Environmental Protection

Hutchinson River and Westchester Creek
CSO Long Term Control Plan

Public Meeting #3

Final LTCP Plan Review

PS 71 Rose E Scala
September 16, 2015

Welcome & Introductions

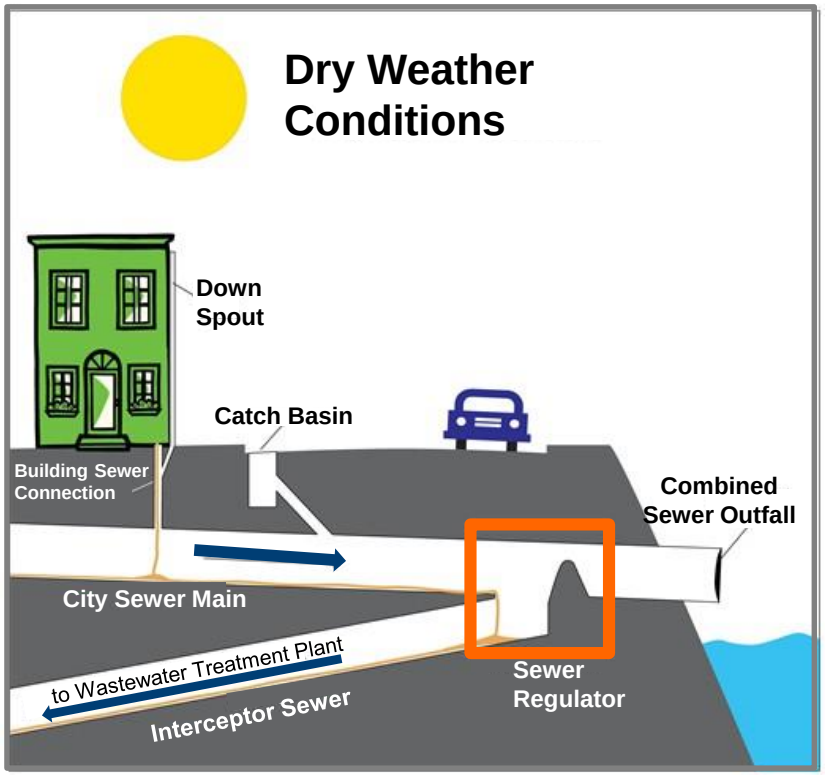
Eric Landau
Associate Commissioner
DEP

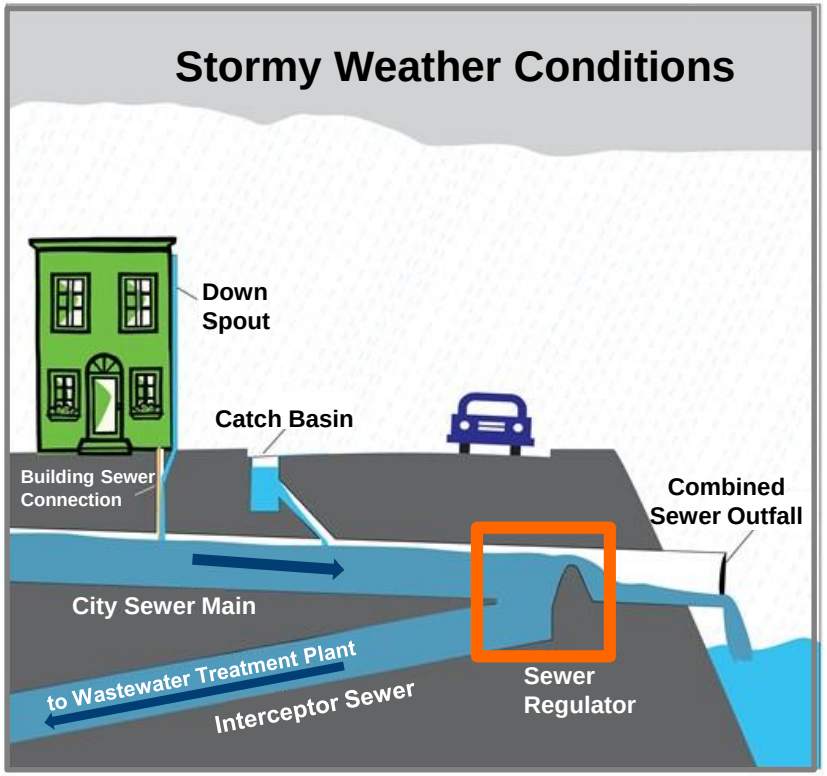
Agenda

	Topic	Speaker
1	**Welcome & Introductions**	Eric Landau
2	**Hutchinson River LTCP**	
	• Summary of Previous Public Meetings	Eric Landau
	• LTCP Proposed Final Recommendations	Jim Mueller
3	**Westchester Creek LTCP**	
	• Summary of Previous Public Meetings	Eric Landau
	• LTCP Proposed Final Recommendations	Jim Mueller
4	**Green Infrastructure**	Angela Licata
5	**Discussion and Q&A Session**	All

What is a Combined Sewer Overflow?

- 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.

What is a LTCP and CSO Consent Order?

Long Term Control Plan (LTCP)

identifies appropriate CSO controls to achieve applicable water quality standards

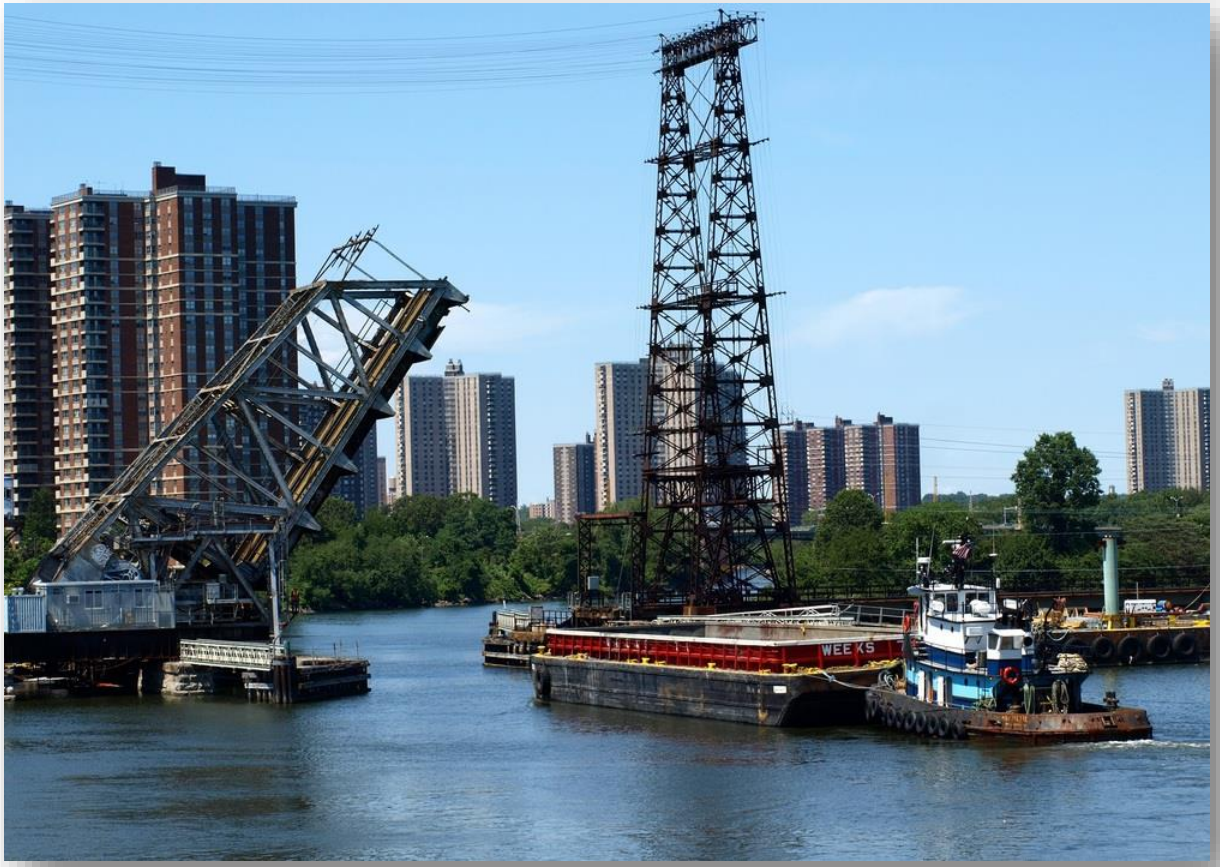
consistent with the Federal CSO Policy and Clean Water Act

CSO Consent Order

an agreement that settles past legal disputes without prolonged litigation

requires DEP to develop LTCPs and mitigate CSOs

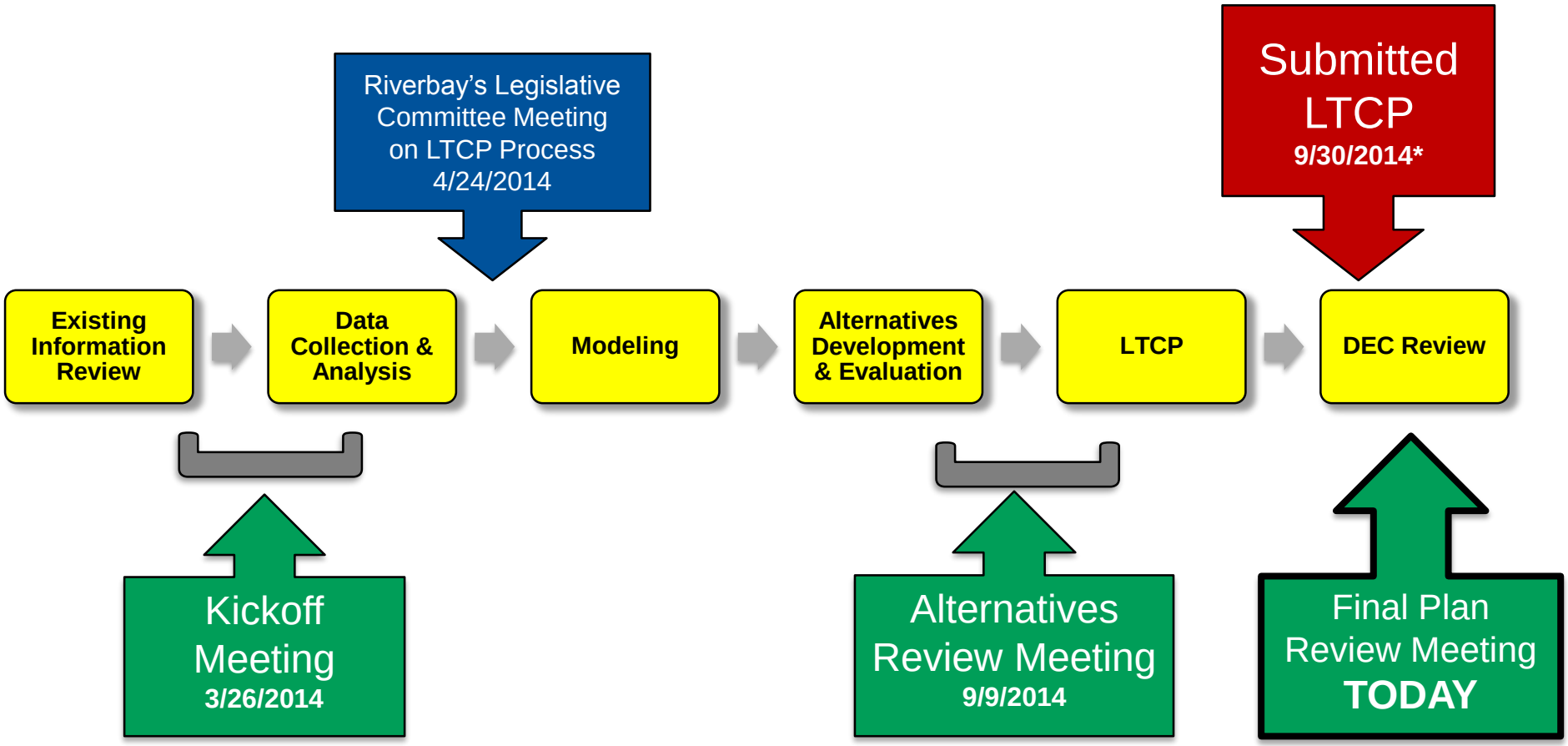
Hutchinson River (HR) LTCP



Summary of Previous HR Public Meetings

Eric Landau
Associate Commissioner
DEP

HR LTCP Process and Public Involvement



ONGOING PUBLIC/STAKEHOLDER INPUT

*DEP submitted supplemental documentation to DEC on 4/14/2015 and 8/7/2015 in response to their comments.

HR Public Meeting #1 – Summary

Date:	March 26, 2014
Location:	Harry S. Truman High School
# Attendees:	15

Presented on:

- Waterbody/Watershed Characteristics
- Current Uses
- Water Quality Sampling Results

Bacteria	Dry Weather (GM, #/100 mL)	Wet Weather (GM, #/100 mL)
Fecal Coliform	53 – 670	95 – 773
Enterococci	17 – 38	26 – 207

- Green Infrastructure Projects
  - Edenwald Houses
  - Neighborhood Demonstration Area
  - Area-Wide Contracts with DDC

HR Public Meeting #2 – Summary

Date:	September 9, 2014
Location:	Co-Op City Community Center
# Attendees:	15

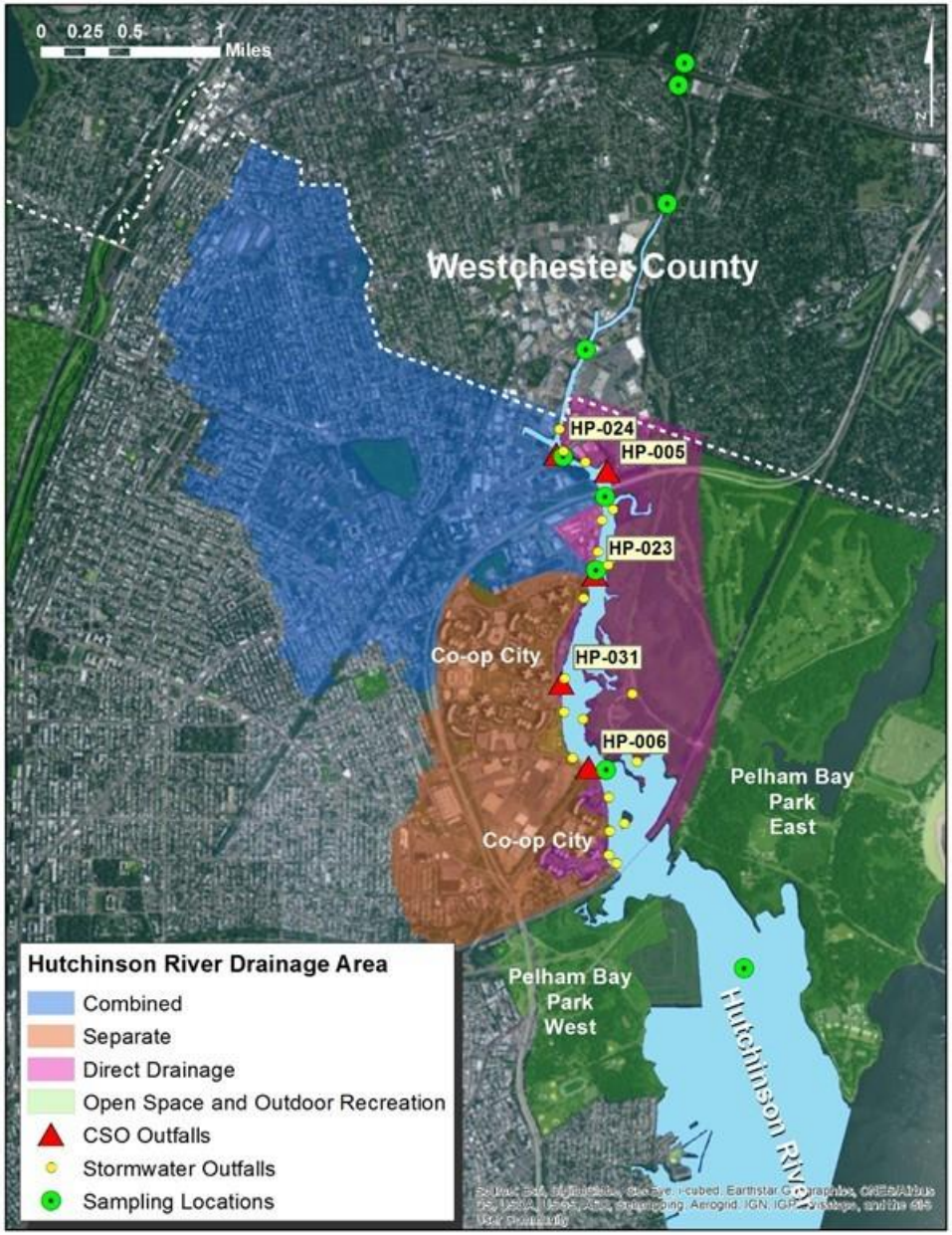
Presented on:

- Brief Recap of Meeting #1
- Water Quality Attainment
  - Current Class SB: Non-attainment
  - Future Entero: Non-attainment
- Modeling
  - Minimal improvement with 100% CSO Control
  - Significant bacteria loading contribution from Westchester County
- Comparison of Key Alternatives

HR LTCP Proposed Final Recommendations

Jim Mueller, P.E.
Assistant Commissioner
DEP

Hutchinson River NYC Drainage Area



- Begins in Westchester County, flows through the Bronx into Eastchester Bay Tributary to East River
- Total NYC watershed drainage area is approximately 2,795 acres
  - 53% served by combined sewer
- Classified by New York State DEC for primary contact recreation:
  - **Class SB** – Bathing and Fishing
- Land Use (breakdown for NYC):
  - 43 % Residential
  - 30 % Open Space
  - 10 % Public Facilities
- DEP wet weather discharges include:
  - 5 CSO Outfalls
  - 18 Stormwater Outfalls

Hutchinson River CSO Mitigation Options

INCREASING COMPLEXITY

INCREASING COST

System Optimization	Fixed Weir	Parallel Interceptor / Sewer	Inflatable Dams 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 *Satellite:*	**Outfall Disinfection**	**Retention Treatment Basin (RTB) with Disinfection**		High Rate Clarification (HRC)
Centralized:	WWTP Expansion			
Storage	In-System	Shaft	**Tank**	**Tunnel**

Preferred Alternative

= Floatables Control & Outfall Disinfection *(See Next Slide)*

Hutchinson River Preferred Alternative

Divert flow to Outfall HP-024 Extension, Provide Floatables Control, and Disinfect 50 MGD in Recreational Season*

➢ Benefits:

- Reduces bacteria load to river from seasonal disinfection
- Provides floatables control
- Utilizes gravity, no effluent pumping
- No construction of costly retention tank

➢ Challenges:

- Solids deposition in outfall
- Permitting of new outfall
- Impact on MTA bus facilities during construction
- Site acquisition for disinfection facility and soil contamination

➢ Est. Construction Cost / Annual O&M

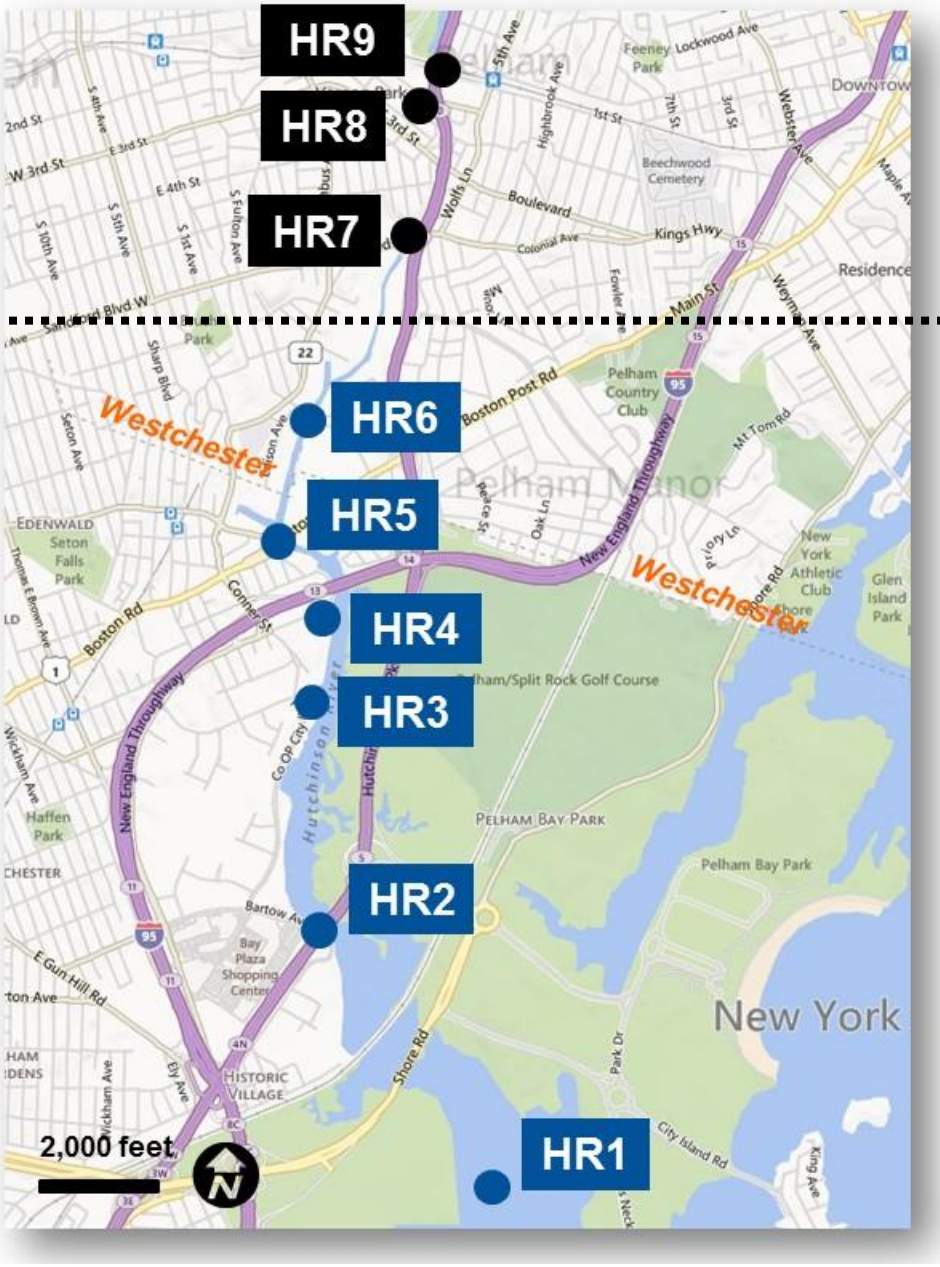
- **$90 Million / $1.25 Million**

*Recreational Season is from May 1st through October 31st

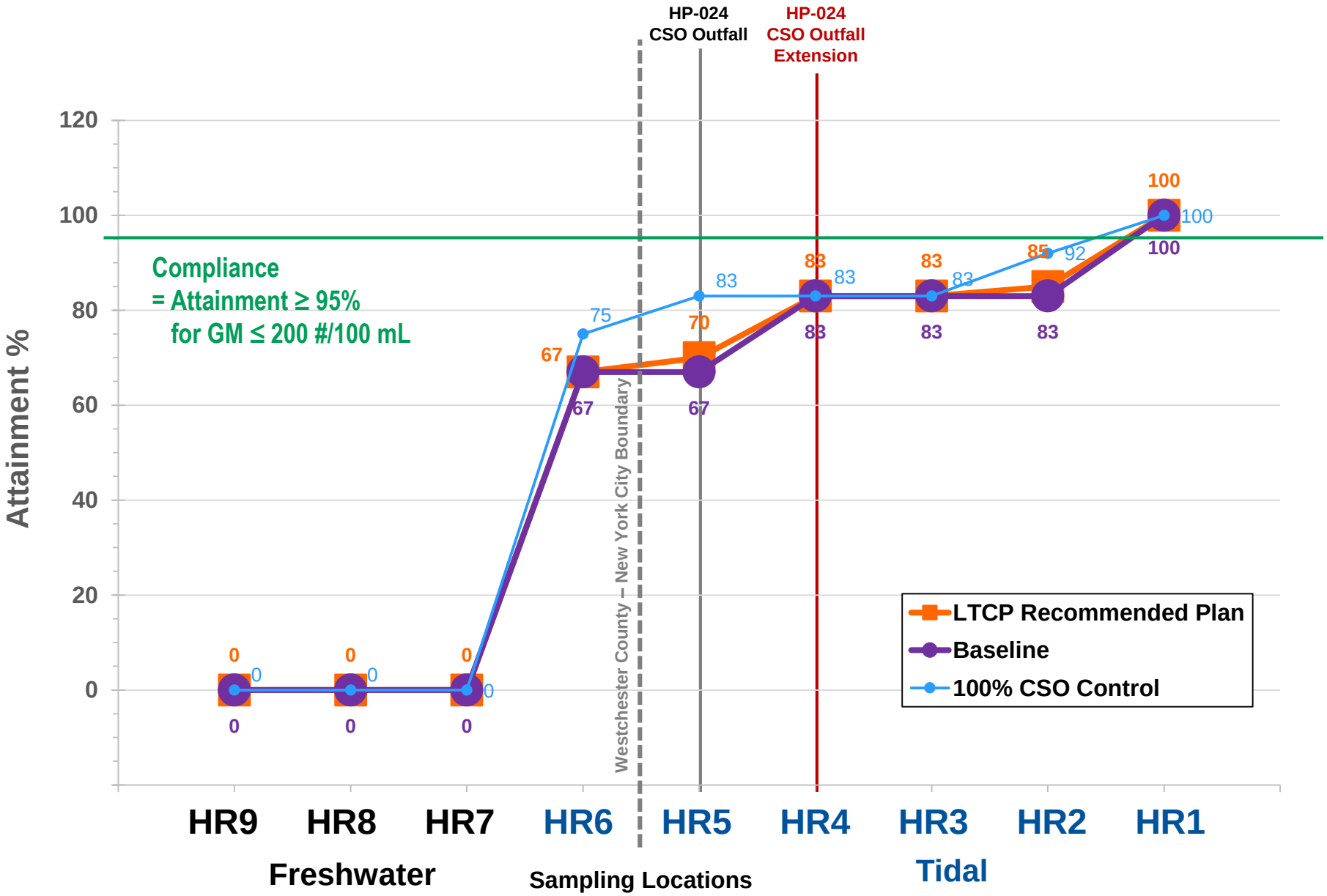
Hutchinson River Sampling Locations

Freshwater Section

Tidal Section

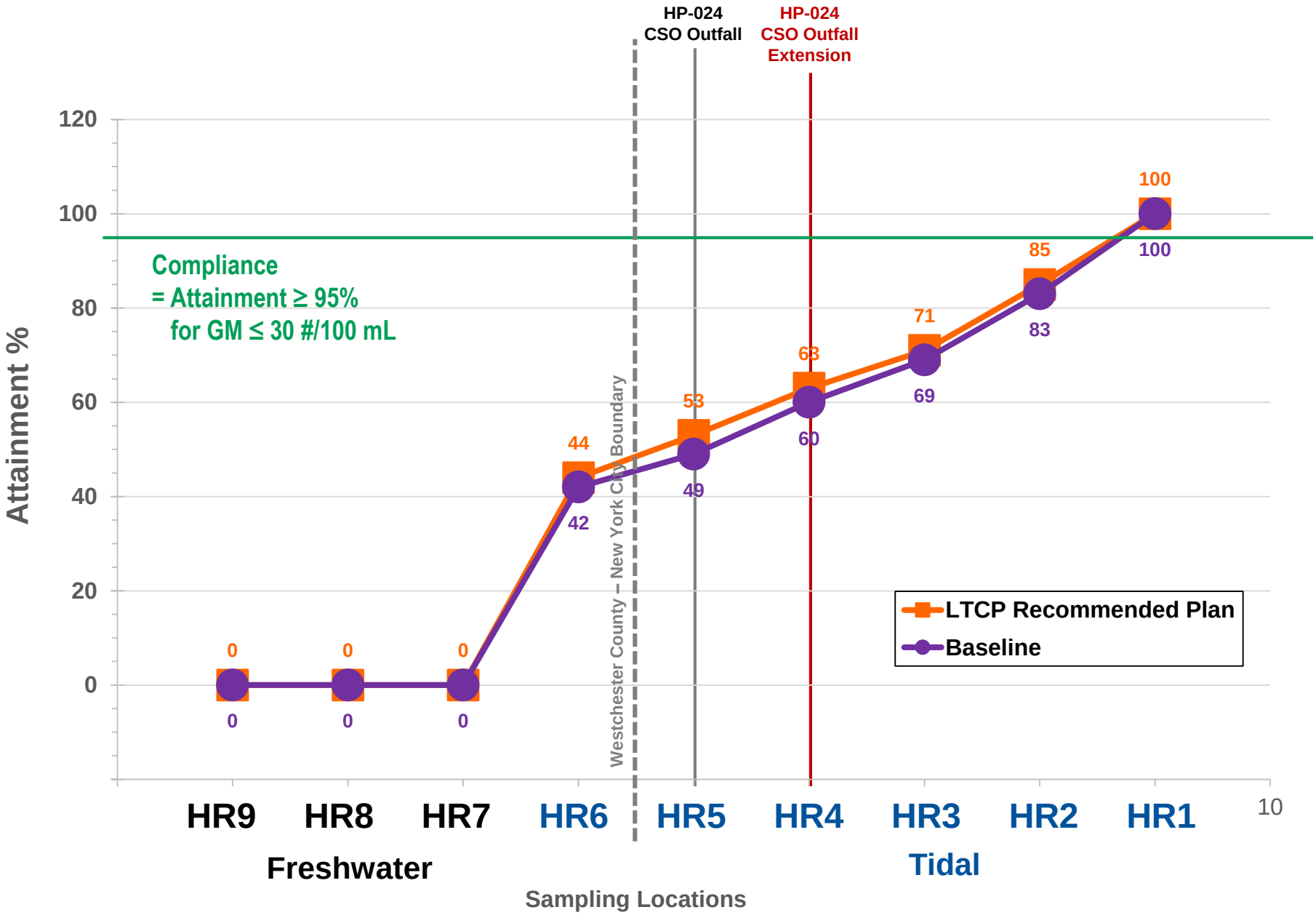


Projected Annual Fecal Coliform Attainment



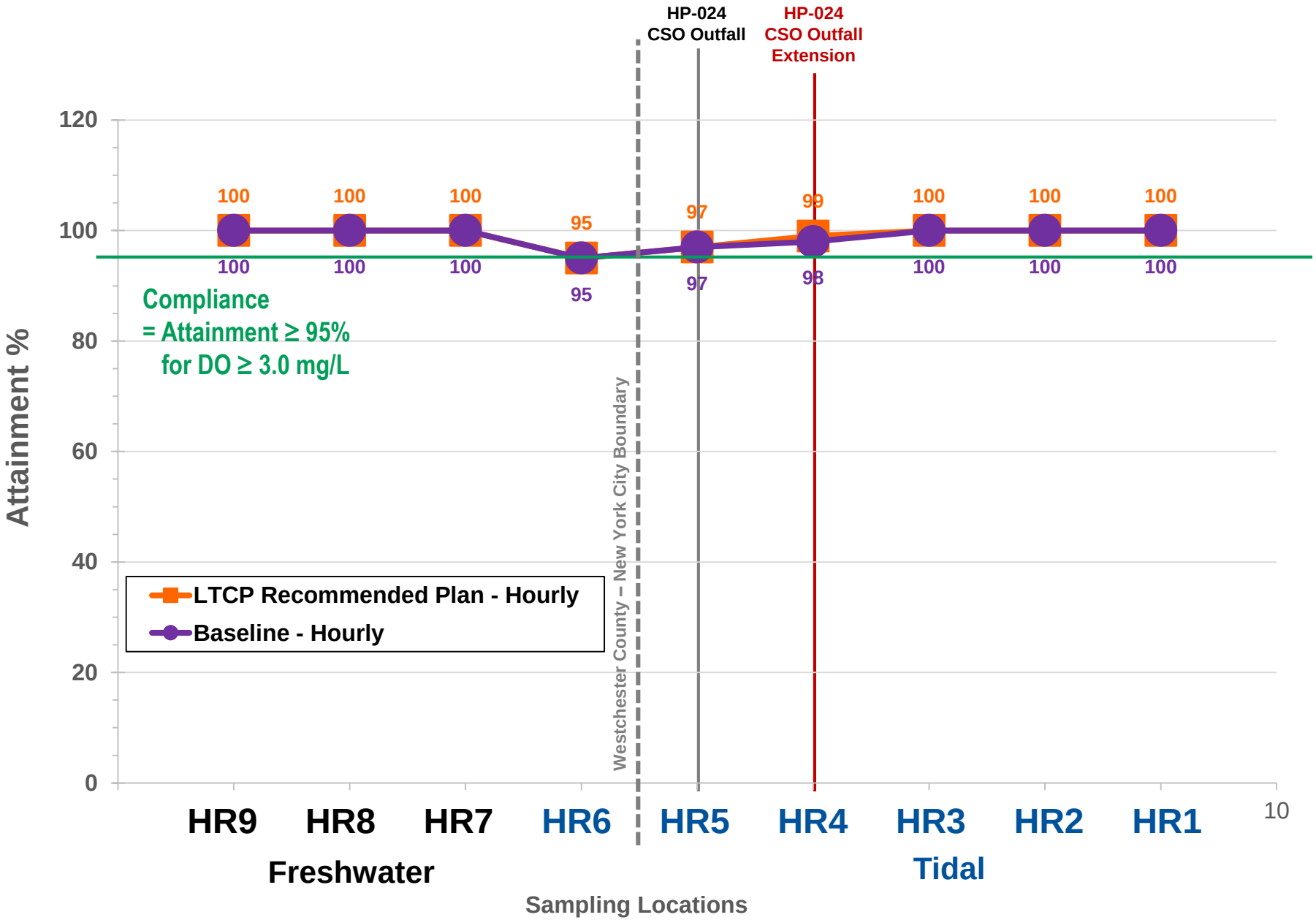
*Projections based on 2008 average rainfall year

Projected Annual Enterococcus Attainment



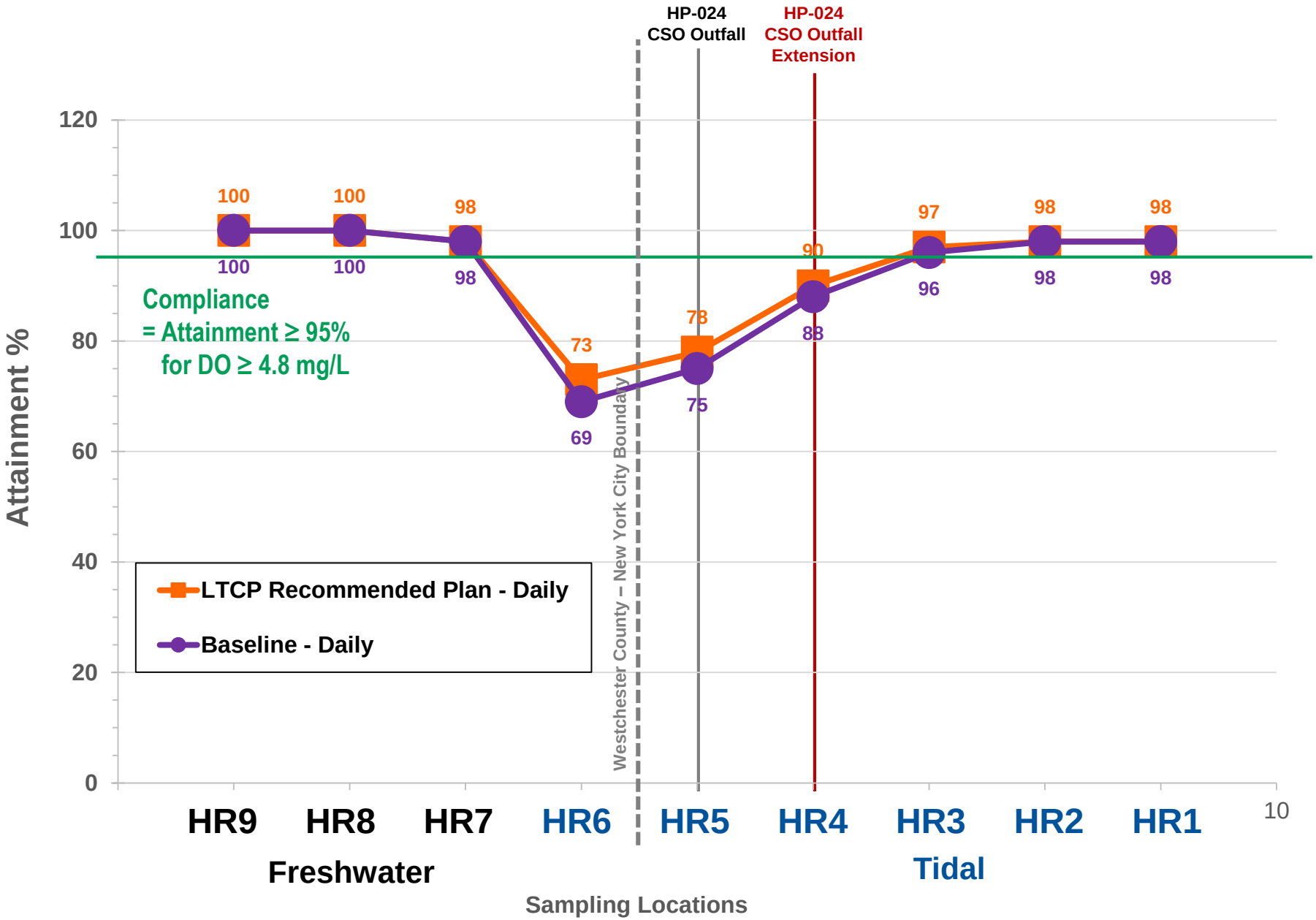
*Projections based on 2008 average rainfall year

Projected Annual Dissolved Oxygen Attainment



*Projections based on 2008 average rainfall year

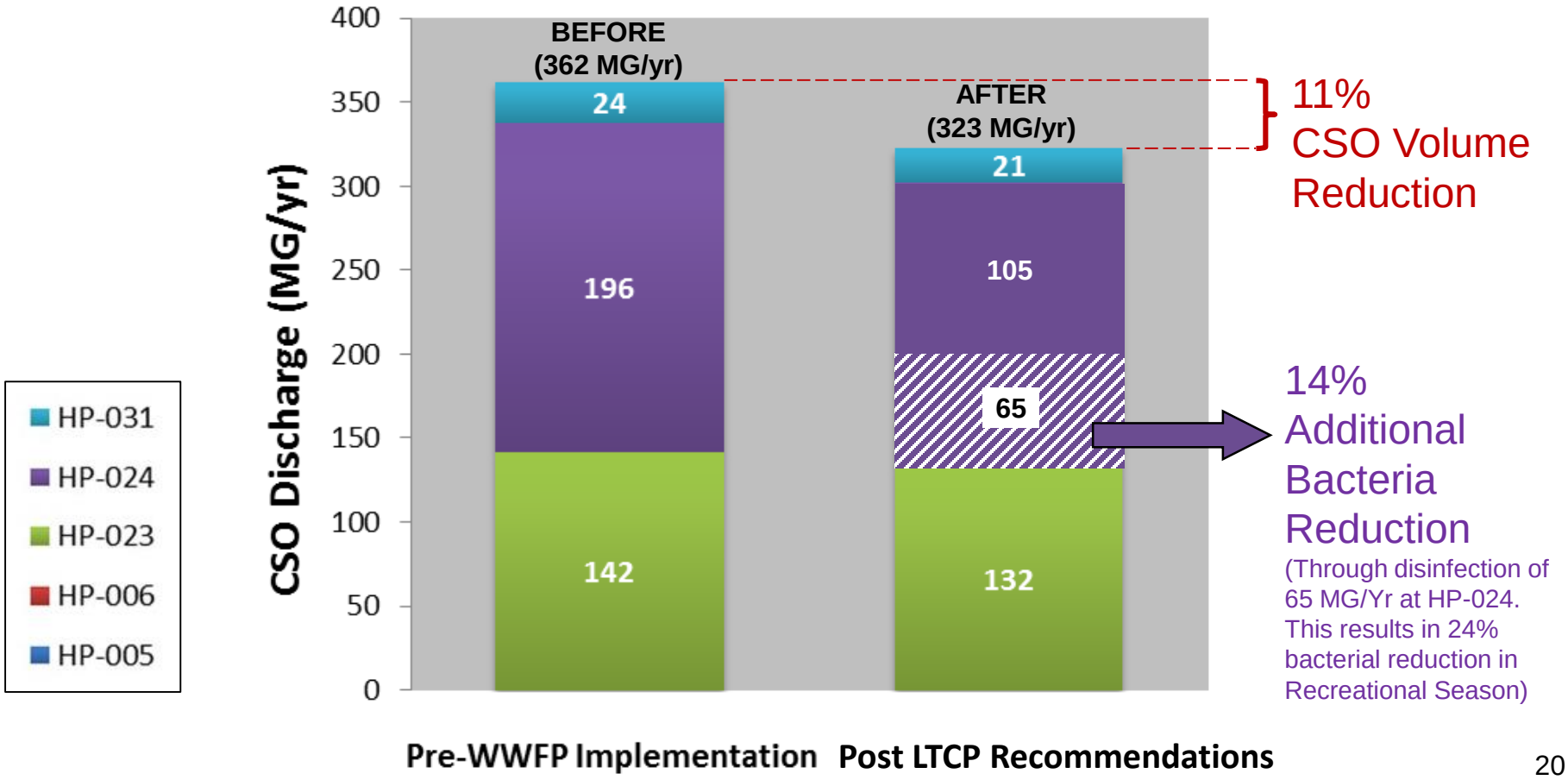
Projected Annual Dissolved Oxygen Attainment



*Projections based on 2008 average rainfall year

HR Resulting Water Quality Improvements

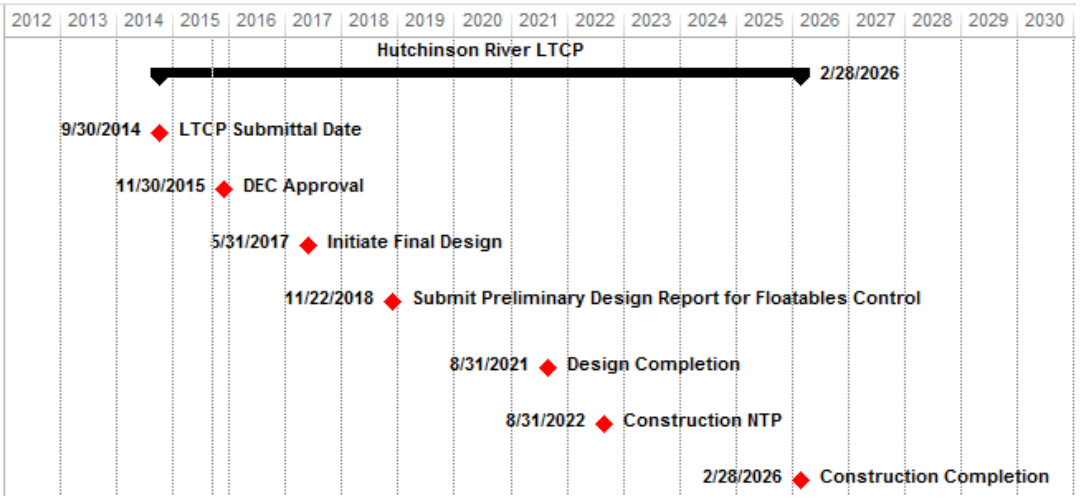
- CSO **Volume** Reduction: **11% annual volume reduction** through planned Green Infrastructure implementation
- CSO **Bacteria** Reduction: **14% additional annual bacteria reduction** through disinfection of Outfall HP-024 Extension during recreational season (May 1st to Oct. 31st)



HR Tentative Implementation Schedule

- Per constructability reviews and recent DEC Technical Meeting on Sept. 3rd, 2015:

Task Name	Start	Finish
Hutchinson River LTCP	**Tue 9/30/14**	**Sat 2/28/26**
LTCP Submittal Date	Tue 9/30/14	Tue 9/30/14
DEC Approval	Mon 11/30/15	Mon 11/30/15
Initiate Final Design	Wed 5/31/17	Wed 5/31/17
Submit Preliminary Design Report for Floatables Control	Thu 11/22/18	Thu 11/22/18
Design Completion	Tue 8/31/21	Tue 8/31/21
Construction NTP	Wed 8/31/22	Wed 8/31/22
Construction Completion	Sat 2/28/26	Sat 2/28/26



HR LTCP Proposed Final Recommendations

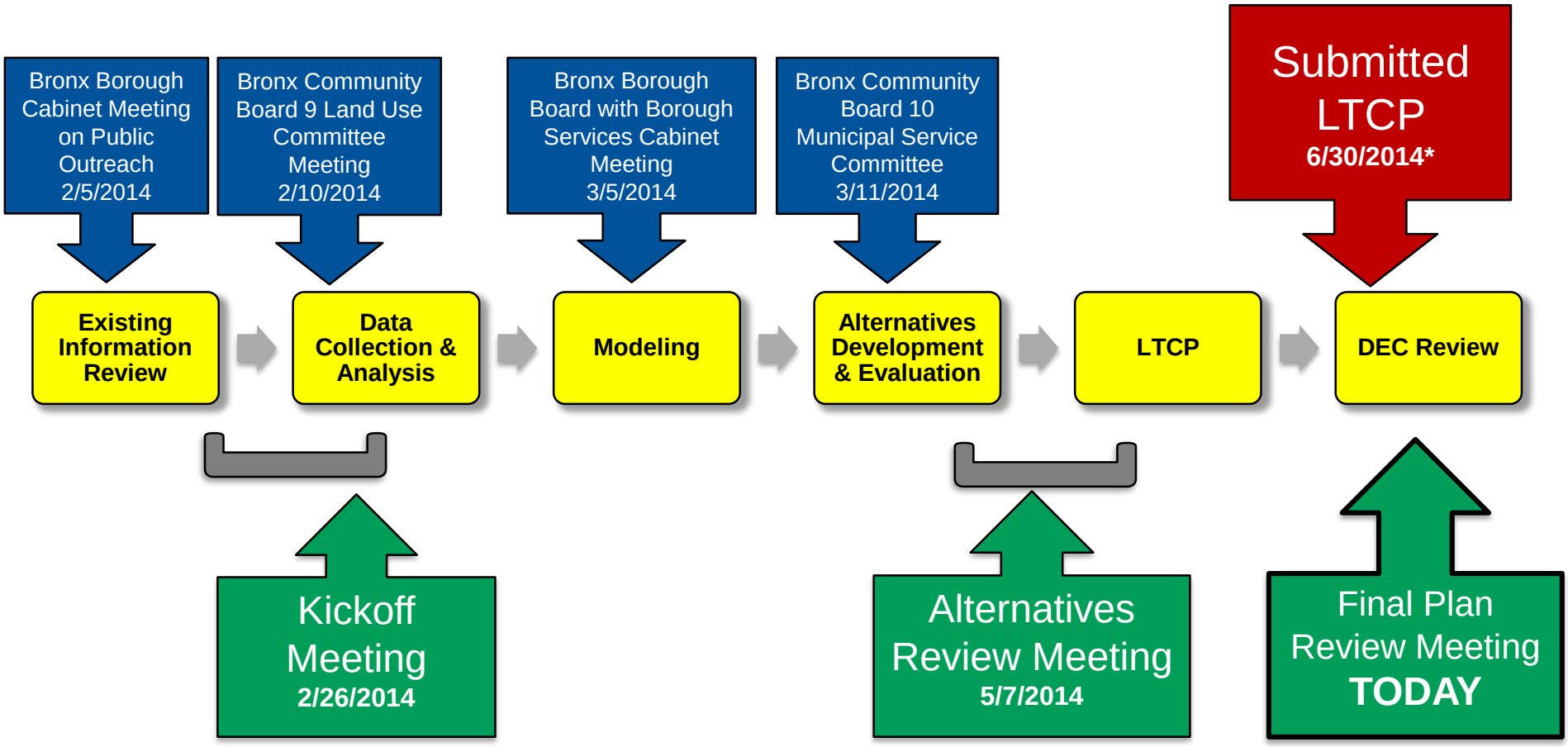
- Continue to implement Green Infrastructure Program
- Implement Preferred Alternative
  - Outfall Disinfection & Floatables Control
- Initiate post-construction compliance monitoring
- Perform a Use Attainability Analysis (UAA) addressing non-compliance
- Establish a wet-weather advisory during the recreational season (May 1st – Oct 31st)

Westchester Creek (WC) LTCP

Summary of Previous WC Public Meetings

Eric Landau
Associate Commissioner
DEP

WC LTCP Process and Public Involvement



ONGOING PUBLIC/STAKEHOLDER INPUT

*DEP submitted supplemental documentation to DEC on 4/14/2015 in response to their comments.

WC Public Meeting #1 – Summary

Date:	February 26, 2014
Location:	JHS 125 Henry Hudson School
# Attendees:	10

Presented on:

- Waterbody/Watershed Characteristics
- Current Uses
- Water Quality Sampling Results

Bacteria	Dry Weather (GM, #/100 mL)	All Weather (GM, #/100 mL)
Fecal Coliform	5 – 97	23 – 559
Enterococci	4 – 74	12 – 460

- Current WQ Improvement Projects
  - Weir Modification to Regulators CSO 29A/29
  - Pugsley Parallel Sewer
  - Green Infrastructure

WC Public Meeting #2 – Summary

Date:	May 7, 2014
Location:	Herbert Lehman High School
# Attendees:	10

Presented on:

- Brief Recap of Meeting #1
- Water Quality Attainment
  - Current Class I: Full Fecal attainment
  - Primary Contact: Full Fecal attainment during Recreational Season* and high-level of Annual Fecal attainment
- Modeling
  - Minimal improvement with 100% CSO Control
  - East River and stormwater inputs limit reaching full Class SB attainment
- Comparison of Key Alternatives

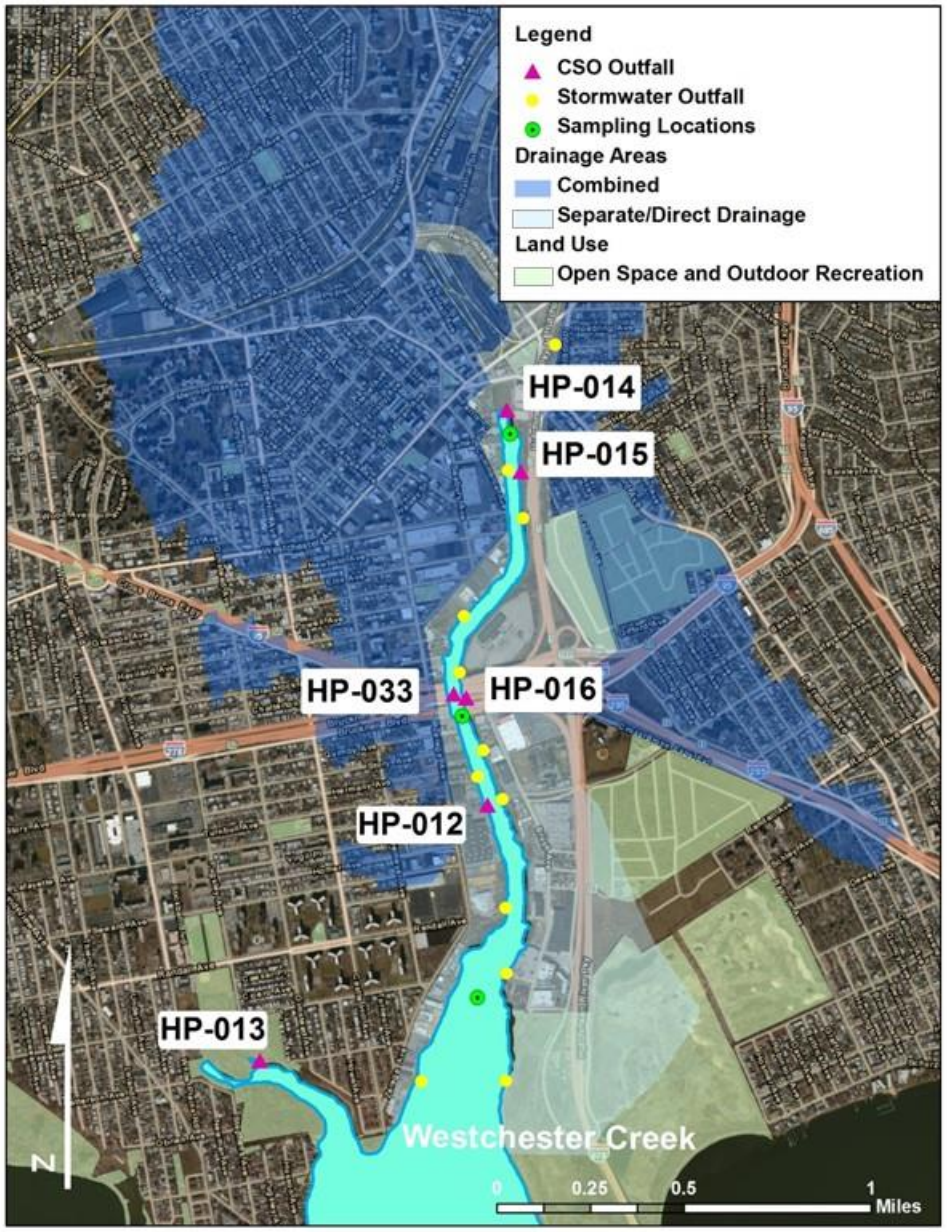
*Recreational Season is from May 1st through October 31st

WC LTCP Proposed Final Recommendations

Jim Mueller, P.E.
Assistant Commissioner
DEP

Westchester Creek Drainage Area

- Majority of CSO discharges at head end near Lehmann HS (HP-014)
- Drainage area:
  - 4,952 acres
  - 70% impervious
  - 85% served by combined sewers
- Classified by New York State DEC for secondary contact recreation and fishing (**Class I**)
- Land Use
  - 55% Residential
  - 18% Mixed Use
  - 15% Open Space
- Wet weather discharges
  - 6 CSO Outfalls
  - 12 Stormwater Outfalls



Westchester Creek CSO Mitigation Options

INCREASING COMPLEXITY

INCREASING COST

System Optimization	Fixed Weir	Parallel Interceptor / Sewer	Inflatable Dams 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 *Satellite:*	**Outfall Disinfection**	Retention Treatment Basin (RTB) with Disinfection		High Rate Clarification (HRC)
Centralized:	WWTP Expansion			
Storage	**In-System**	Shaft	**Tank**	**Tunnel**

Preferred Alternative = Continue to Implement Waterbody/Watershed Facility Plan (WWFP) Work *(See Next Slide)*

WC Recommendation: Continue Ongoing WWFP Work

NYC Environmental Protection

Weir Modifications to Regulators CSO-29A and CSO-29

(Directs more flow to WWTP)

Cost = $15 Million

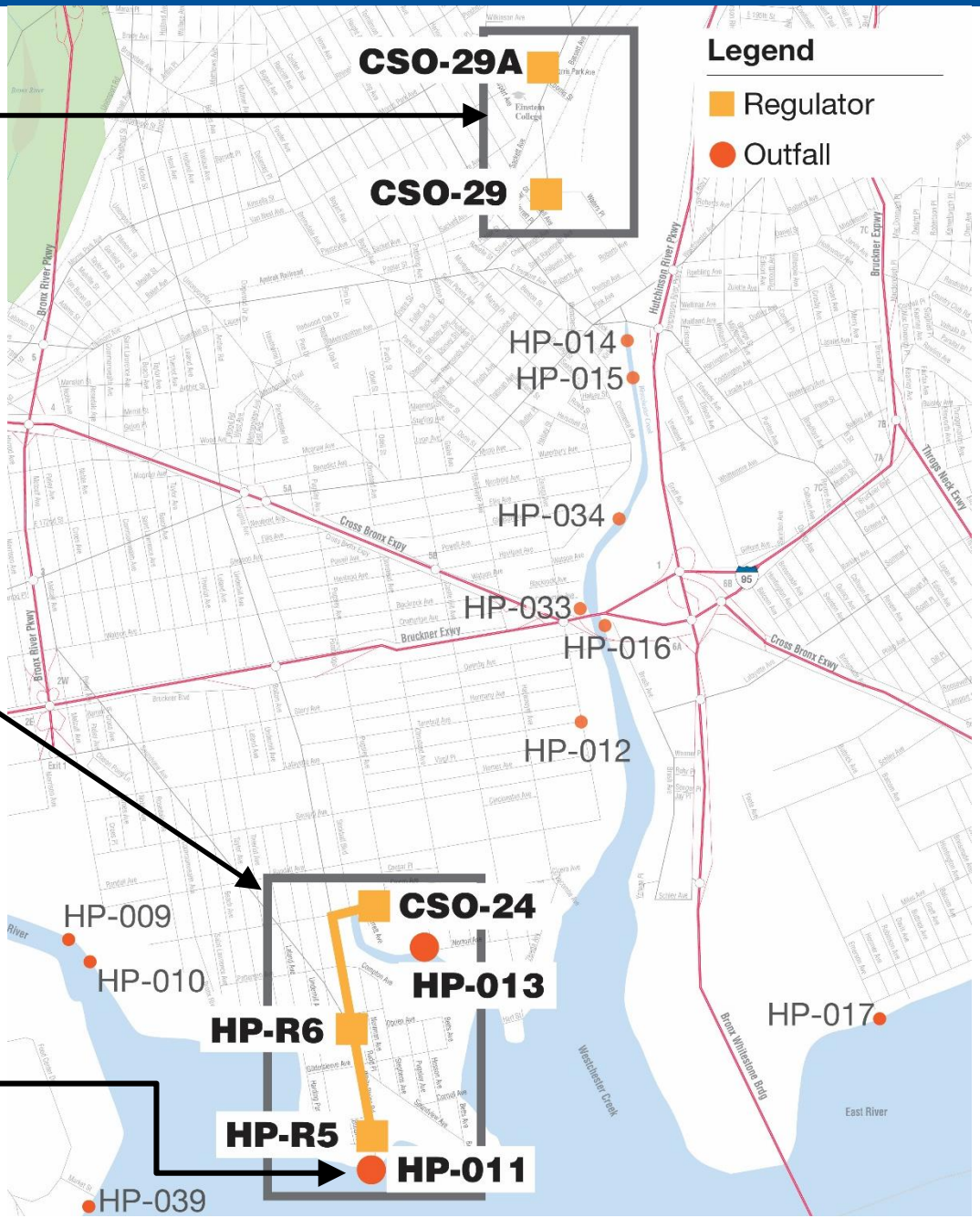
Parallel Relief Sewer to Divert CSO Away from Pugsley Creek

Cost = $66 Million

Floatables Control at HP-011

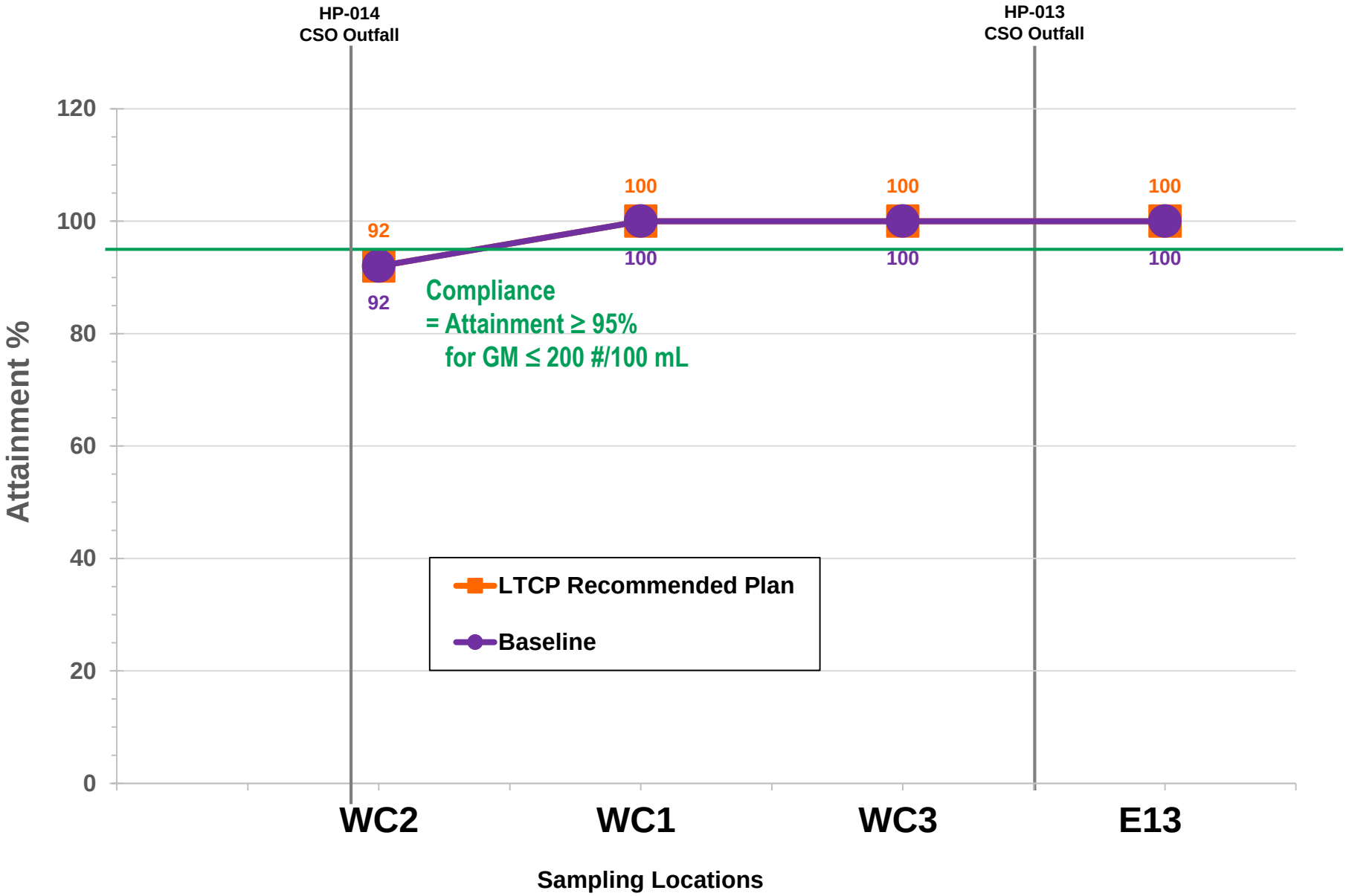
(Incorporated under Bronx River LTCP)

Cost = $9 Million



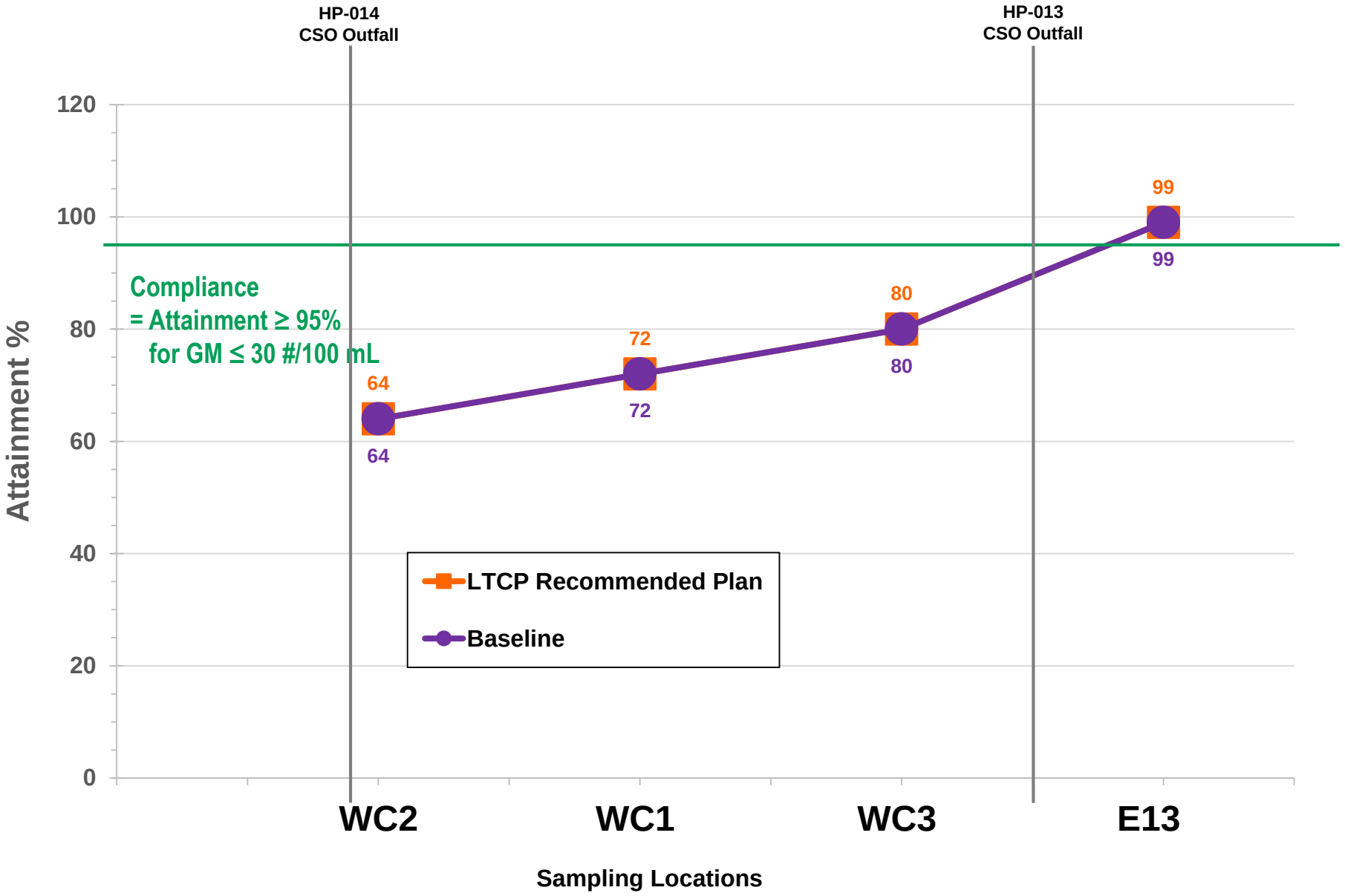
Westchester Creek Sampling Locations

Projected Annual Fecal Coliform Attainment



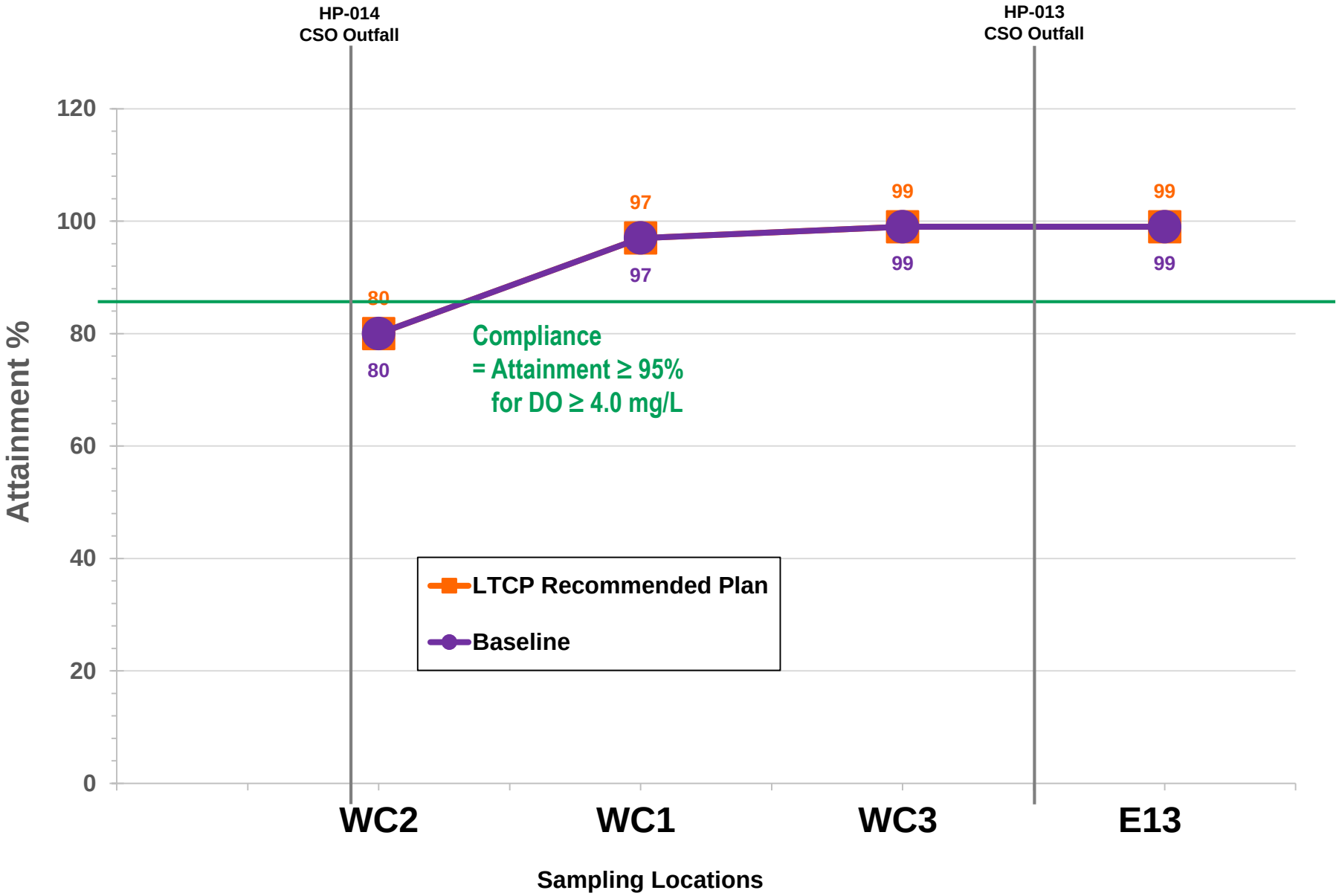
*Projections based on 2008 average rainfall year

Projected Annual Enterococcus Attainment



*Projections based on 2008 average rainfall year

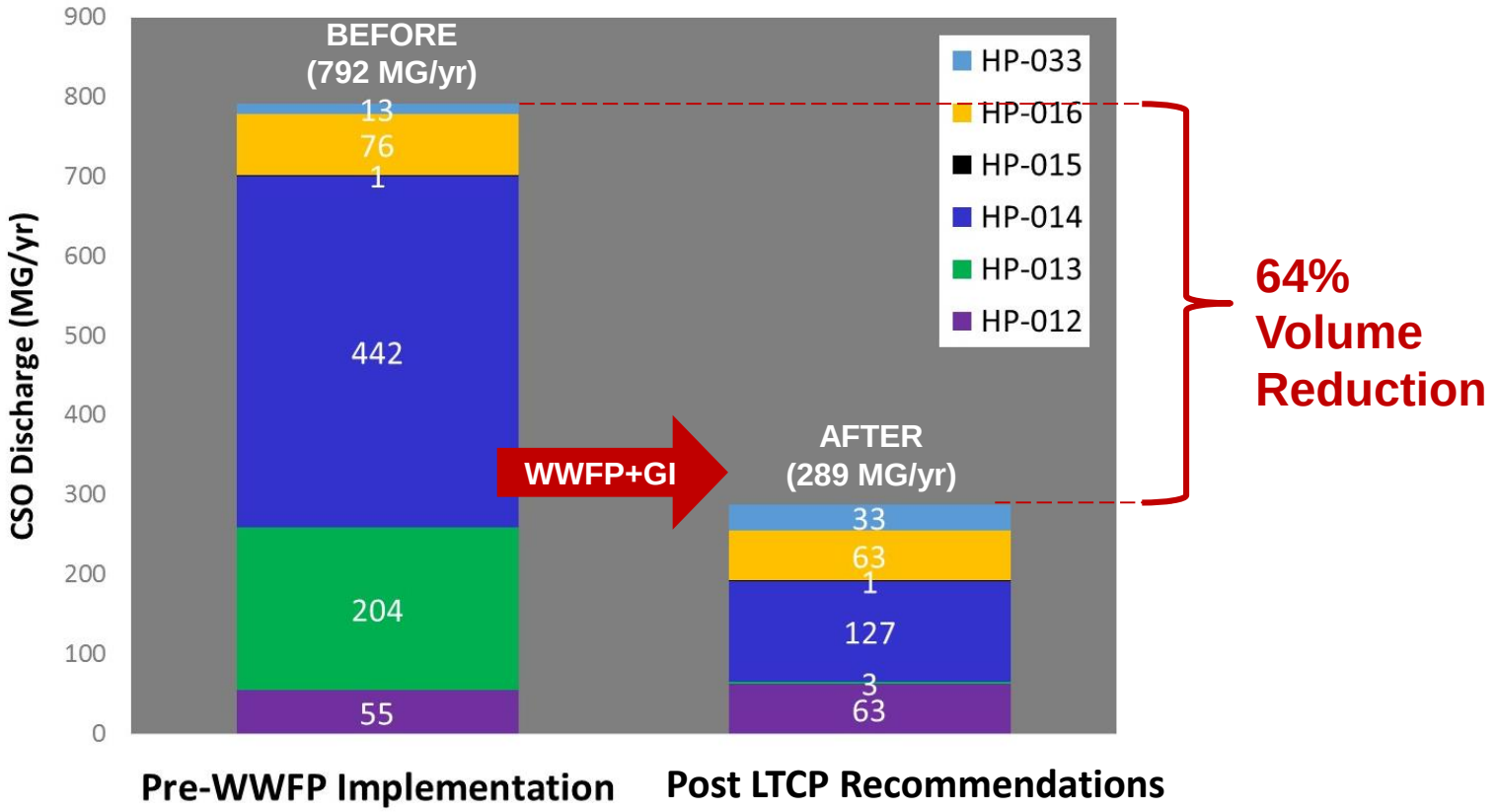
Projected Annual Dissolved Oxygen Attainment



*Projections based on 2008 average rainfall year

WC Resulting Water Quality Improvements

- Implementation of planned GI and WWFP Recommendations will reduce CSO volume by 64%



- High level of attainment of primary contact criterion

(Fecal Coliform GM <200 cfu/100 mL)

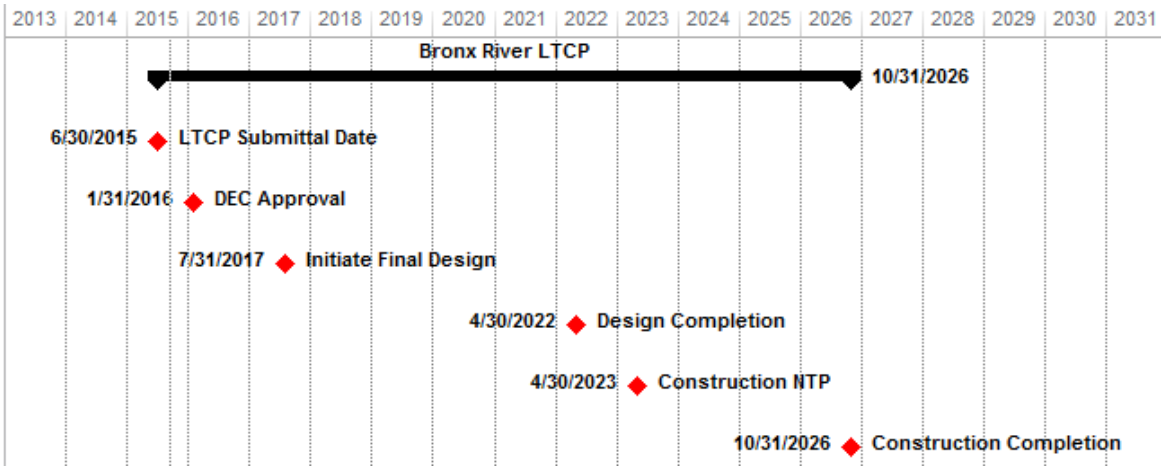
WC Overview of Implementation Schedule

LTCP Recommendation		Phase	Schedule
Continue Ongoing Waterbody / Watershed Facility Plant (WWFP) Projects	**Weir Modifications to Regulators CSO-29A and CSO-29**	Design	Completed
		Construction	Dec 2015 – Dec 2019
	Pugsley Creek Parallel Relief Sewer	Design	In Progress
		Construction	Jun 2016 – Dec 2019
Part of Larger CSO Control Project under Bronx River LTCP	**Floatables Control at HP-011***	Estimated Construction Completion = 9 Years from Bronx River LTCP Approval *(See Next Slide)*	

Tentative Floatables Control Implementation Schedule

- Per constructability reviews for Bronx River LTCP and recent DEC Technical Meeting on Sept. 3rd, 2015:

Task Name	Start	Finish
Bronx River LTCP	**Tue 6/30/15**	**Sat 10/31/26**
LTCP Submittal Date	Tue 6/30/15	Tue 6/30/15
DEC Approval	Sun 1/31/16	Sun 1/31/16
Initiate Final Design	Mon 7/31/17	Mon 7/31/17
Design Completion	Sat 4/30/22	Sat 4/30/22
Construction NTP	Sun 4/30/23	Sun 4/30/23
Construction Completion	Sat 10/31/26	Sat 10/31/26



WC LTCP Proposed Final Recommendations

- Continue to implement 2011 Waterbody / Watershed Facility Plan (WWFP) Recommendations
- Continue to implement Green Infrastructure Program
- Initiate post-construction compliance monitoring
- Incorporate floatables control at Outfall HP-011
  - *As part of a larger CSO control project under the Bronx River LTCP*
- Perform Use Attainability Analysis (UAA) addressing non-compliance
- Establish a wet-weather advisory during the recreational season (May 1st to Oct 31st)

Green Infrastructure

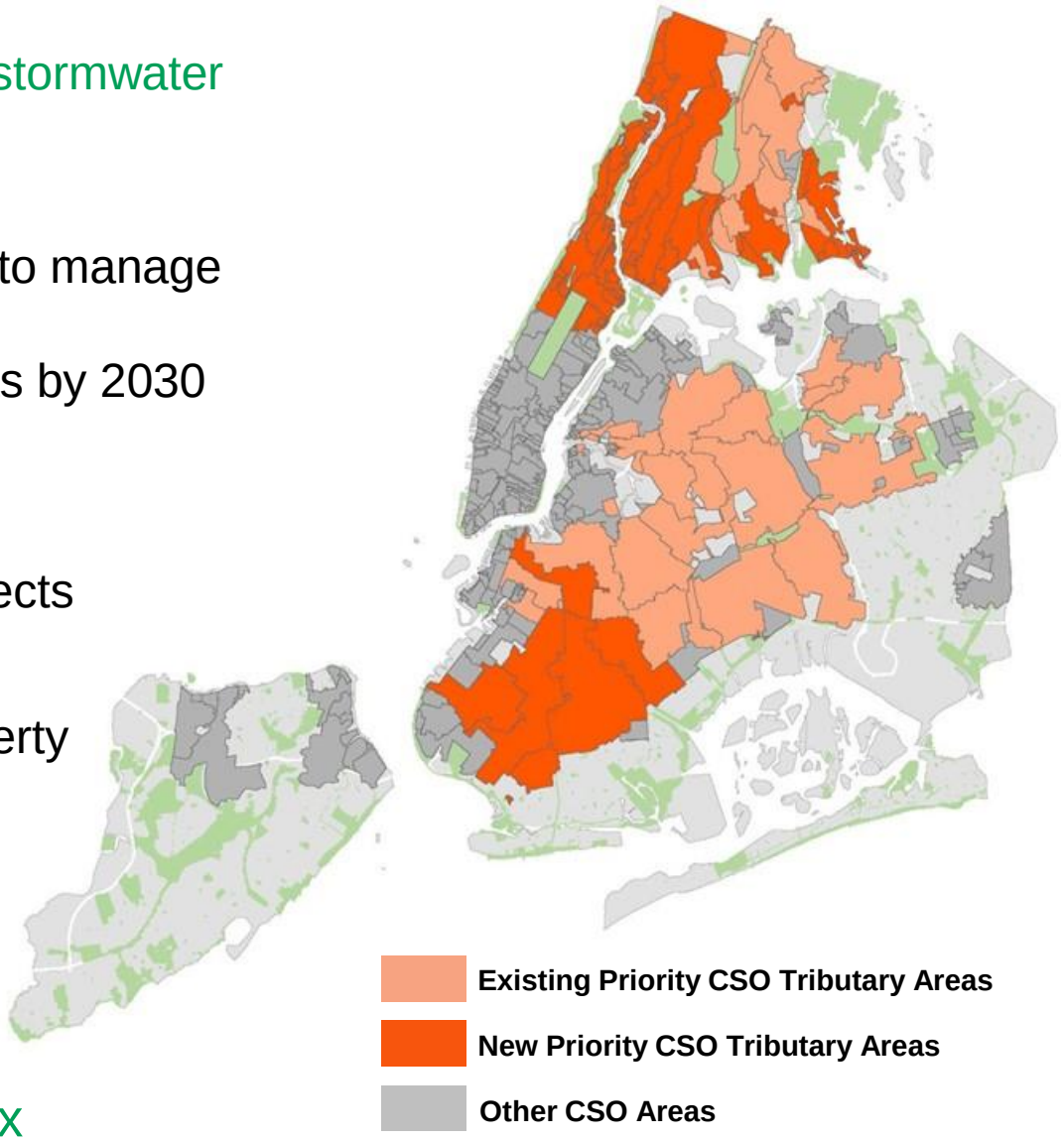
Mikelle Adgate
Program Manager
DEP

Green Infrastructure in New York City

- **Green Infrastructure (GI)** collects stormwater runoff from impervious surfaces

- Budget **$1.5 billion** for GI Citywide to manage 1” of stormwater runoff from 10% of impervious combined sewered areas by 2030

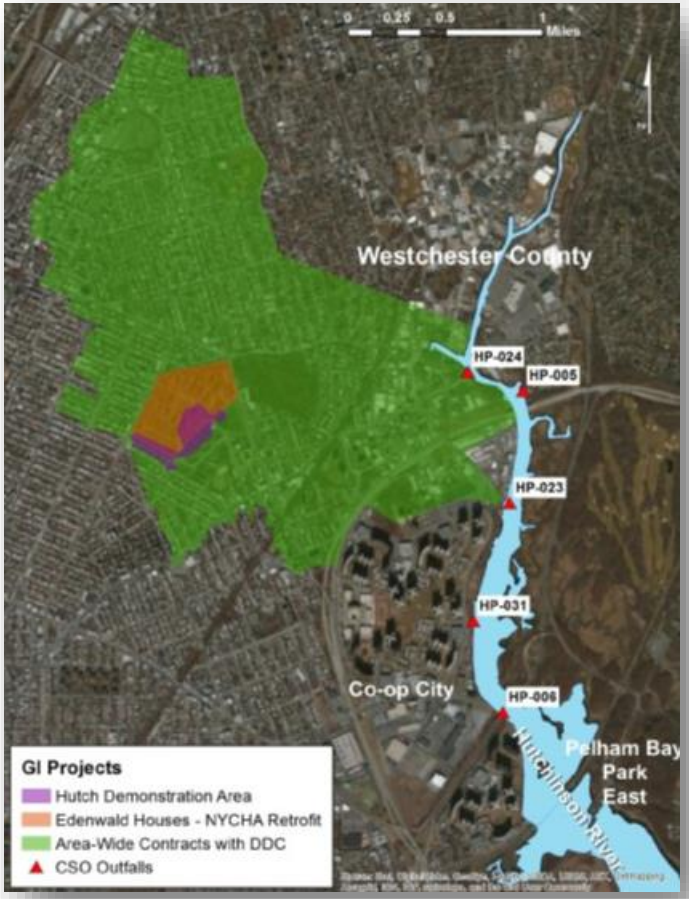
- Meet this goal through:
  - ROW Bioswale Area-Wide Projects
  - Public Property Retrofits
  - Grant Program for Private Property Owners



Currently in-construction on approx. **2700 GI Assets** in Brooklyn, Queens and the Bronx

Ongoing GI in Hutchinson River and Westchester Creek

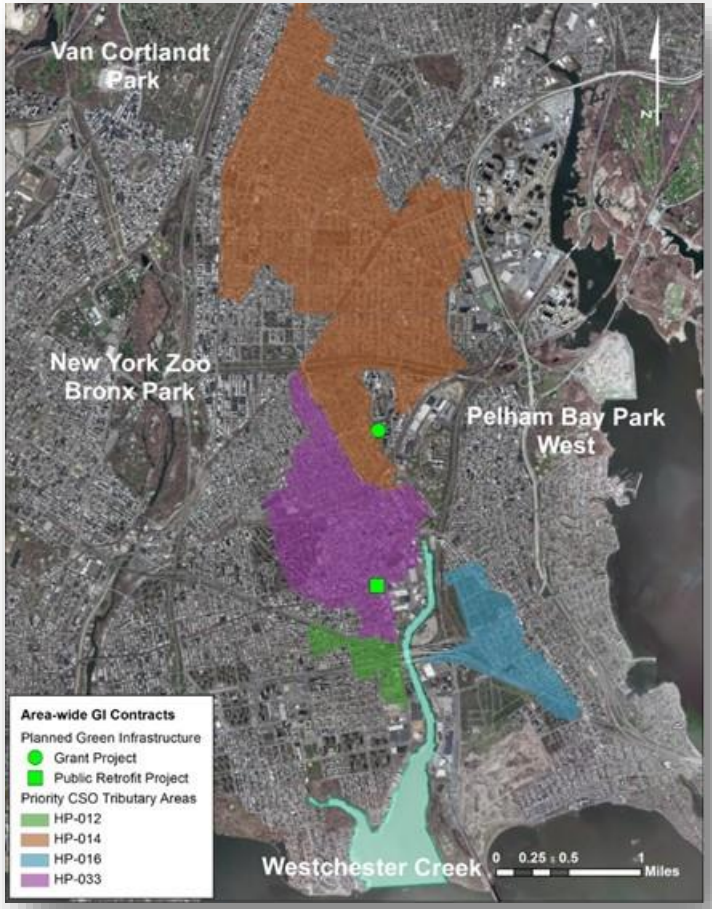
Hutchinson River



Status:

- 22 Bioswales Constructed
- 100 GI Assets in Construction or final design
- Porous Concrete Pilot
- Edenwald Retrofit – NTP issued

Westchester Creek



Status:

- 2 Green Roofs Constructed
- Geotechnical Investigations Underway

Next Steps

- Public Comments will be accepted through October 30, 2015
- DEP/DEC to review public comments
- DEC to approve LTCPs
- Comments can be submitted to:
  - New York City DEP at: ltcp@dep.nyc.gov

Additional Information & Resources

- 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

Discussion and Q&A Session