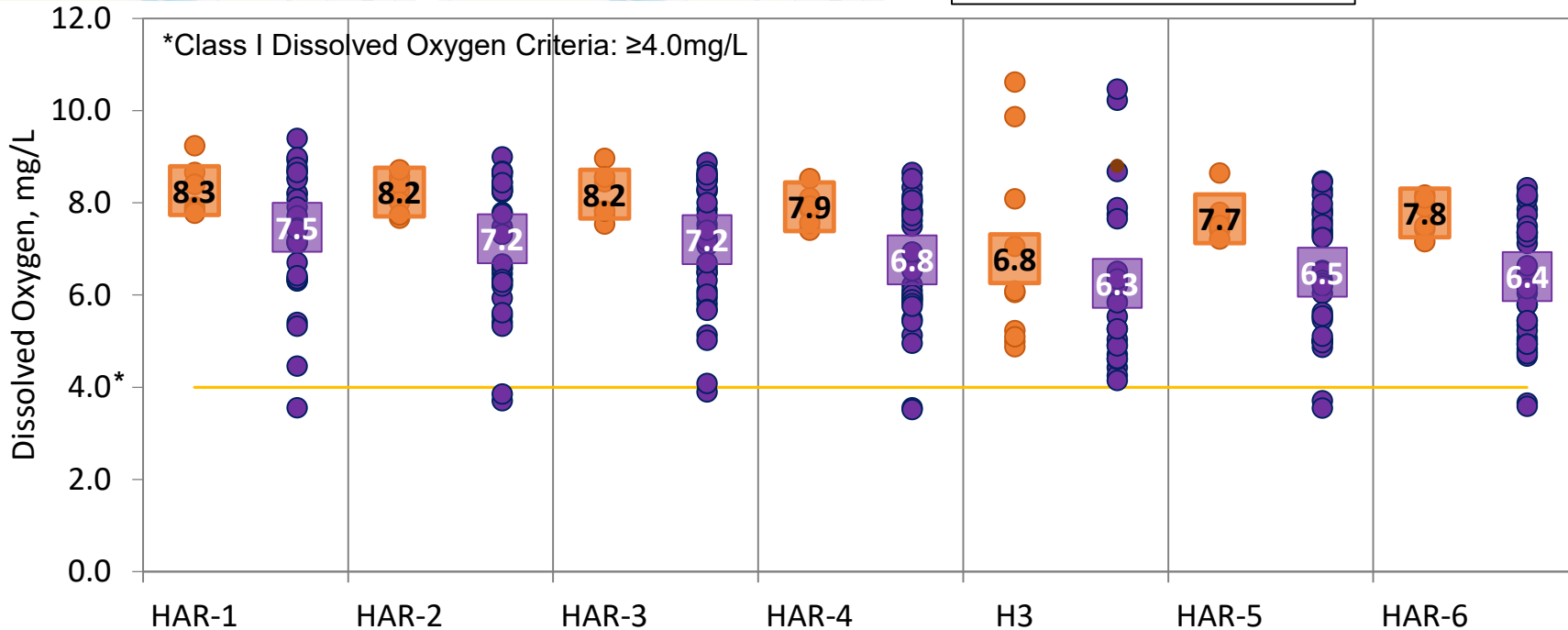
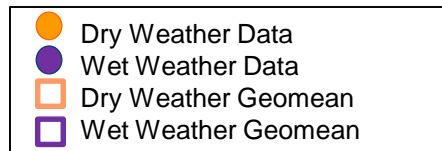
## Sampling Results at a Glance



## Sampling Details

	Sampling Period (2016)	# Locations	# Samples	
			Dry	Wet
LTCP	Apr 27 – Jun 9 Nov 16 – Nov 19	6	8	38
HSM	Jan 4 – Nov 9	1	20	30

Note: Wet weather sampling conducted when Wards Island WRRF was not at 2xDDWF wet weather capacity due to construction.





## Wards Island WWTP Upgrades

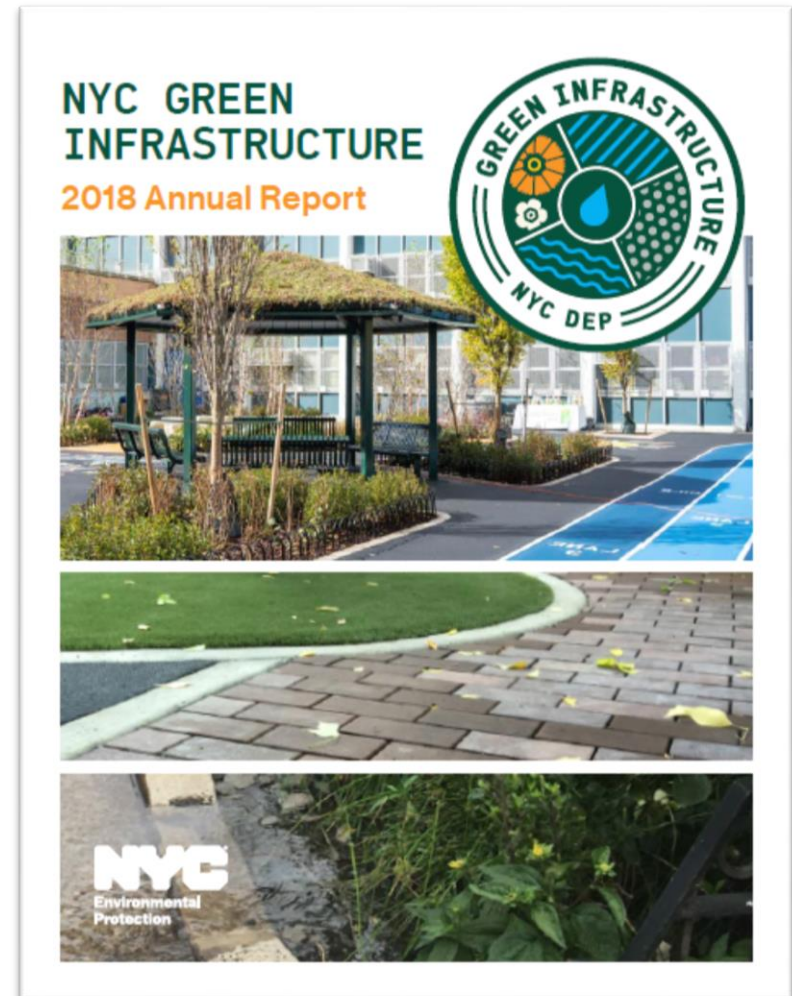
- **\$13.7 M** Replace Bar Screens at Bronx and Manhattan Grit Chambers  
[Completed January 2017]
- **\$5.3 M** Reconstruction of Six (6) Main Sewage Pumps  
[Completed August 2019]
  - During construction wet weather flow capacity was reduced
  - Full wet weather flow capacity was restored with the completion of this work

# **Overview of Demand Management and Tibbetts Brook Daylighting Projects**

Pinar Balci, PhD  
Assistant Commissioner  
DEP

- Public Property Retrofits
- Private Property Incentives
- Stormwater Rules
- Demand Management Project
- Tibbetts Brook Daylighting Project

GI Commitment is to capture 1.67B gallons of CSO Citywide by 2030

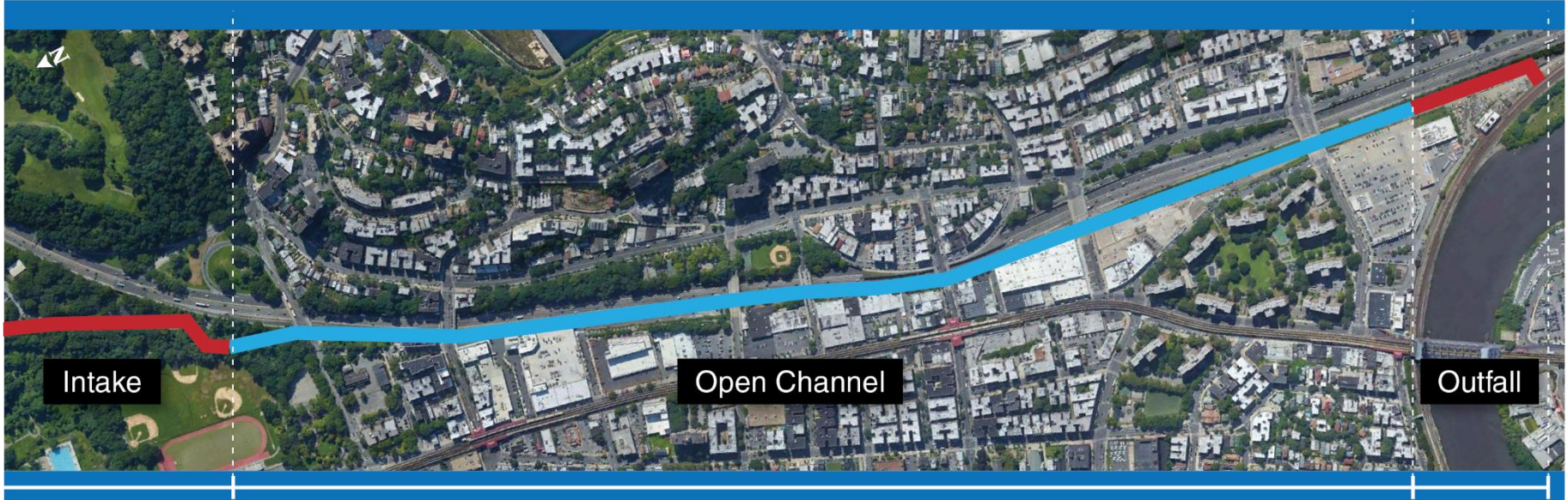


## Central Park Jackie Onassis Reservoir Recirculation Project

- 0.83 MGD of potable water savings
- CSO reduction of **about 4 MG/yr** to the East River



# Tibbetts Brook – Proposed Alternatives

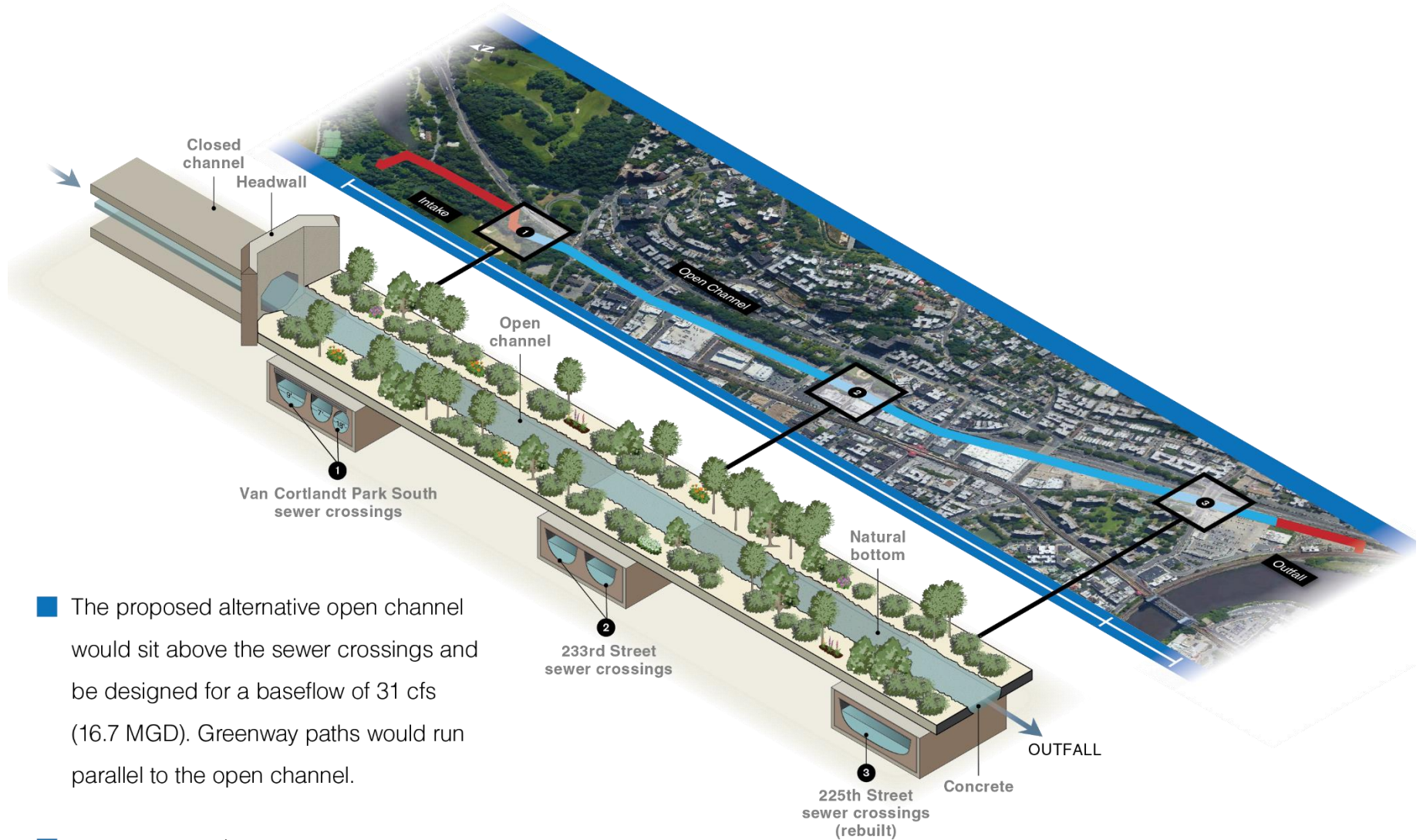


— Closed Channel — Open Channel

## Summary of Alternatives

CSO Reduction		CSO Reduction (MG/year)	Cost Estimate (\$M)	CSO Reduced \$/gal	Need Siphons	Maintenance Requirements	Safety Requirements	Constructability Concerns	Open Channel Flow (cfs)	Channel Dimensions	
Option	Description									Open Channel Cross Section	
1	Base Flow Daylighting I w/ Van Cortlandt Lake Improvements	156   202	55   60	0.35   0.30	No	Low	Low	Medium	Up to 14	3'	
2	Base Flow Daylighting w/ Van Cortlandt Lake Improvements and Additional Storm Flow	228	63	0.28	No	Low	Low/Moderate	Medium	Up to 31	3.5'	
3	Base Flow Daylighting with Parallel Pipe for Full Flow	282	90	0.32	Yes	High	Low	Severe	Up to 14 (203 in parallel pipes)	5'	
4	Full Flow Daylighting	282	N/A	N/A	Yes	High	High	Very Severe	Up to 217	5'	

# Option 2 – Open Channel

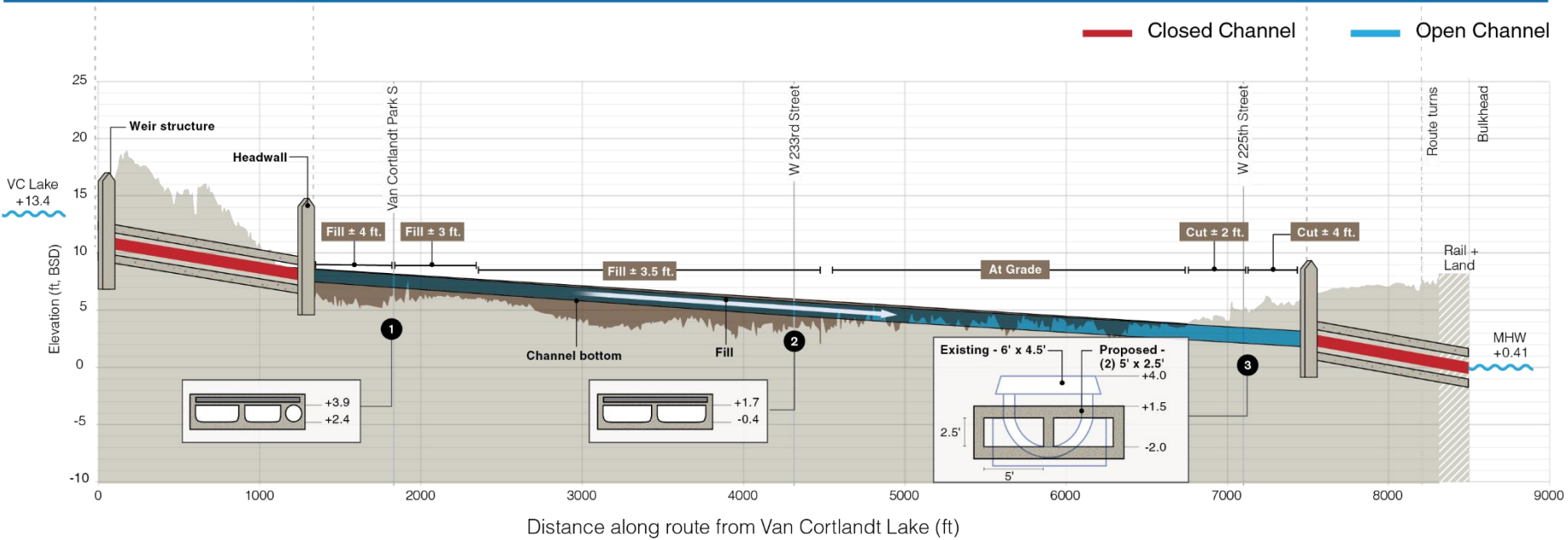
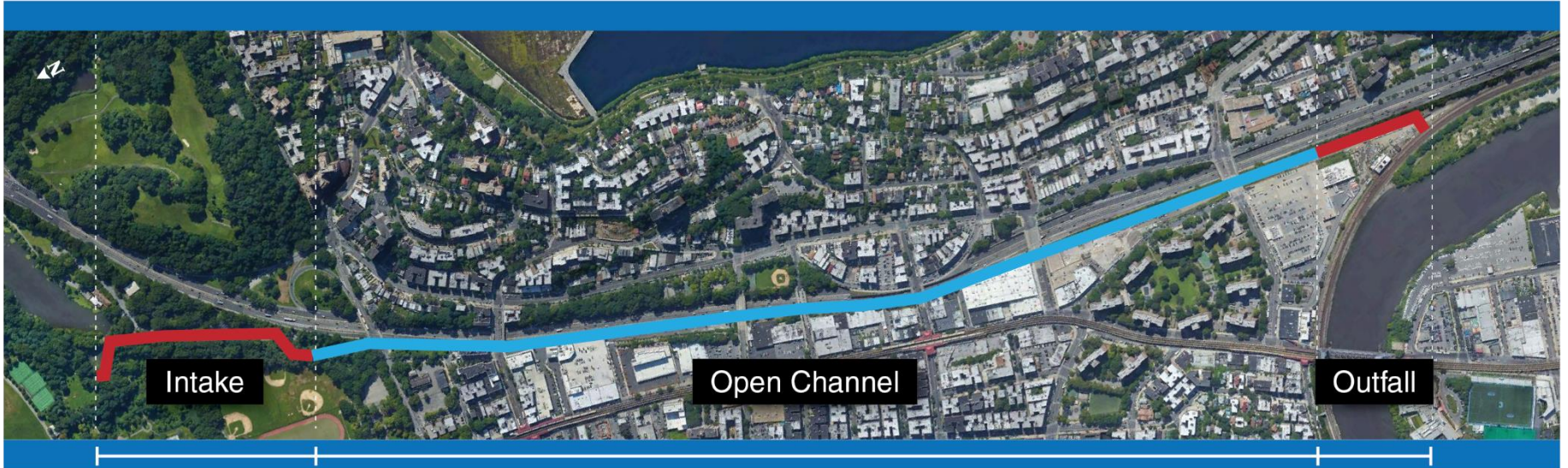


The proposed alternative open channel would sit above the sewer crossings and be designed for a baseflow of 31 cfs (16.7 MGD). Greenway paths would run parallel to the open channel.

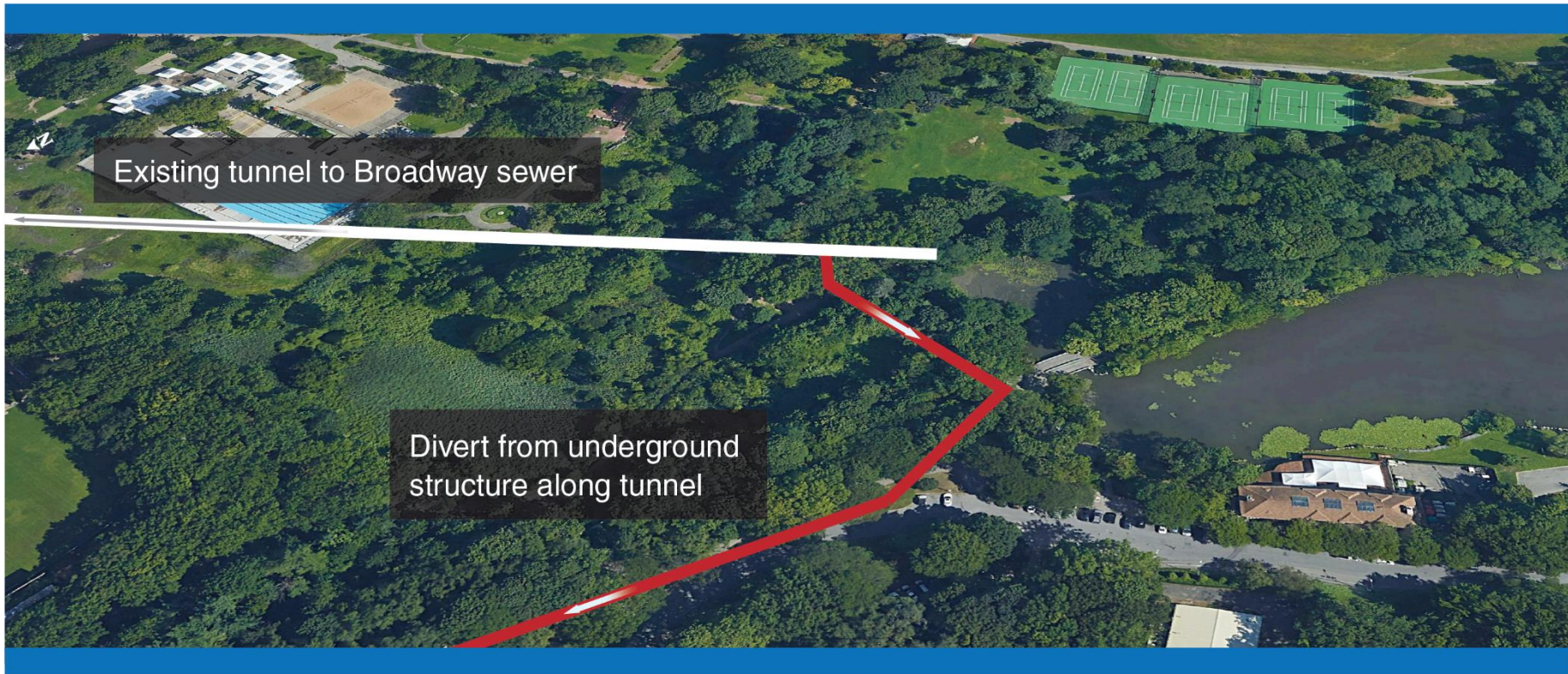
Cost estimate: \$63 million



# Tibbetts Brook – Proposed Alternative



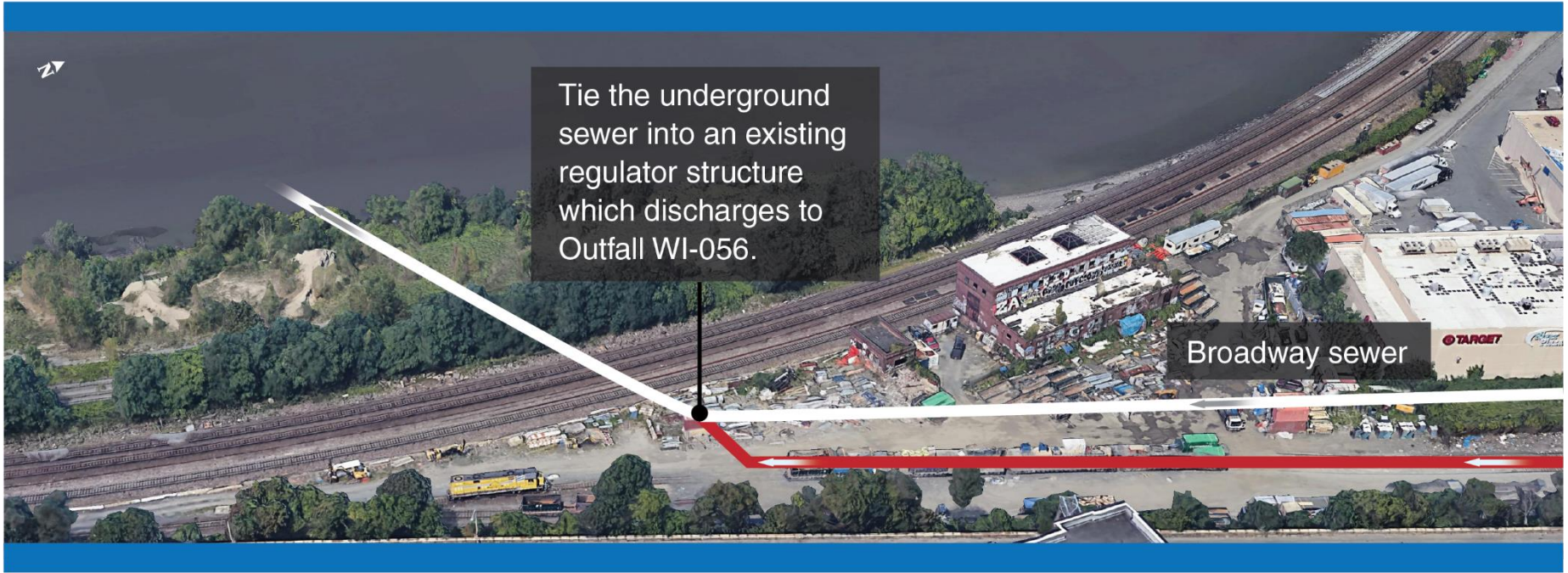
# Tibbetts Brook – Intake



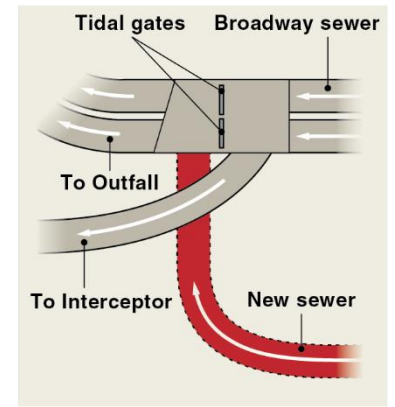
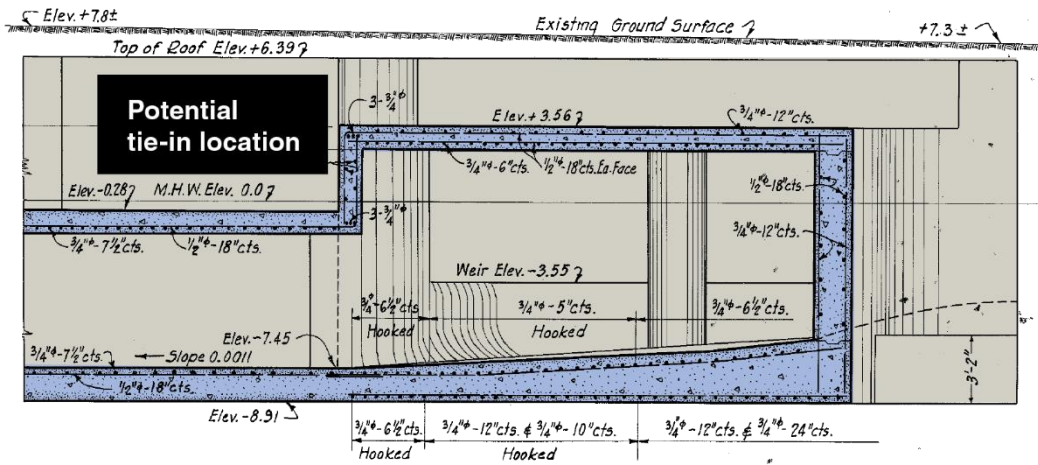
The proposed alternative would divert flow from a tunnel which connects an existing weir structure in Van Cortlandt Lake to the Broadway Sewer



# Tibbetts Brook – Potential Tie-in Location



The new sewer will tie into the tide gate chamber of Regulator 67, downstream of the tide gates and discharge through outfall WI-056



- Modify the downstream overflow weir to include a low flow orifice, which would create a foot of dynamic storage at the top of the lake (volume of 13 acre-feet)
- Construct new weir structure between Upper Basin and Van Cortlandt Lake to maintain existing water surface elevation of Upper Basin and protect high-value wetland



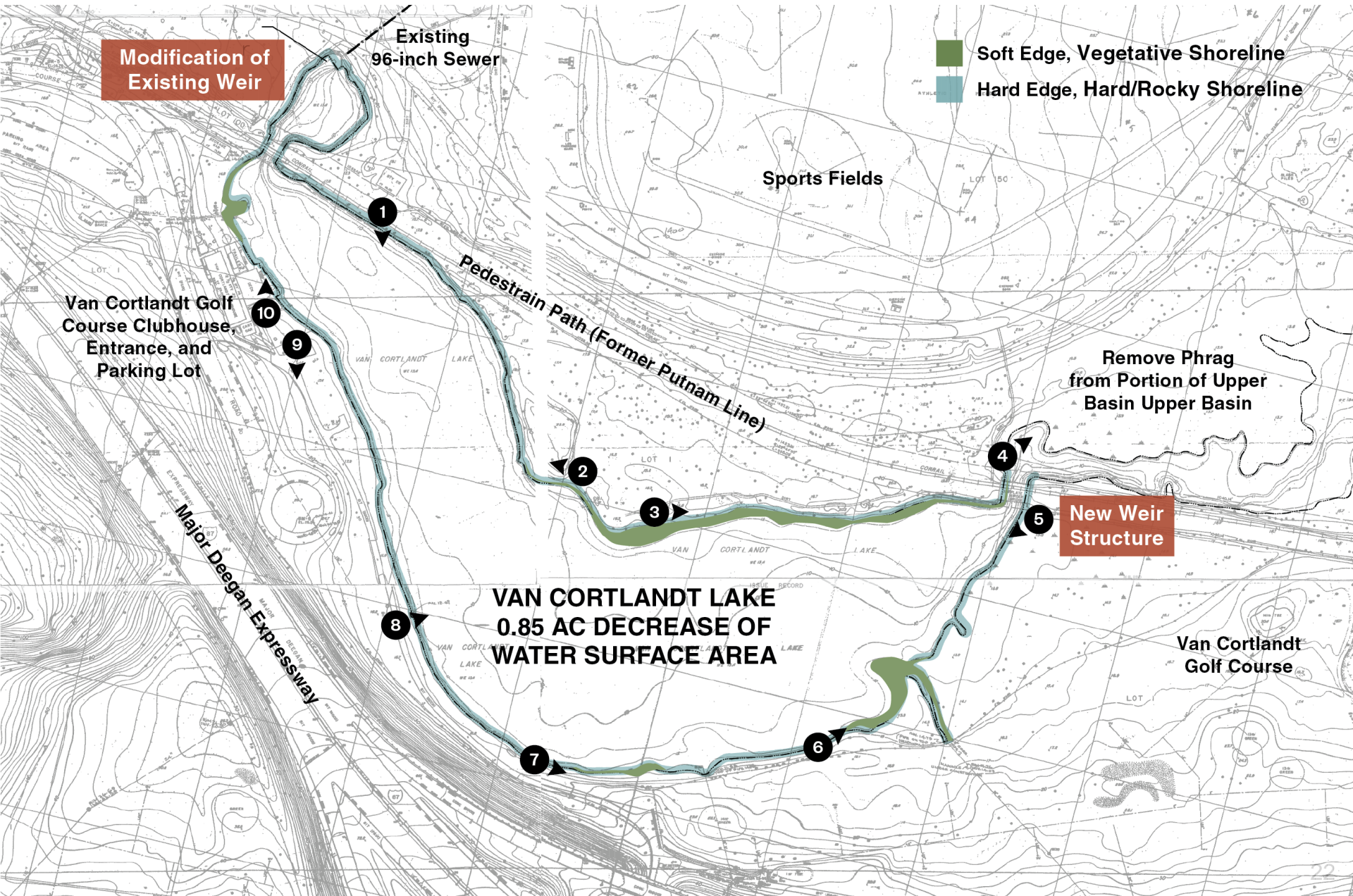
Overflow weir structure

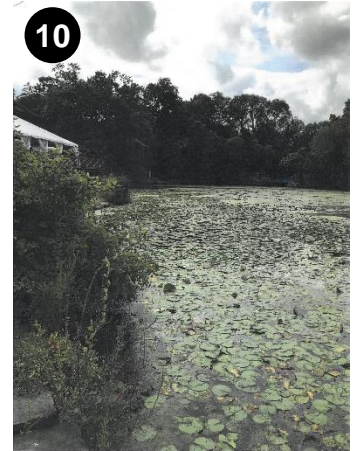
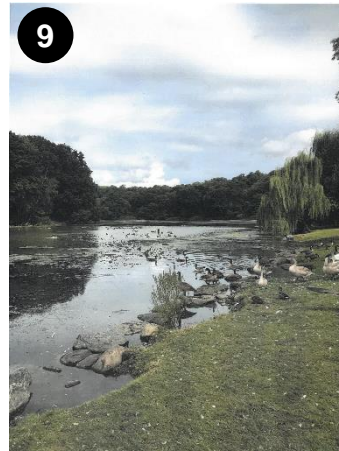
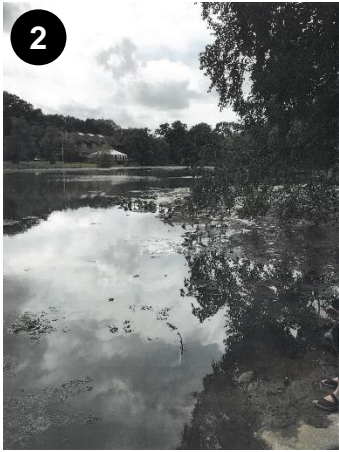
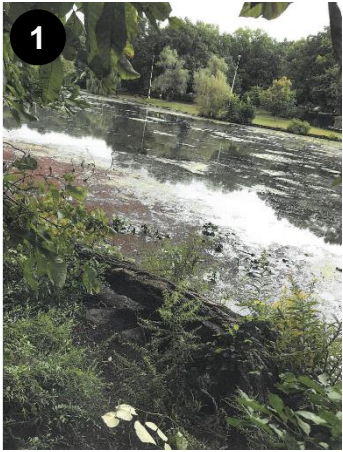
Entrance to collection system



- Minimal land disturbance (excavation or fill) would be required – primarily modifications to existing structures
- Creating dynamic storage without altering overall hydrology
- An additional 0.85 acre of wetland plantings would be created, diversifying shoreline, improving water quality, and potentially broadening flora and fauna

# Proposed Improvements at Van Cortlandt Lake









# Next Steps

Mikelle Adgate  
Senior Policy Advisor  
DEP

# Citywide/Open Waters LTCP Public Outreach



- Citywide/Open Waters LTCP Submittal to DEC**
- Final LTCP Summary
  - Complete LTCP Report
  - Response to Public Comments

- Visit the DEP Website for more information: [www.nyc.gov/dep/ltcp](http://www.nyc.gov/dep/ltcp)
  - Monthly Updates on the Citywide LTCP
  - Citywide LTCP Content: sampling information, baseline information etc.
  - CSO Order including LTCP Goal Statement
  - Links to Waterbody/Watershed Facility Plans
  - Presentations, Meeting Materials and Meeting Summaries
  - LTCP Brochure and Waterbody Fact Sheets
  - All Submitted LTCP Reports and Other LTCP Updates
  - NYC's Green Infrastructure Reports and Grant Program
  - Green Infrastructure Interactive Map of Projects
  - NYC Waterbody Advisory Program
  - Upcoming Meeting Announcements