



Citywide/Open Waters

CSO Long Term Control Plan

Public Meeting
Harlem River/Tibbetts Brook

October 2, 2019

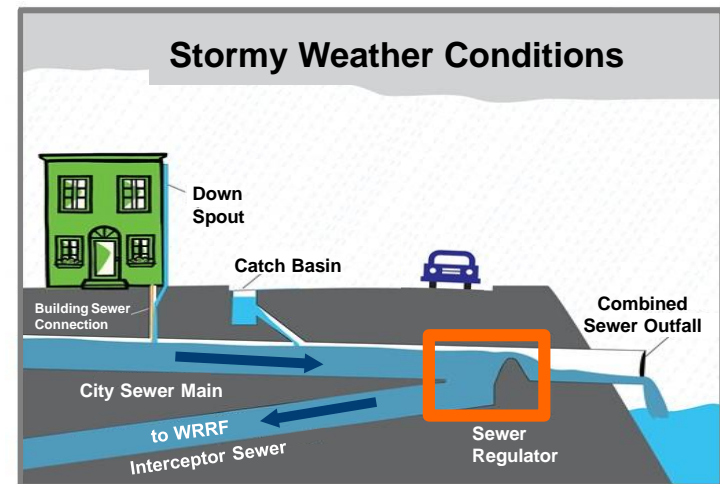
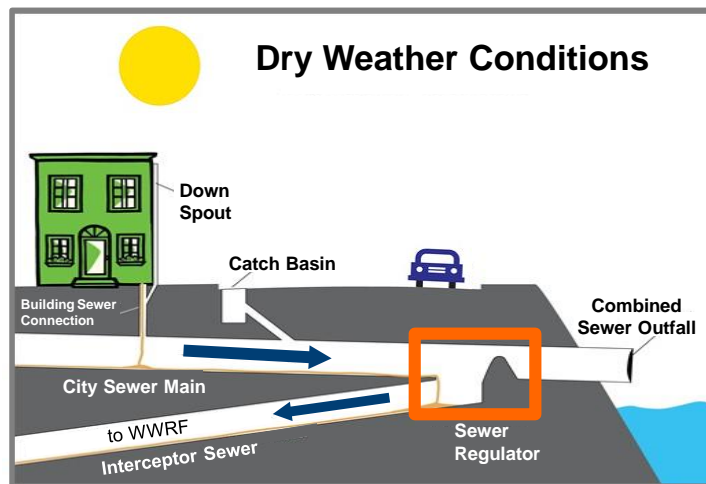
	Topic	Speaker
1	Welcome & Introduction	Mikelle Adgate
2	Summary of Water Quality & Existing Grey Projects	Keith Mahoney
3	Overview of Demand Management and Tibbetts Brook Daylighting Projects	Pinar Balci
4	Next Steps	Mikelle Adgate

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

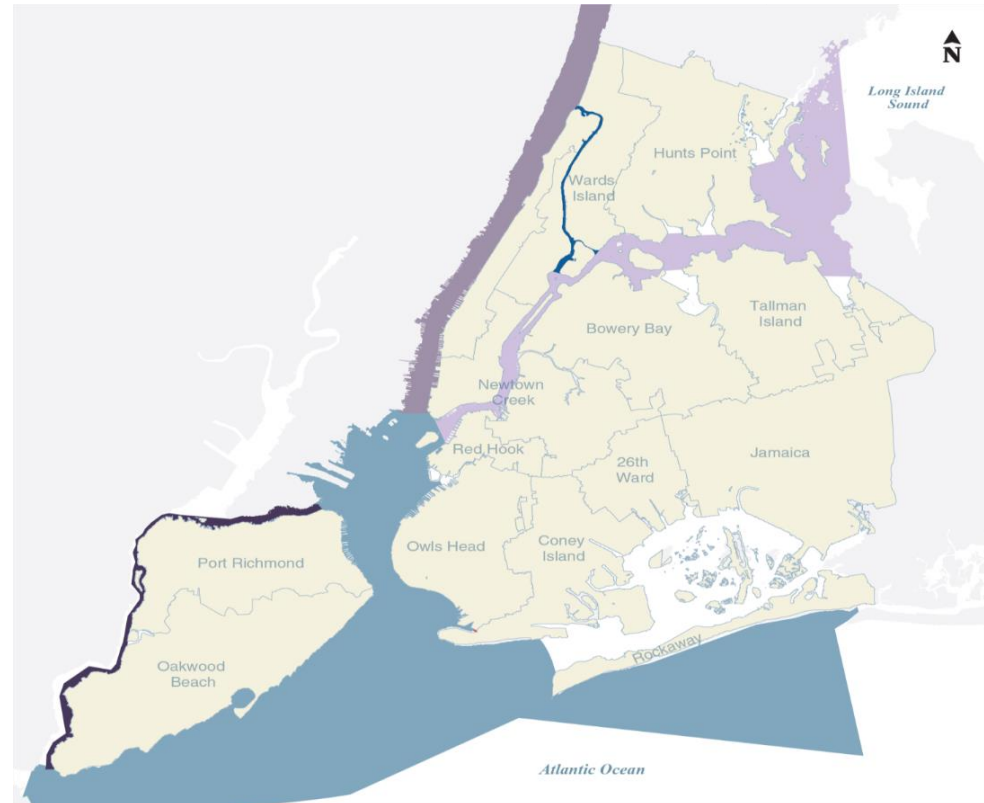
■ Upper and Lower New York Bay

■ 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**



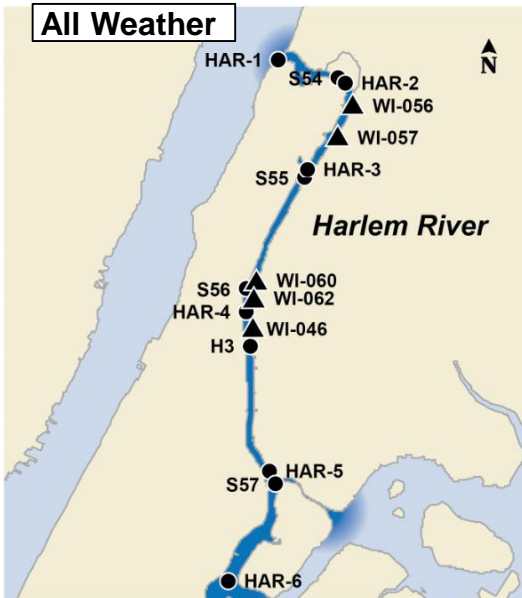
Summary of Water Quality & Existing Grey Projects

Keith Mahoney, PE
Senior Director
DEP

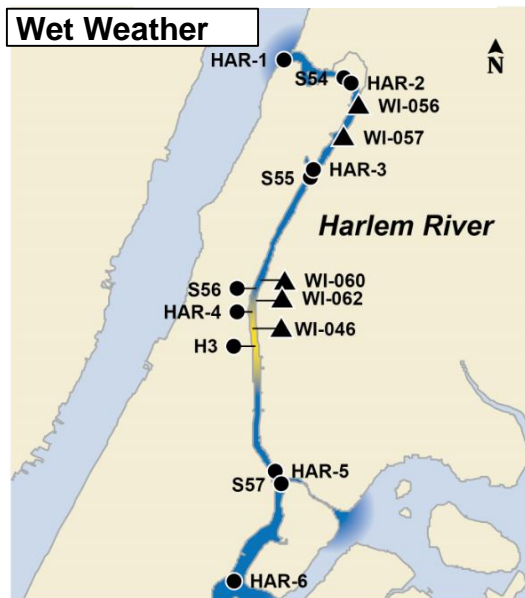
Harlem River – Fecal Coliform

Sampling Results at a Glance

All Weather



Wet Weather

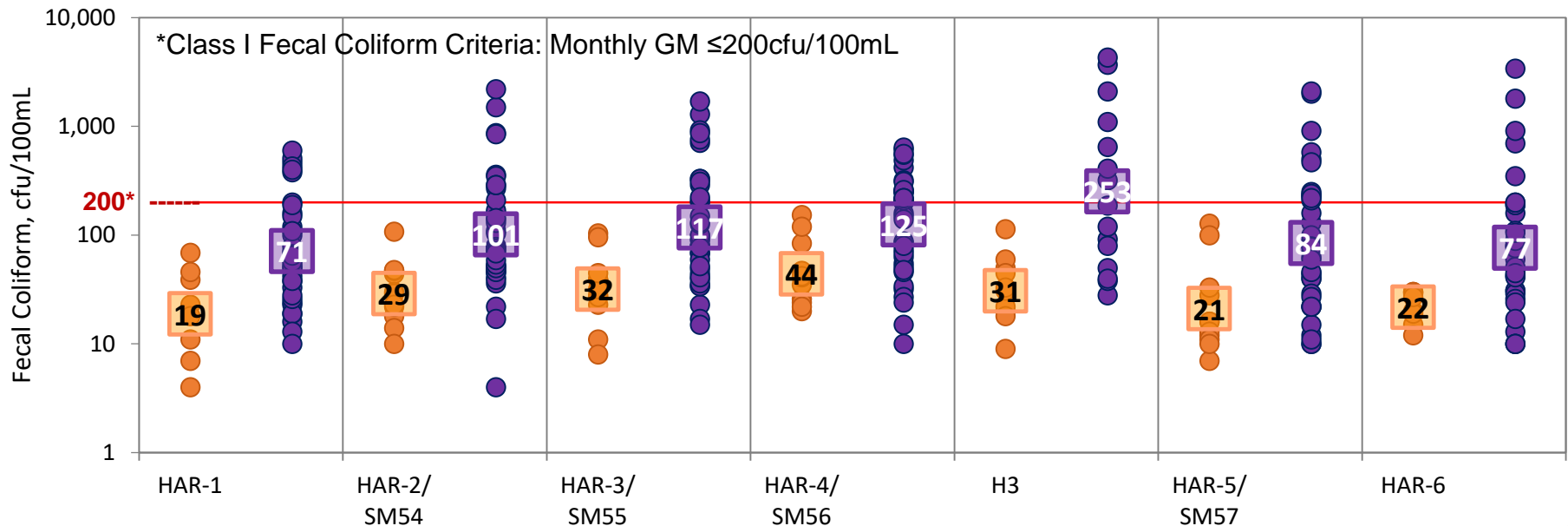


Sampling Details

	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.

- Dry Weather Data
- Wet Weather Data
- Dry Weather Geomean
- Wet Weather Geomean



Harlem River – Enterococcus

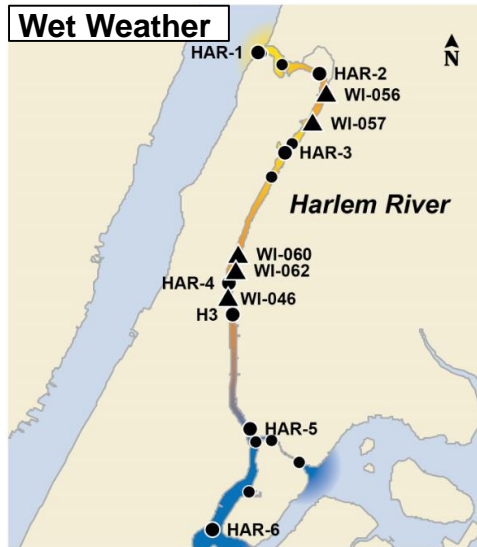
Sampling Results at a Glance



All Weather



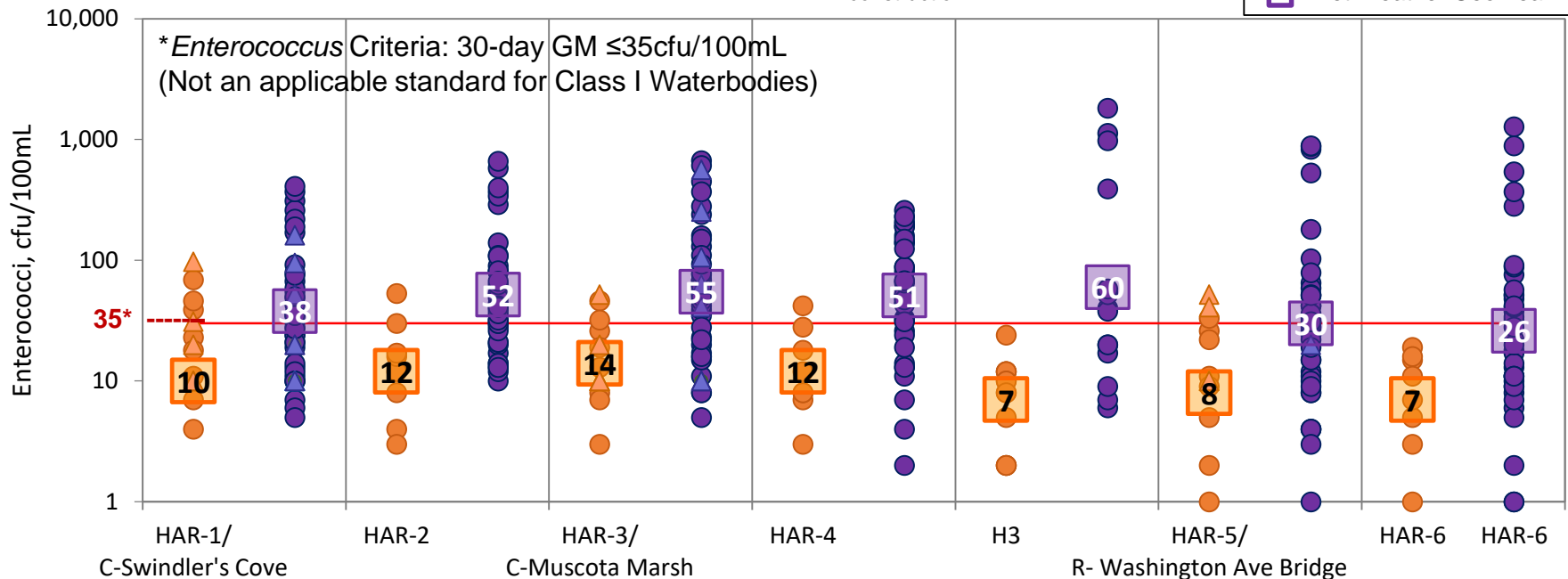
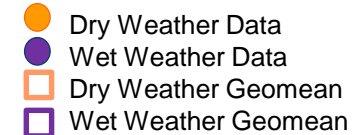
Wet Weather



Sampling Details

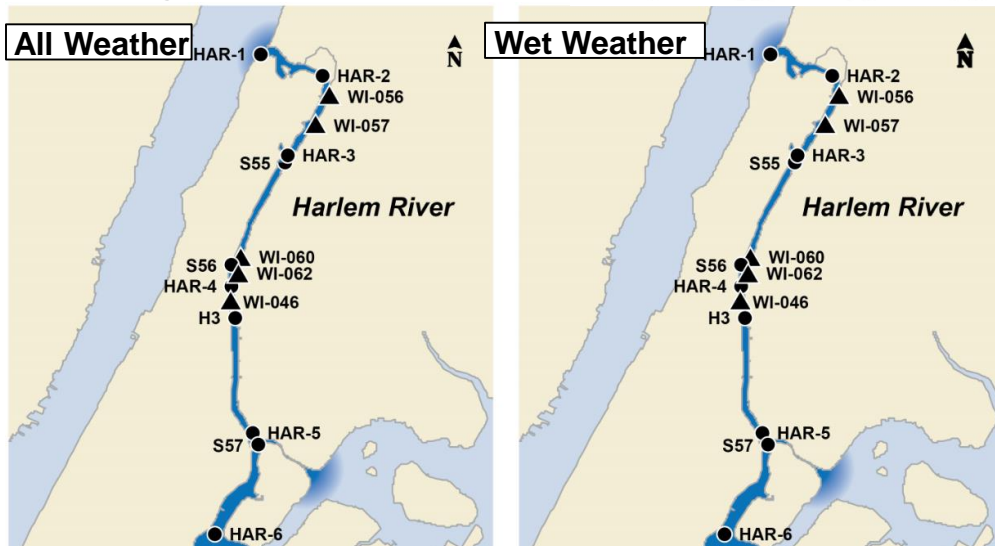
	Sampling Period (2016)	# Locations	# Samples	
			Dry	Wet
LTCP	Apr 27 – Jun 9 Nov 16 – Nov 19	6	8	38
HSM	Jan 4 – Nov 9	1	12	15
Riverkeeper	May 1 – Oct 31	2	5	1
Citizen	May 1 – Oct 31	5	7	13

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



Harlem River – Dissolved Oxygen

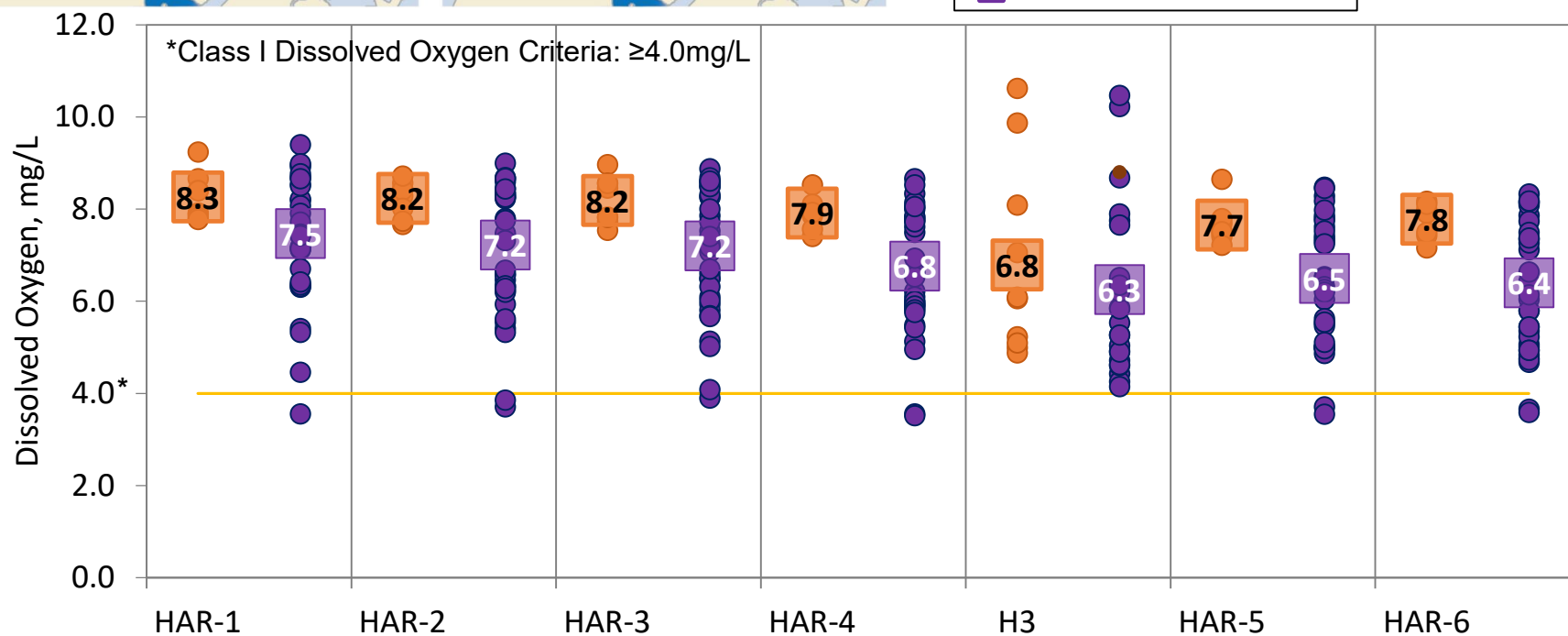
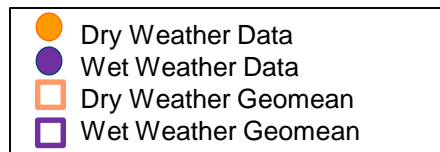
Sampling Results at a Glance



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

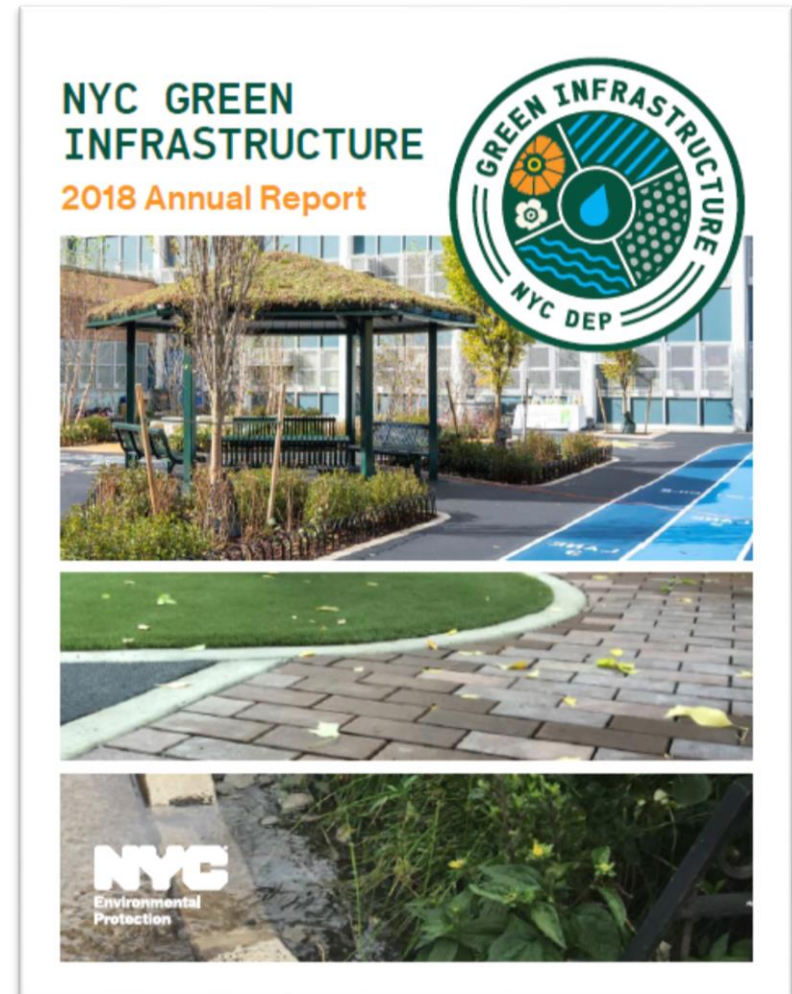
- **\$13.7 M** Replace Bar Screens at Bronx and Manhattan Grit Chambers
[Completed January 2017]
- **\$5.3 M** Reconstruction of Six (6) Main Sewage Pumps
[Completed August 2019]
 - During construction wet weather flow capacity was reduced
 - Full wet weather flow capacity was restored with the completion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

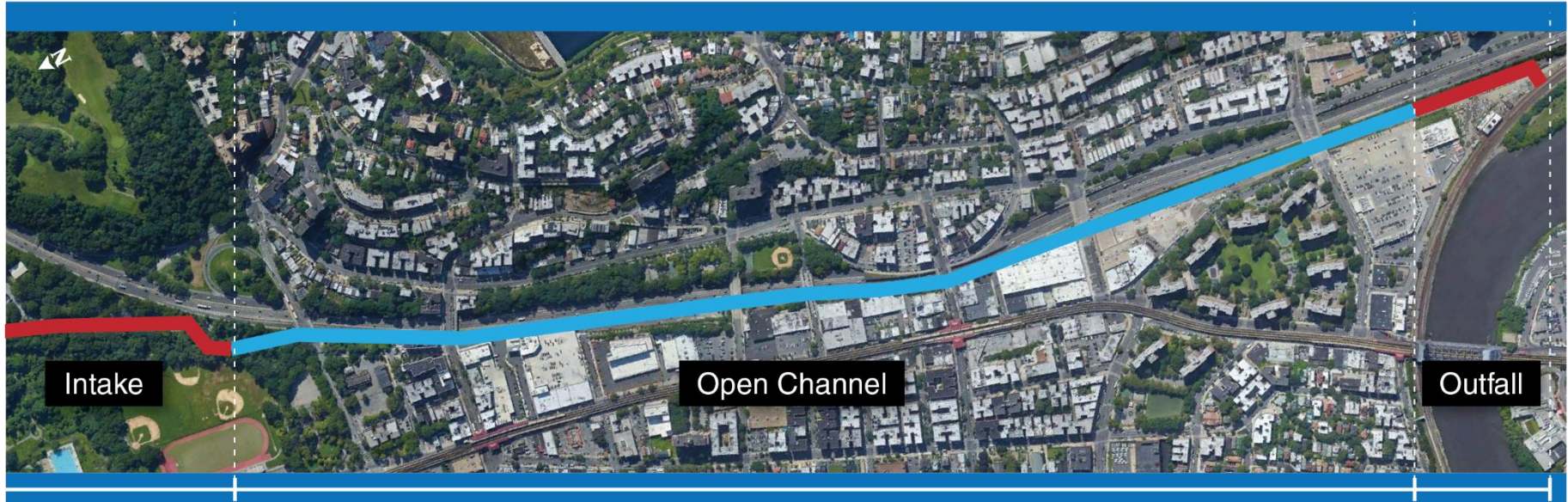


Central Park Jackie Onassis Reservoir Recirculation Project

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



Tibbetts Brook – Proposed Alternatives

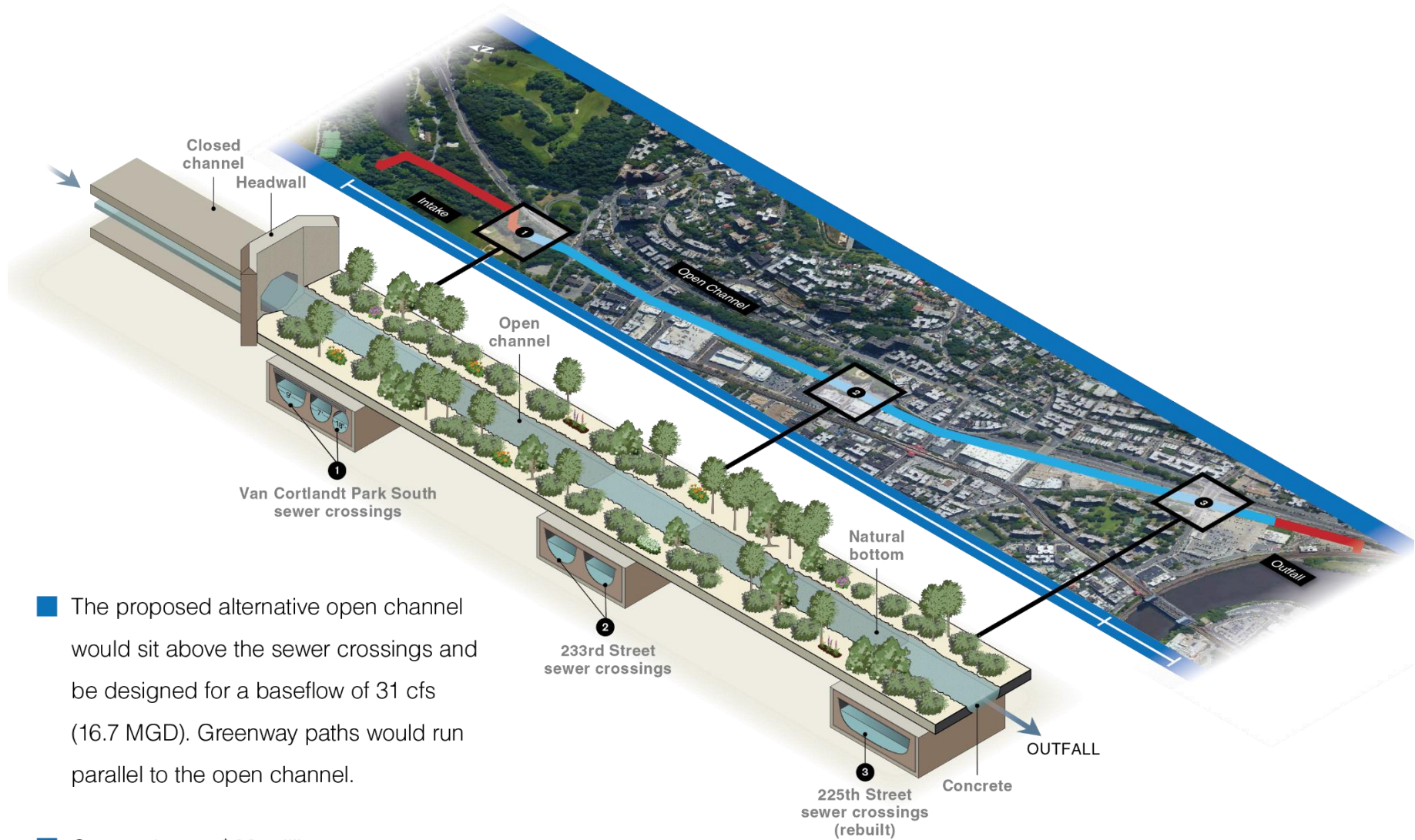


— Closed Channel — Open Channel

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'	

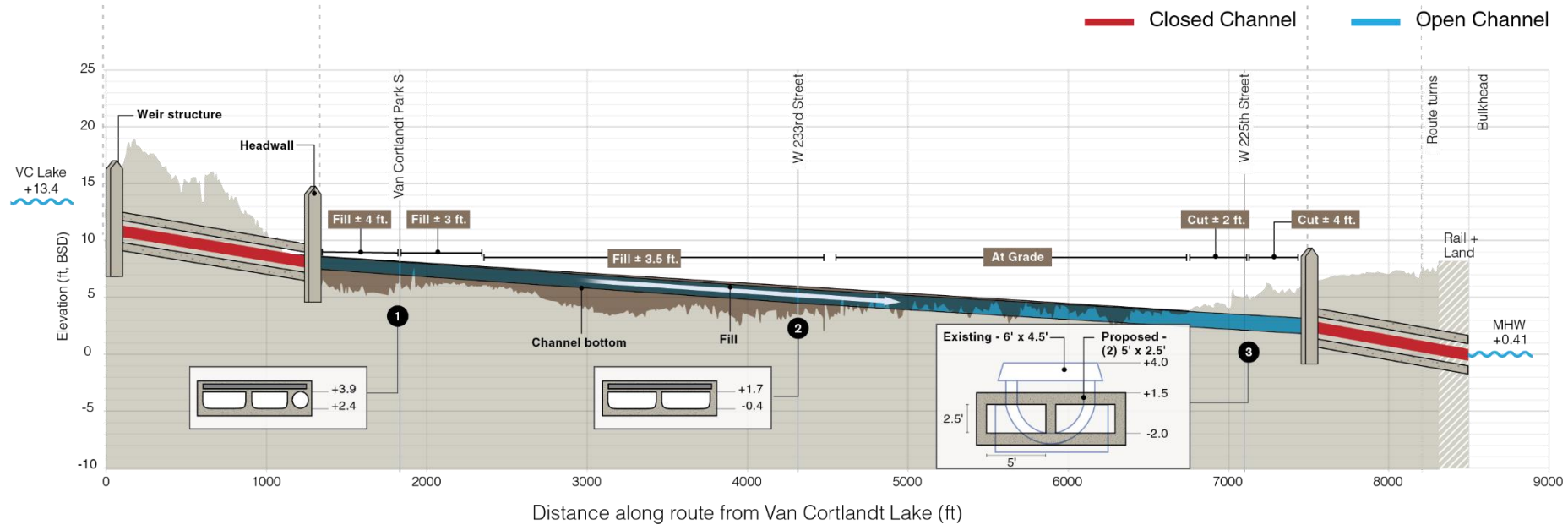
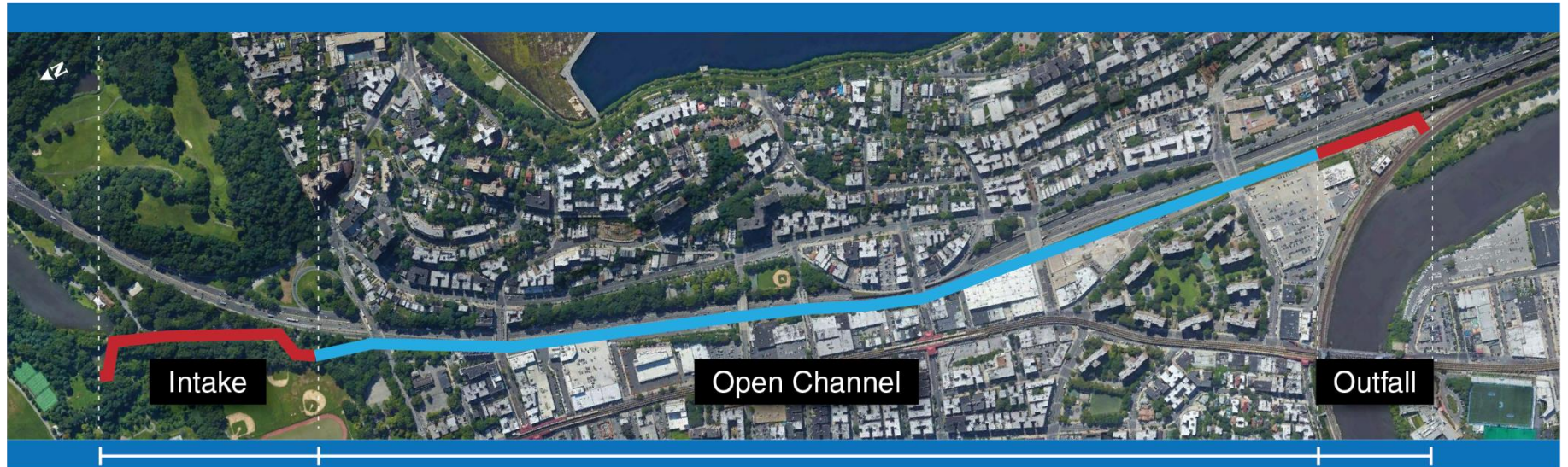
Option 2 – Open Channel



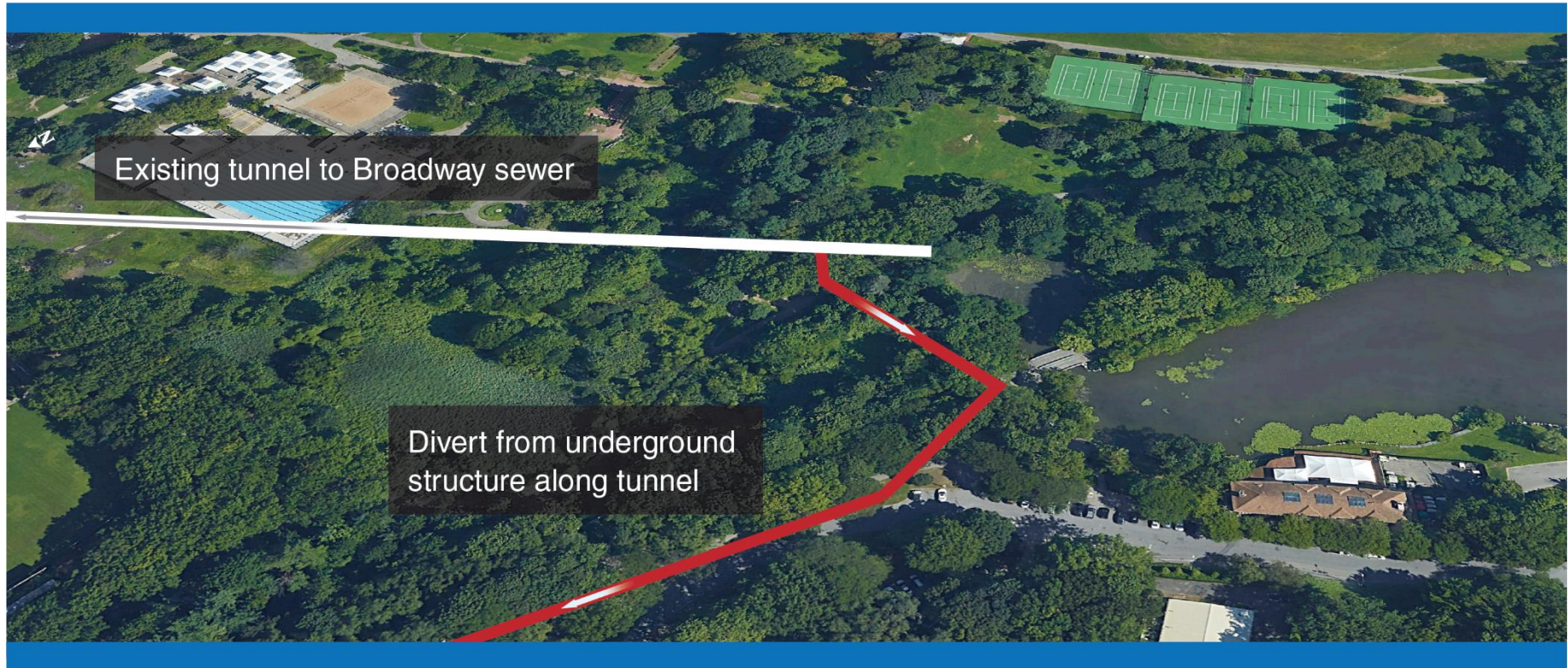
- The proposed alternative open channel would sit above the sewer crossings and be designed for a baseflow of 31 cfs (16.7 MGD). Greenway paths would run parallel to the open channel.

- Cost estimate: \$63 million

Tibbetts Brook – Proposed Alternative



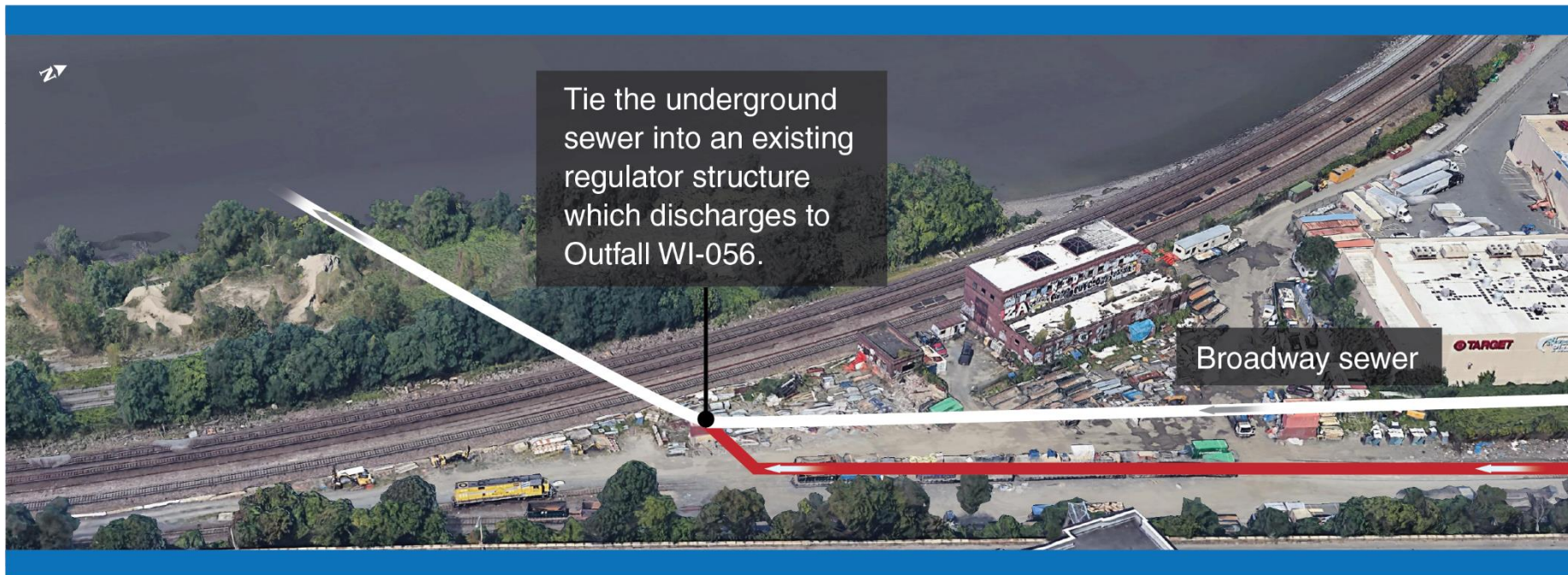
Tibbetts Brook – Intake



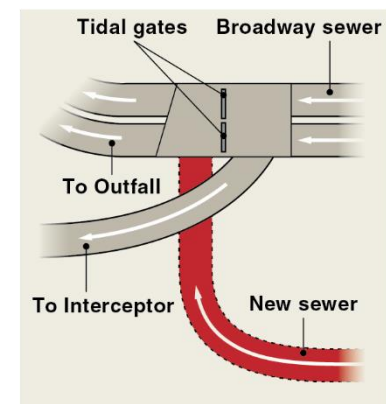
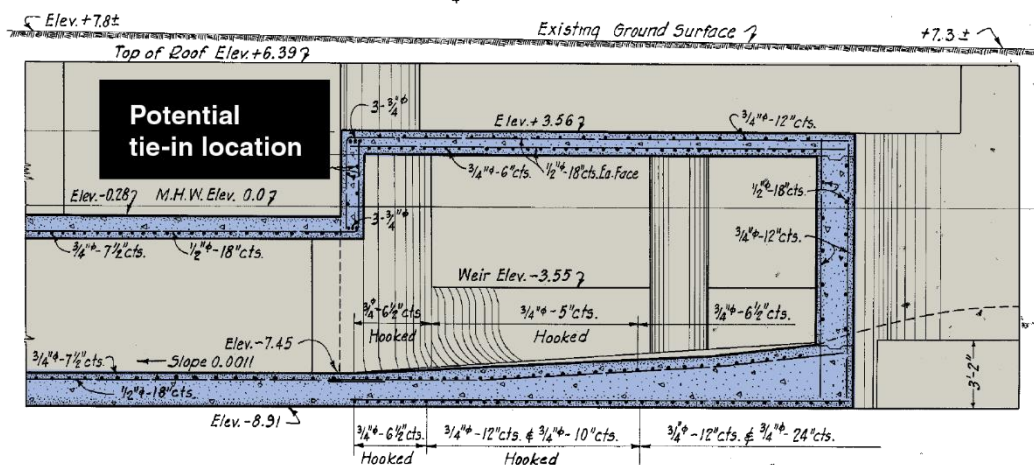
The proposed alternative would divert flow from a tunnel which connects an existing weir structure in Van Cortlandt Lake to the Broadway Sewer



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



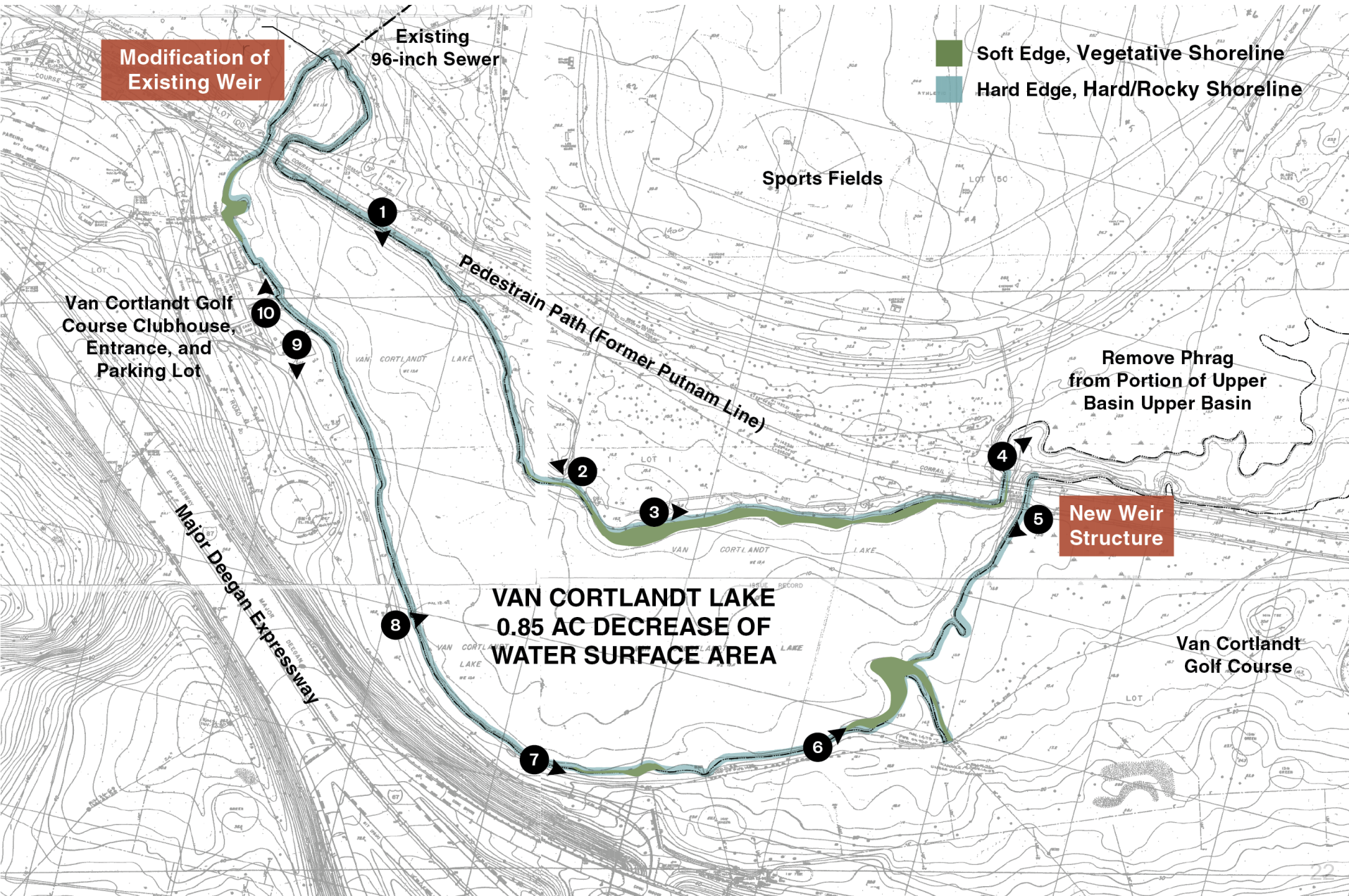
Overflow weir
structure

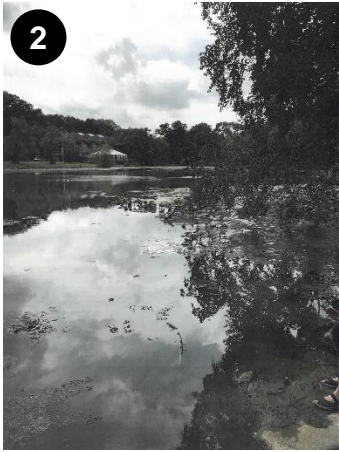
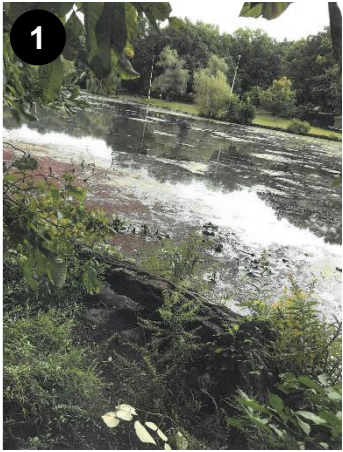
Entrance to
collection
system



- 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



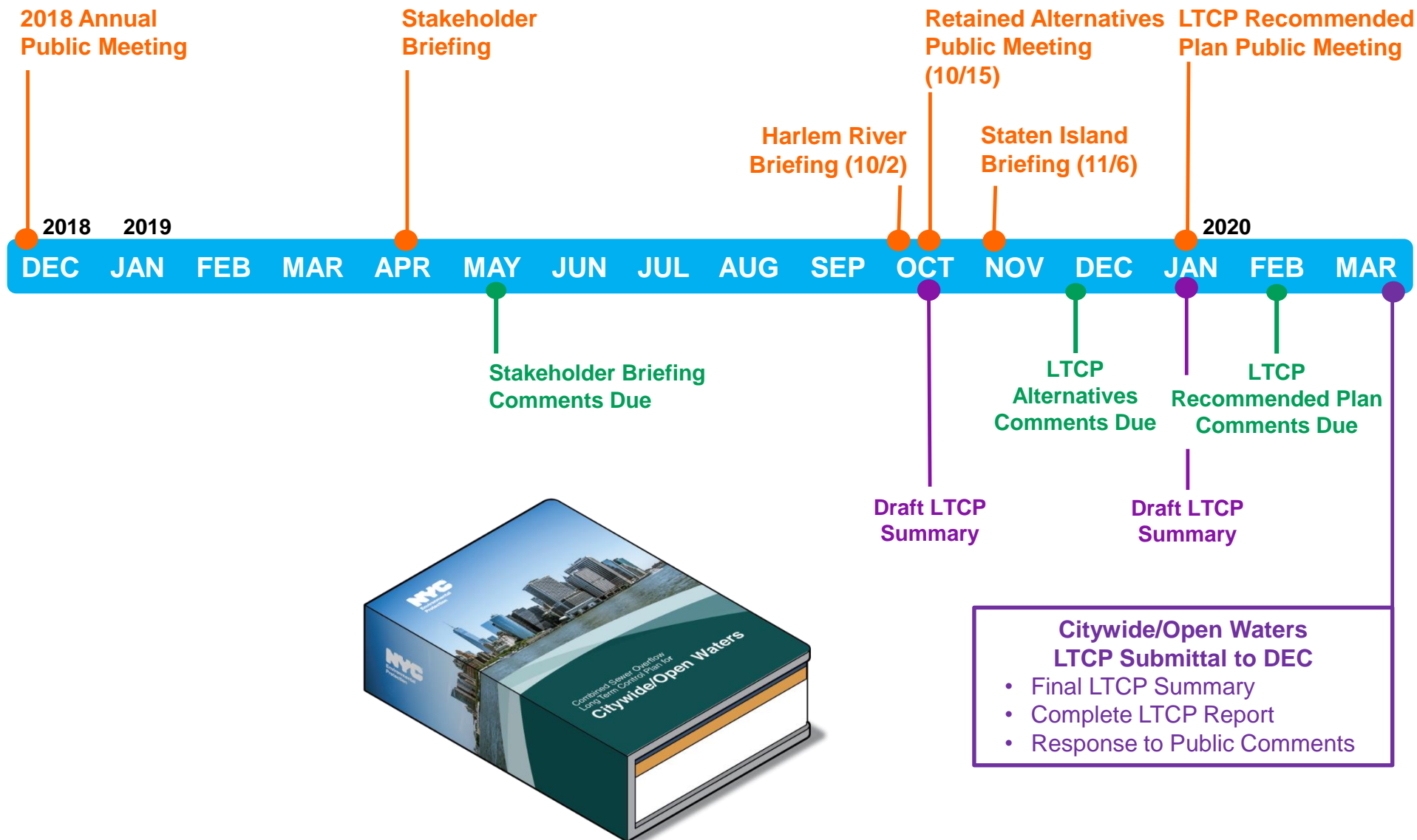




Next Steps

Mikelle Adgate
Senior Policy Advisor
DEP

Citywide/Open Waters LTCP Public Outreach



➤ Visit the DEP Website for more information: 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