



Coney Island Creek Combined Sewer Overflow Long Term Control Plan

Public Kickoff Meeting

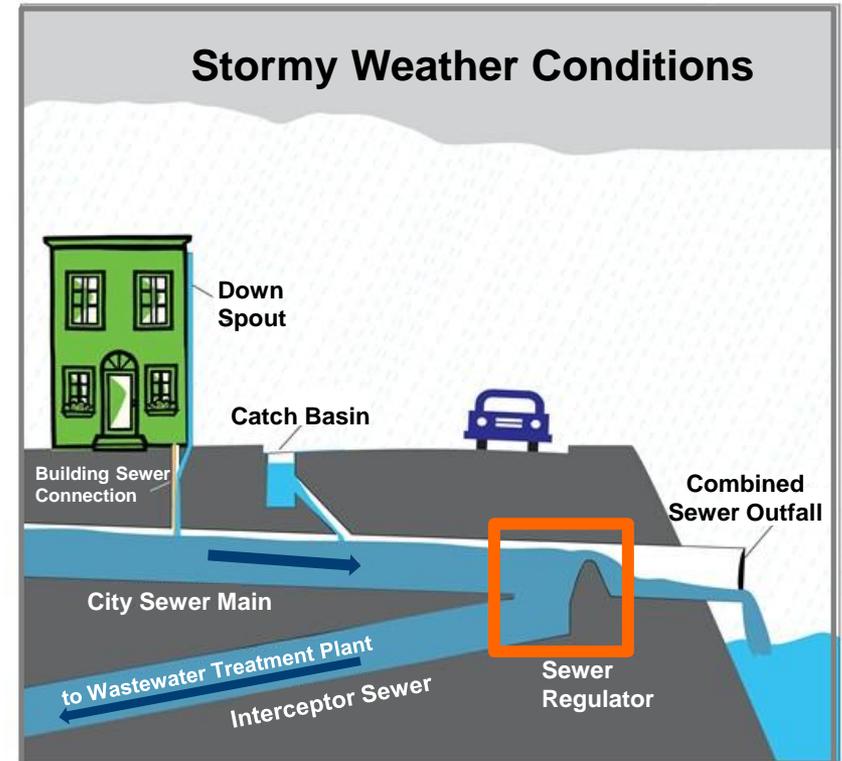
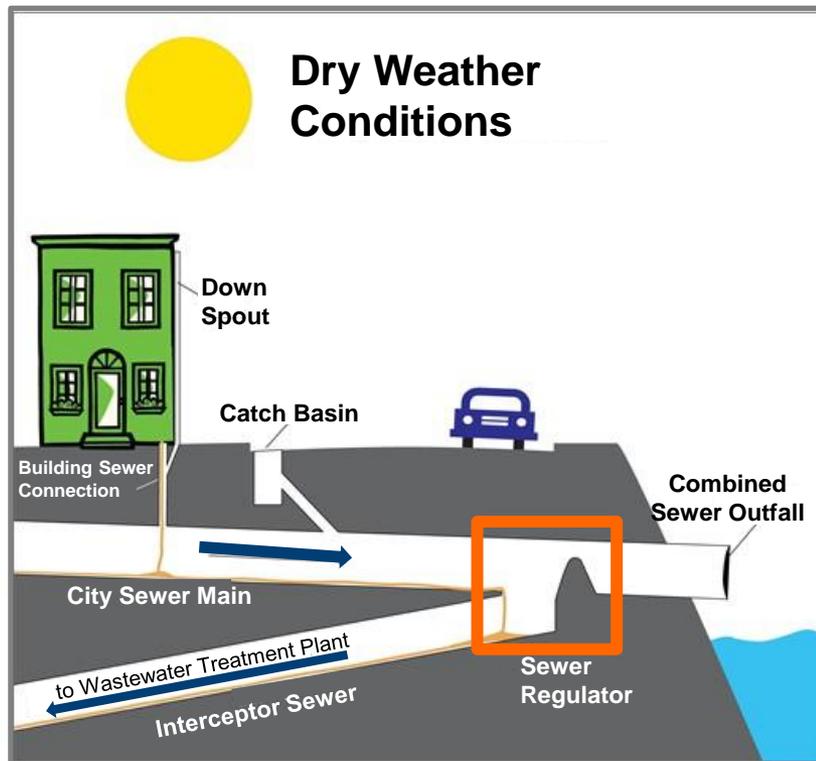
**PS 90, Brooklyn, NY
November 4, 2015**

Welcome & Introductions

Ibrahim Abdul-Matin
Director of Community Affairs
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**.



- 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).
- 65% to 90% of **combined** sanitary & storm flow is captured at treatment plants.

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

- Rainfall characteristics that trigger a CSO event at Coney Island Creek:
 - 0.4 to 1-inch of constant rainfall over a period of 2 to 10 hours



- **Not every rainfall causes a CSO event:**
 - Of the average 100 rainfall events per year about 22 CSO events may occur at Coney Island Creek

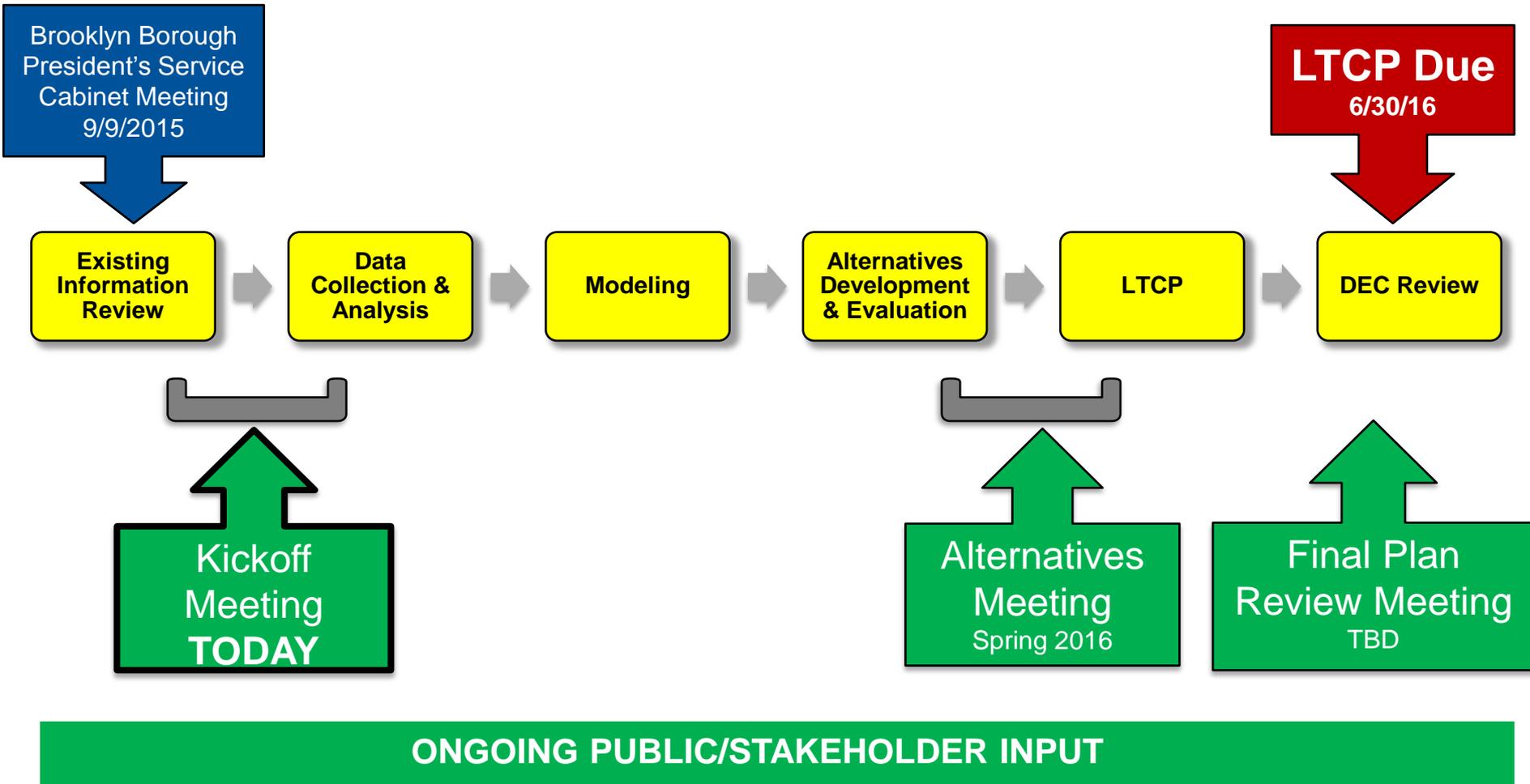


Evaluated a comprehensive range of rainfall data:

- Historical data range:
42 years from 1969 to 2010
- Four representative rainfall gauges: **Central Park**, **LGA**, **JFK**, and **ERW**
- Selected **2008 JFK rainfall** as the most representative of average annual rainfall across all four gauges



LTCP Process and Public Involvement



Questions?

Waterbody & Watershed Characteristics

Jim Mueller, P.E.
Assistant Commissioner
DEP

Historical Photos of Coney Island Creek

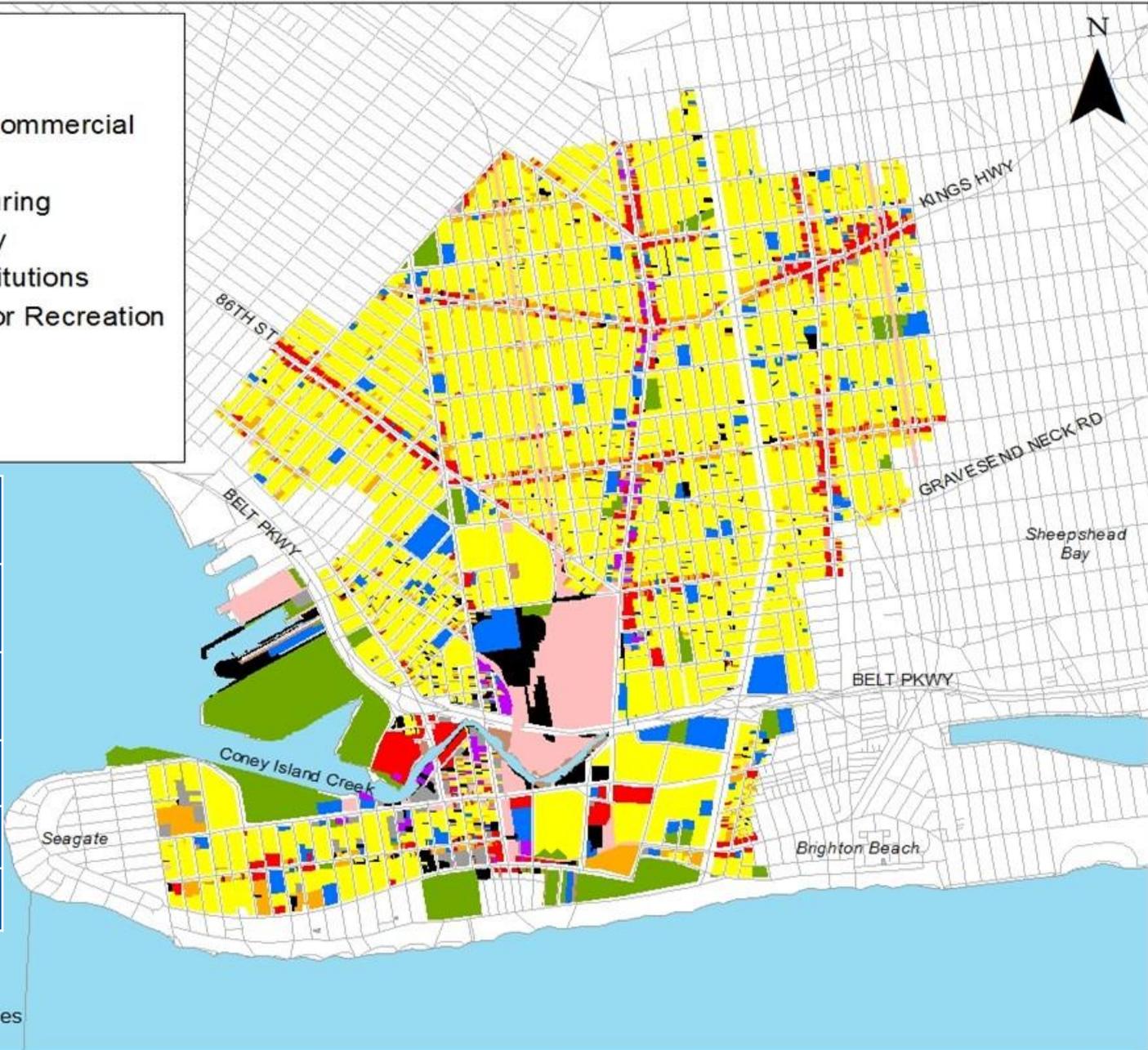


Land Uses of Coney Island Creek Drainage Area

LEGEND

- Residential
- Mixed Residential and Commercial
- Commercial and Office
- Industrial and Manufacturing
- Transportation and Utility
- Public Facilities and Institutions
- Open Space and Outdoor Recreation
- Parking Facilities
- Vacant Land
- Unknown

Residential & Commercial	70%
Park and Open Space	10%
Transportation & Utility	7%
Public Facility	6%
Industrial	1%
Other	6%



0 0.15 0.3 0.6 0.9 1.2 Miles

➤ Waterfront Public Access

- 1 Coney Island Creek Park
- 2 Calvert Vaux Park
- 3 Kaiser Park
- 4 Home Depot public park and walkway with seating

➤ Boat Access

- 5 Private boat dock at Marlen Gas Station (Neptune Ave & W 20th Street)



1) Coney Island Park



2) Calvert Vaux Park



5) Marlen Gas Station
Private Dock



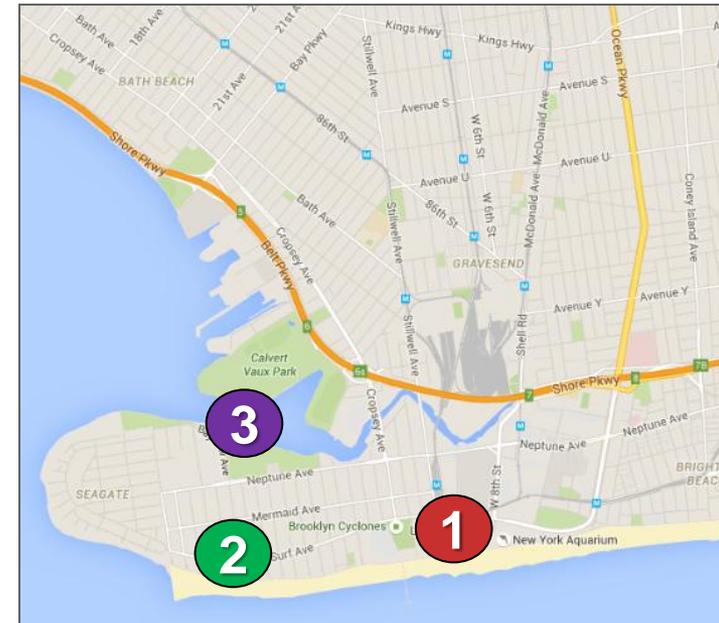
1) Coney Island Re-Zoning

- **Coney Island West:** re-zone for residential uses with ground-floor retail
- **Coney Island North:** re-zone for residential uses with ground-floor retail
- **Coney Island East:** amusement and entertainment district (hotels, restaurants, retail, etc.)



2) Ocean Dreams Towers

- Three residential towers with 500 condos
- 25,000 square feet of retail and 400 parking spaces



3) Coney Island Creek Resiliency Study

- Conduct robust technical analysis of large-scale tidal barrier and wetlands
- Identify measures to provide near-term flood protection
- Recommend comprehensive flood protection plan

CLASS I

Boating/Fishing

The best usages of Class I waters are **secondary contact** recreation and fishing. These waters shall be suitable for fish, shellfish and wildlife propagation and survival.

Dissolved Oxygen (mg/L)	Fecal Coliform (col/100 mL)	Total Coliform (col/100 mL)
≥ 4.0	≤ 2,000* (Monthly GM)	≤ 10,000 (Monthly GM)



***Note:** New rulemaking is proposed by DEC for primary contact criteria for Class I and Class SD of ≤ 200 col/100 ml for Fecal Coliform.

Coney Island Creek Drainage Area

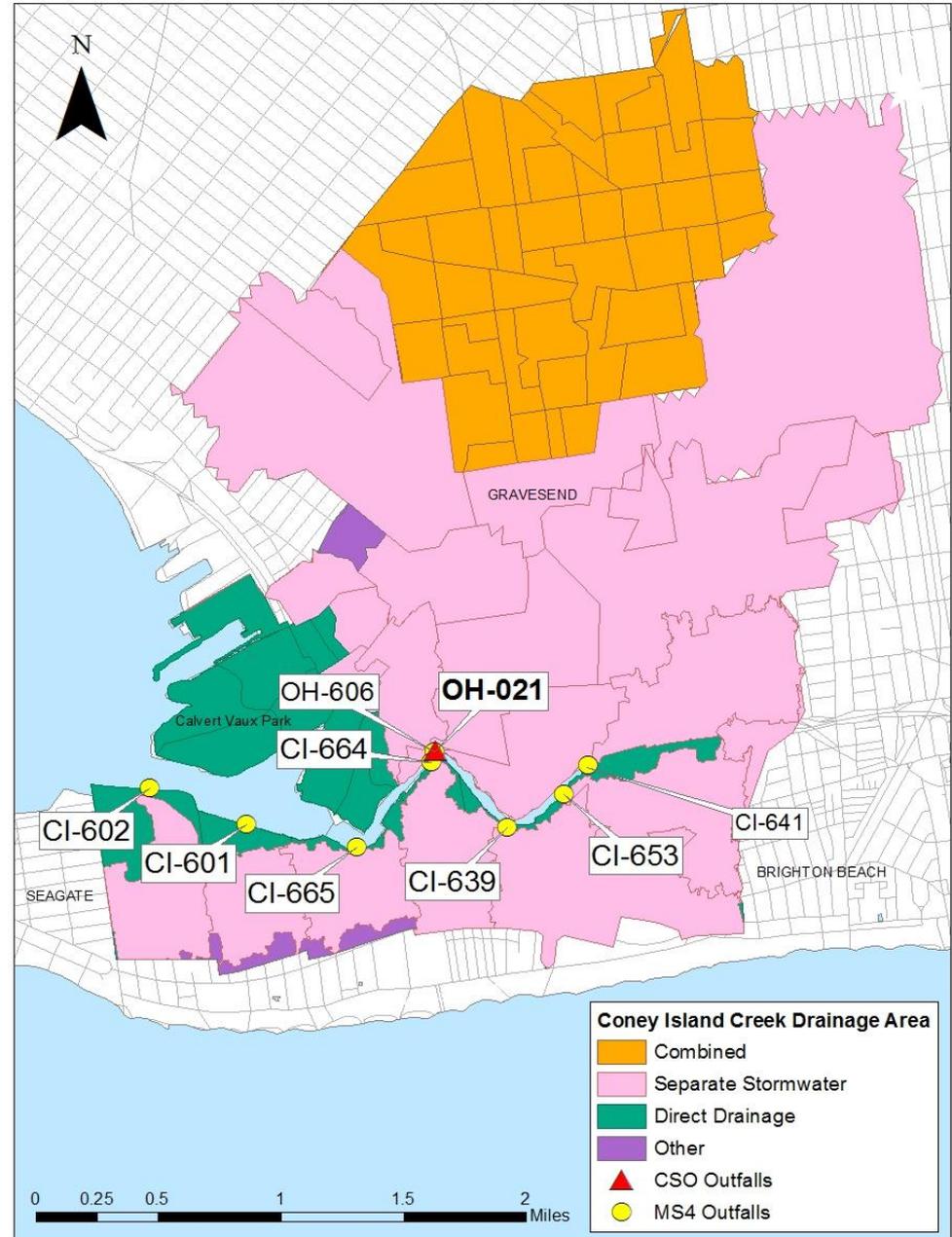
➤ Annual Wet-Weather Discharge Volume:

- ~1,740 million gallons (MG)
(typical year pre-WWFP)
- 235 MG CSO (14%)
- 1,505 MG Direct Drainage
and Stormwater (86%)

➤ Sewer System:

- 1 CSO Outfalls (▲)
- 8 MS4 Outfalls (●)

Drainage Area	
Acres	3,470
Served by Combined Sewers	24%



Sampling Locations

GOAL

Assess attainment of Primary Contact Fecal Coliform criteria
and understand the Entero attainment

LTCP Sampling:

▲ CSO Outfall Pipe

- 1 location
(Regulator upstream of
Avenue V Pump Station)

● Receiving Water Sampling

- 7 location (C1 to C7)
(Sampled on day of video
recording of CIC)

Other Sampling Programs:

▲ Harbor Survey Monitoring

- 2 locations (CIC2, CIC3)

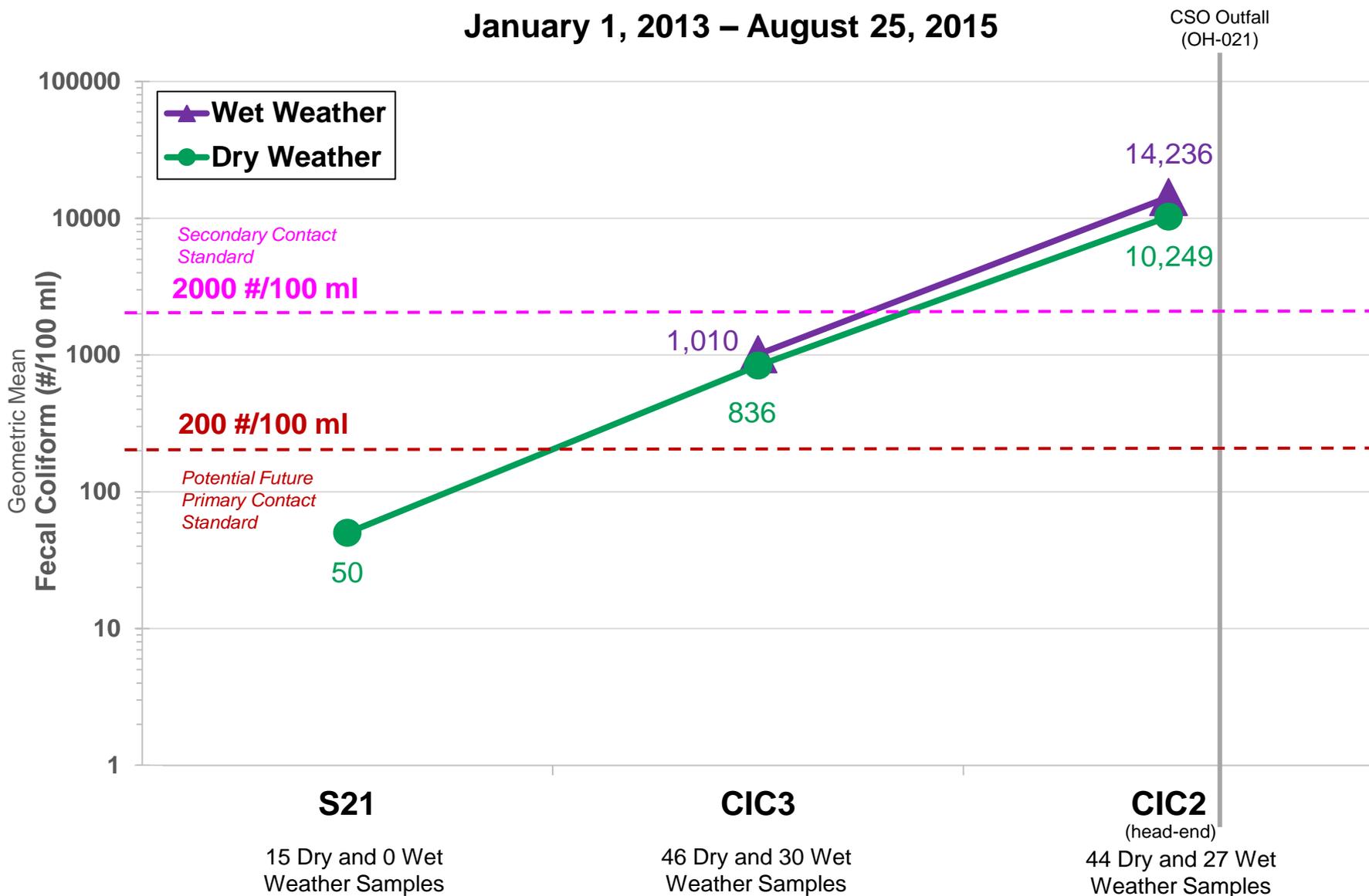
■ Sentinel Monitoring

- 1 location (S21)



Fecal Coliform Results

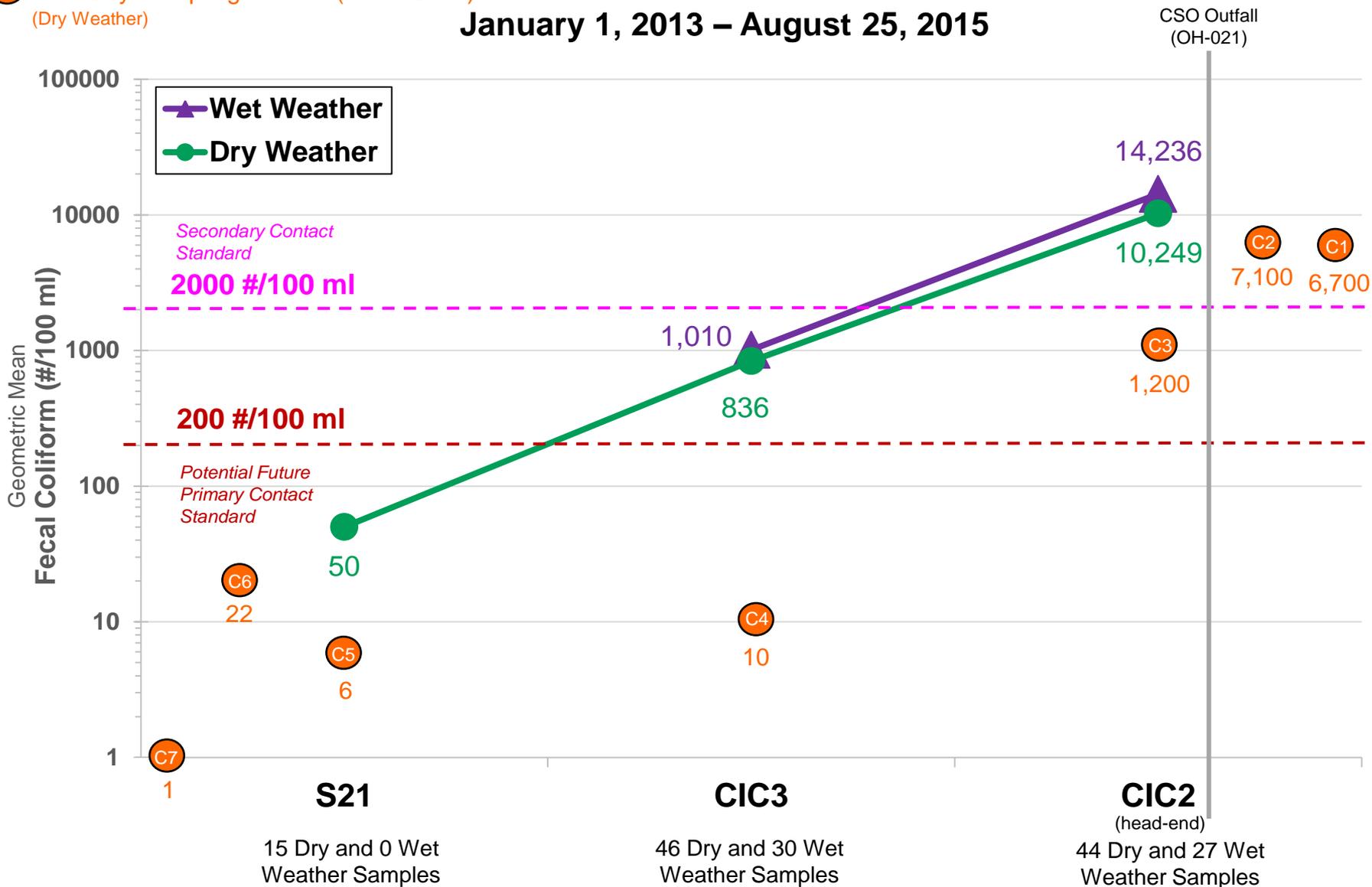
January 1, 2013 – August 25, 2015



Fecal Coliform Results

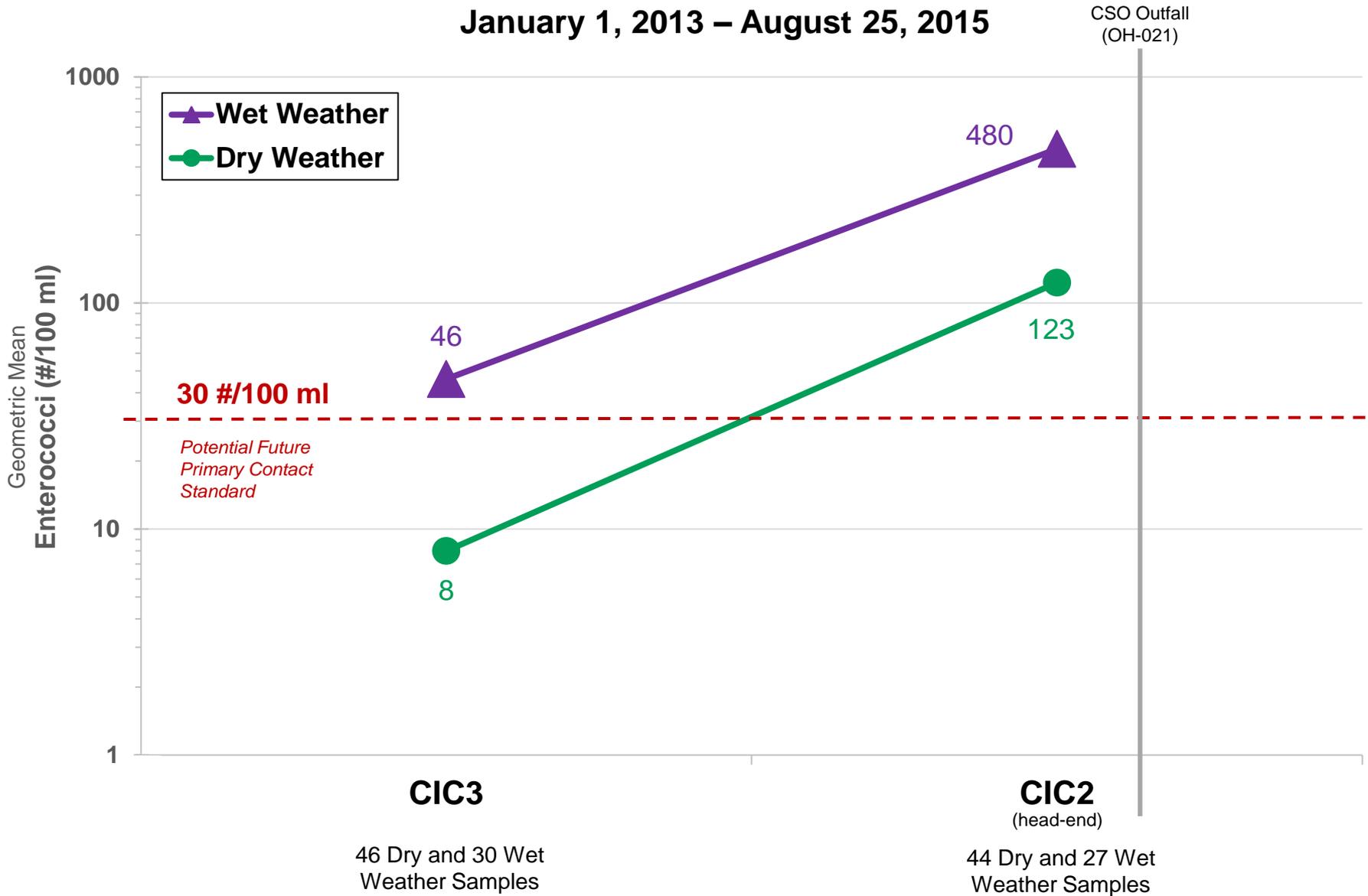
One Day Sampling Results (10/19/2015)
(Dry Weather)

January 1, 2013 – August 25, 2015



Enterococci Results

January 1, 2013 – August 25, 2015

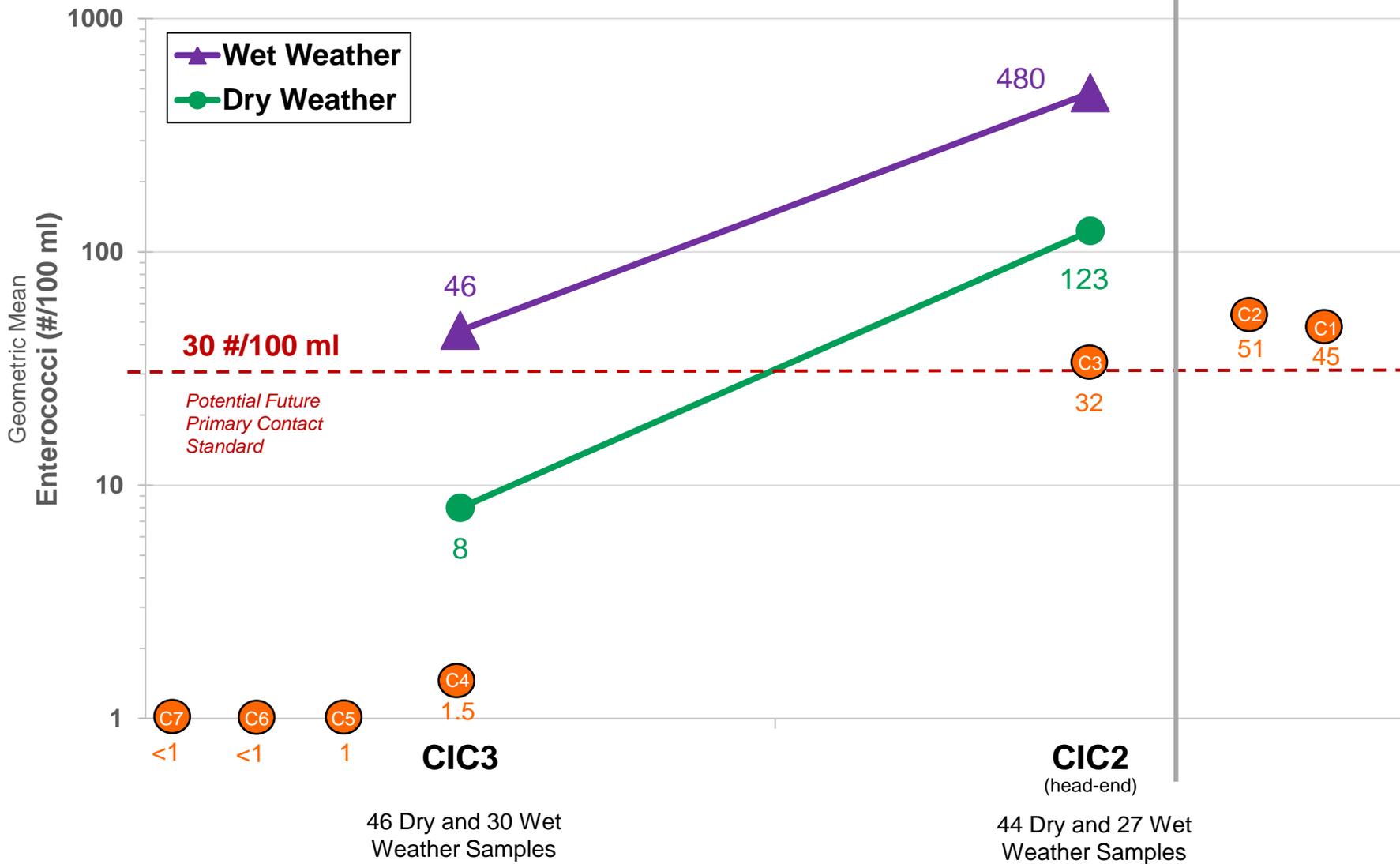


Enterococci Results

One Day Sampling Results (10/19/2015)
(Dry Weather)

January 1, 2013 – August 25, 2015

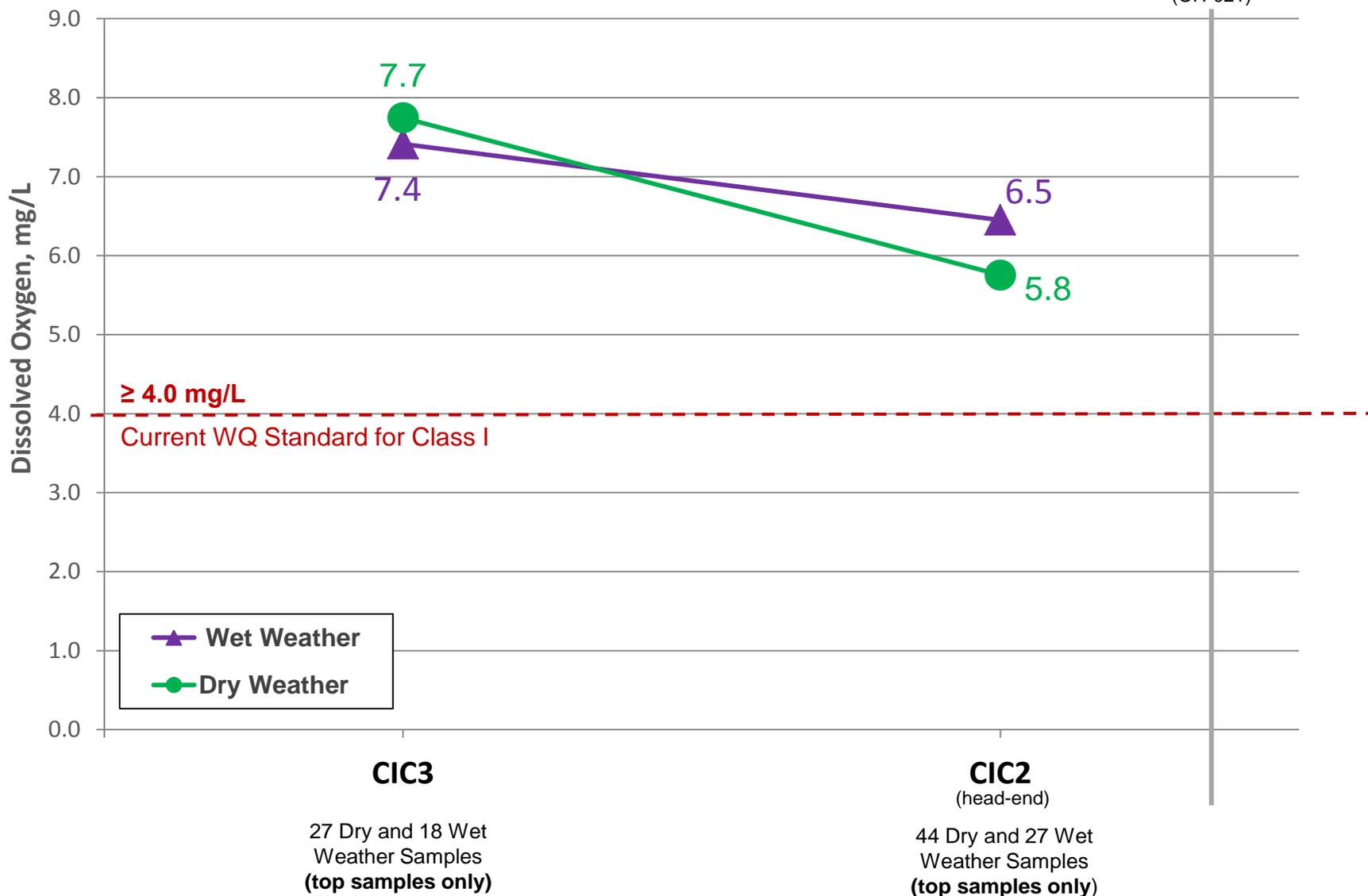
CSO Outfall
(OH-021)



Dissolved Oxygen Results

January 1, 2013 – August 25, 2015

CSO Outfall
(OH-021)



Questions?

Water Quality Improvement Projects

Grey and Green Infrastructure

Jim Mueller, P.E.
Assistant Commissioner
DEP

Angela Licata
Deputy Commissioner
DEP

- **1890s:** **Coney Island WWTP** placed into service as one of NYC's first treatment plants to help protect the City's beaches
- **1930s:** Upgraded from chlorine disinfection to primary treatment.
- **1980s:** Upgraded again to a secondary treatment plant to comply with the Clean Water Act (CWA)
- Current plant capacity = 110 MGD (220 MGD in wet weather)
- Population served ≈ 600,000
- Drainage area served ≈ 15,000 acres
- Design is currently in progress to upgrade the facility to remove Nitrogen



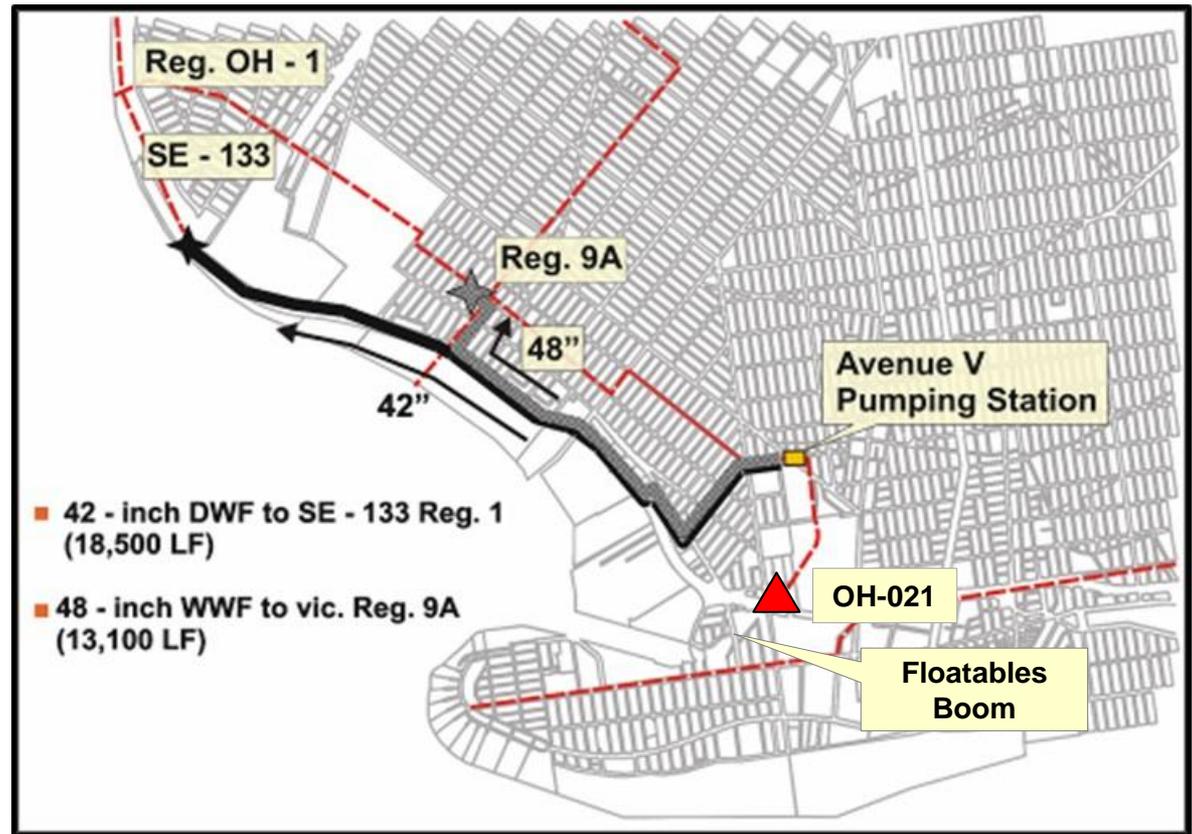
Grey Infrastructure: Avenue V Pumping Station

2016 ACEC New York Platinum Award

Facility is also eligible for Listing on the State Register for Historical Places



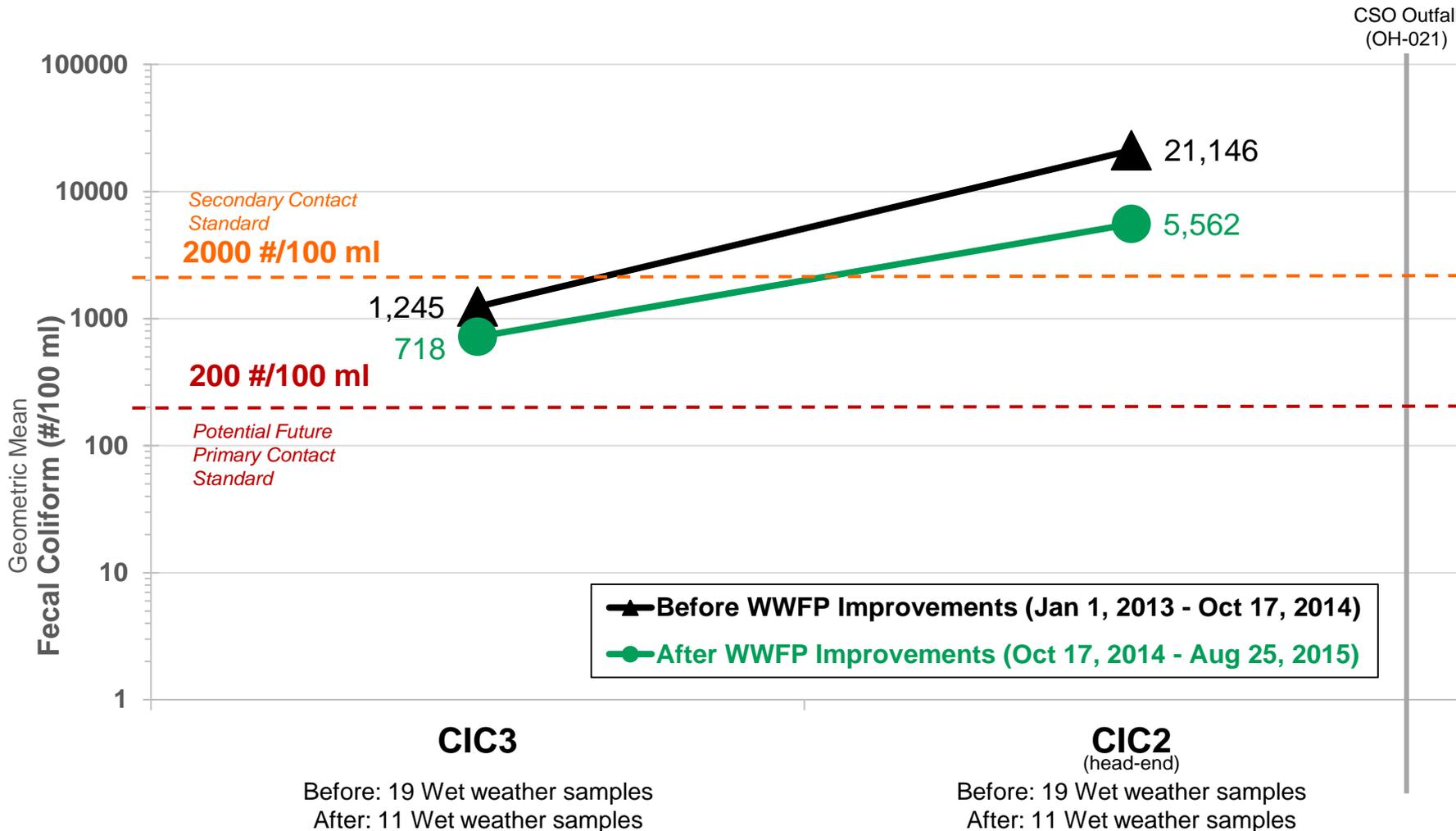
- Avenue V Pumping Station upgrade from 30 MGD to 80 MGD
- 42" DW and 48" WW force mains to convey wet weather additional flows away from Coney Island Creek
- Floatables boom with periodic skimming



Upgraded Pump Station Operational: October 17, 2014

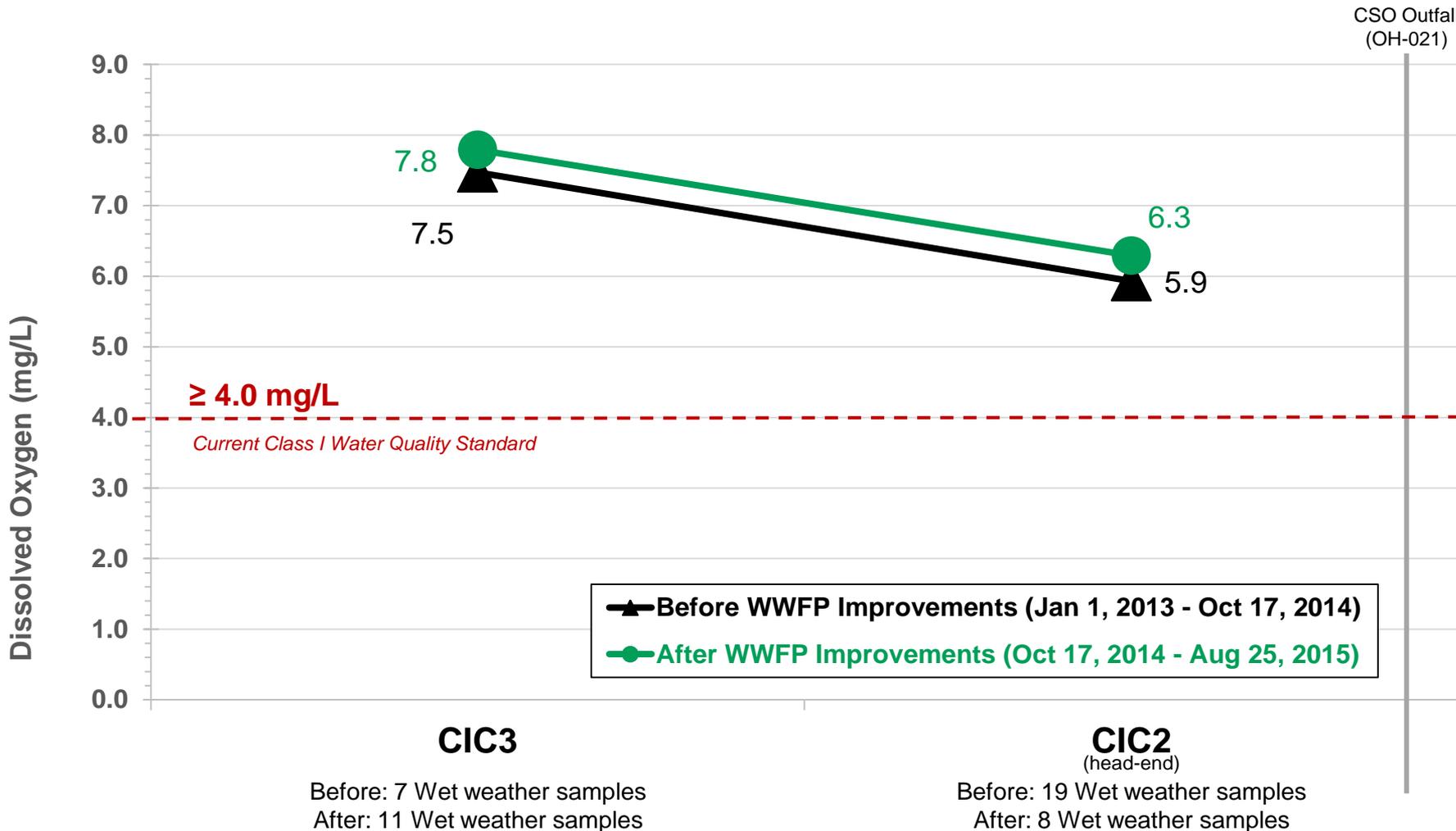
Total Construction Cost = \$196 Million

Improvement in Wet Weather Fecal Coliform Levels



 **Reduced Fecal Coliform Levels** through Implementation of Waterbody/Watershed Facility Plan Recommendations

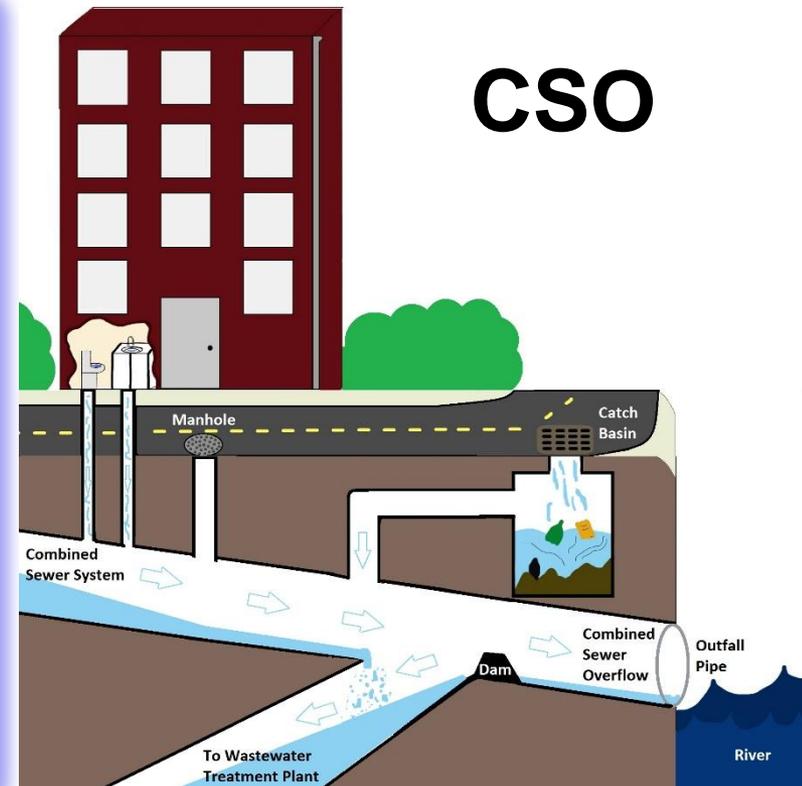
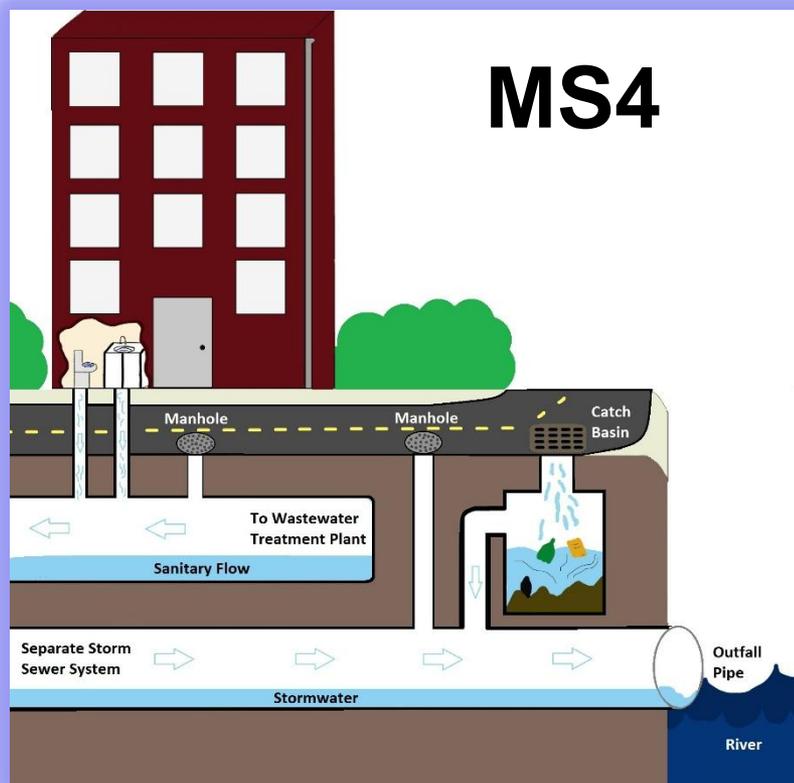
Improvement in Wet Weather DO Levels



 **Increased DO Levels** through
Implementation of Waterbody/Watershed Facility Plan Recommendations

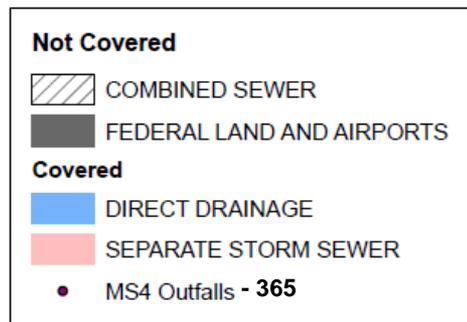
What is an MS4:

- a conveyance or system of conveyances;
- system that is owned by a state, city, town, village, or other public entity that discharges to waters of the US;
- designed or used to collect or convey stormwater (including storm drains, pipes, ditches, etc.);
- not a combined sewer; and
- not part of a Publicly Owned Treatment Works (sewage treatment plant).

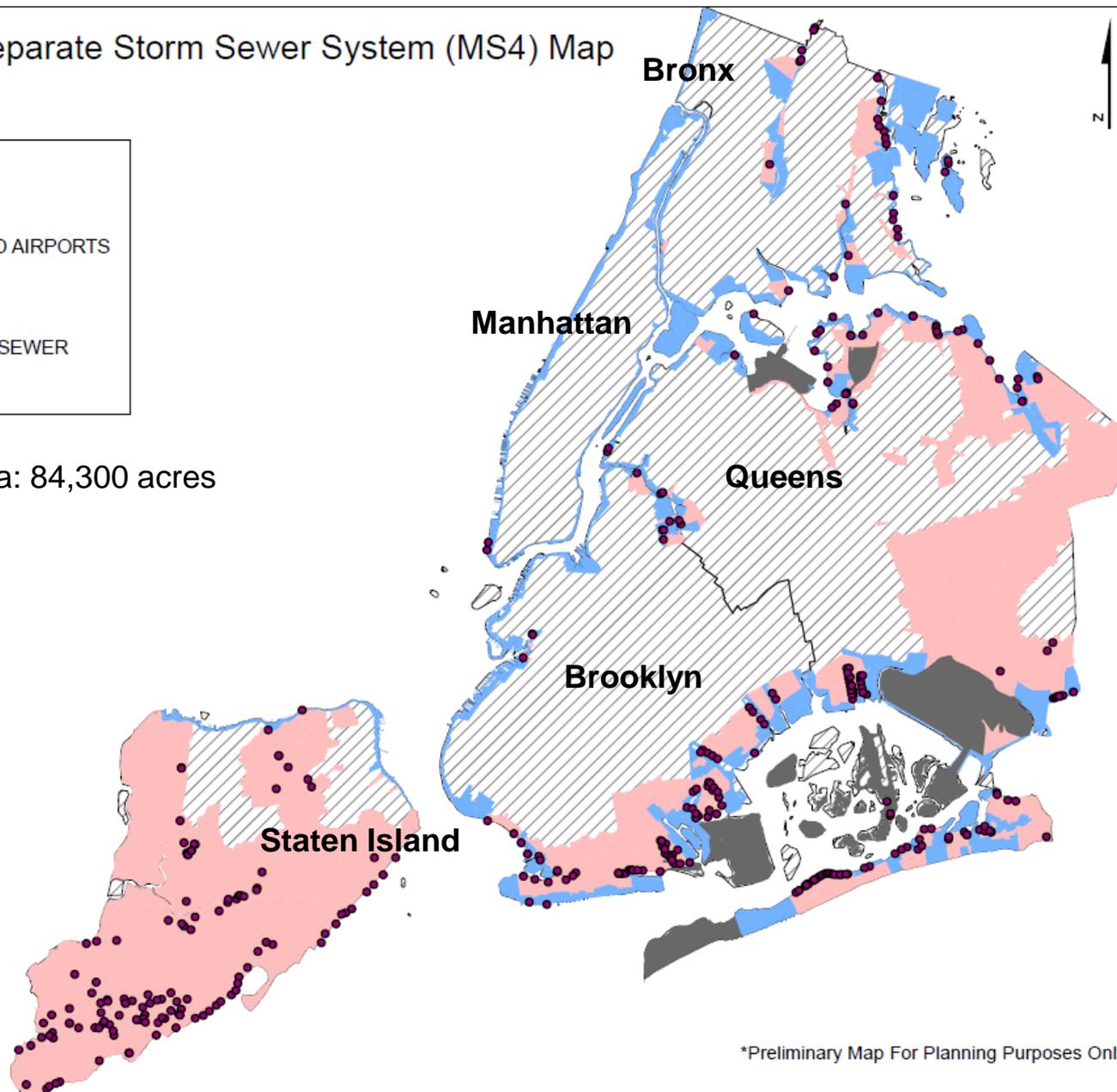


Affected Areas of NYC under MS4 Permit

Draft Municipal Separate Storm Sewer System (MS4) Map

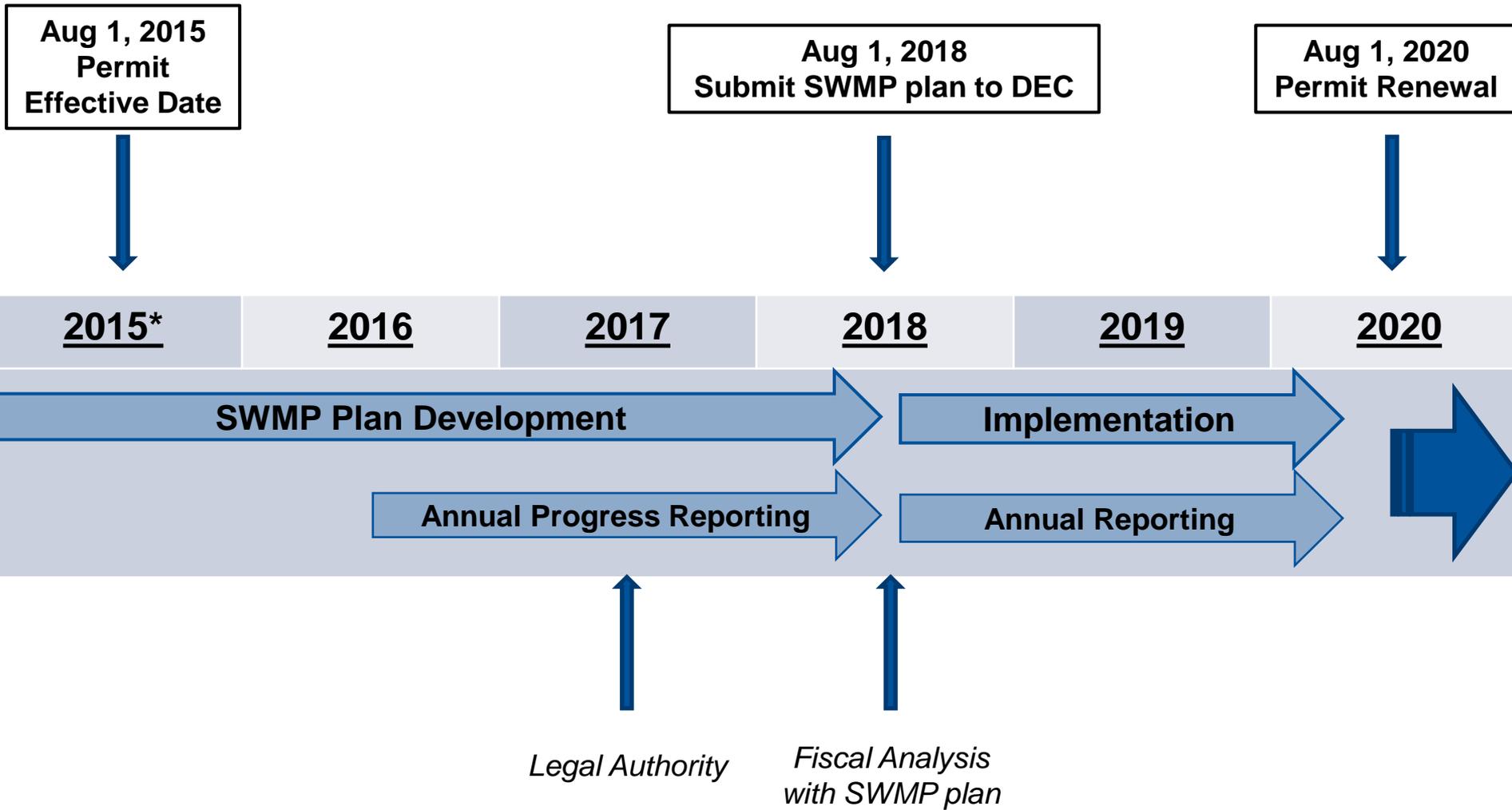


MS4 drainage area: 84,300 acres
40% of the City



*Preliminary Map For Planning Purposes Only

MS4 Permit Timeline



* - Calendar years

Requirements for Impaired Waters with Approved LTCPs

- Identify MS4 priority waterbodies
 - Waterbodies where an approved LTCP does not predict compliance with WQ standards and stormwater contributions from MS4 are expected to be a significant contributor
- Categorize sources of pollutants discharging to the MS4 priority waterbodies
- Identify additional or customized non-structural BMPs and a schedule to commence implementation
- Describe opportunities for implementing green infrastructure pilot projects and other structural retrofits

1. Public Education & Outreach
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management
6. Pollution Prevention/Good Housekeeping for Municipal Operations
7. Industrial Stormwater Sources
8. Control of Floatables and Settleable Solids
9. Monitoring and Assessment of Controls
10. Annual Reporting
11. Recordkeeping
12. Fiscal Analysis
13. Mapping

CSO Mitigation Toolbox

INCREASING COMPLEXITY 

INCREASING COST 

System Optimization	Fixed Weir	Parallel Interceptor / Sewer	Bending Weirs Control Gates	Pump Station Expansion
CSO Relocation	Gravity Flow Tipping to Other Watersheds	Pumping Station Modification	Flow Tipping with Conduit/Tunnel and Pumping	
Water Quality / Ecological Enhancement	Floatables Control	Dredging	Dissolved Oxygen Improvement	Flushing Tunnel
Treatment <i>Satellite:</i>	Outfall Disinfection	Retention Treatment Basin (RTB)		High Rate Clarification (HRC)
<i>Centralized:</i>	WWTP Expansion			
Storage	In-System	Shaft	Tank	Tunnel

Questions?

Next Steps

Ibrahim Abdul-Matin
Director of Community Affairs
DEP

- Coney Island Creek LTCP Public Meeting #2, Spring 2016
 - LTCP Submittal to NYSDEC is June 2016

- Public Comments will be accepted for Coney Island Creek through **December 4th, 2015**
 - There will be subsequent comment periods following the alternative and final plan review meetings.

- Comments can be submitted to:
 - New York City DEP at: ltcp@dep.nyc.gov

- Visit the informational tables tonight for handouts and poster boards with detailed information

- Go to www.nyc.gov/dep/ltcp to access:
 - LTCP Public Participation Plan
 - Presentation, handouts and poster boards from this meeting
 - Links to Waterbody/Watershed Facility Plans
 - CSO Order including LTCP Goal Statement
 - NYC's Green Infrastructure Plan
 - Green Infrastructure Pilots 2011 and 2012 Monitoring Results
 - NYC Waterbody Advisory Program
 - Upcoming meeting announcements
 - Other LTCP updates