



# **Westchester Creek Combined Sewer Overflow Long Term Control Plan**

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Public Kickoff Meeting  
JHS 125 Henry Hudson School  
February 26, 2014

# Welcome & Introductions

Shane Ojar  
DEP

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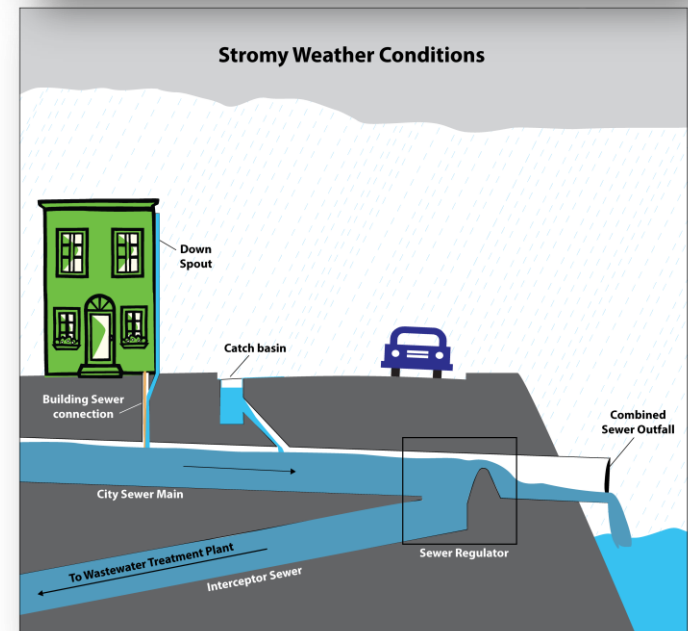
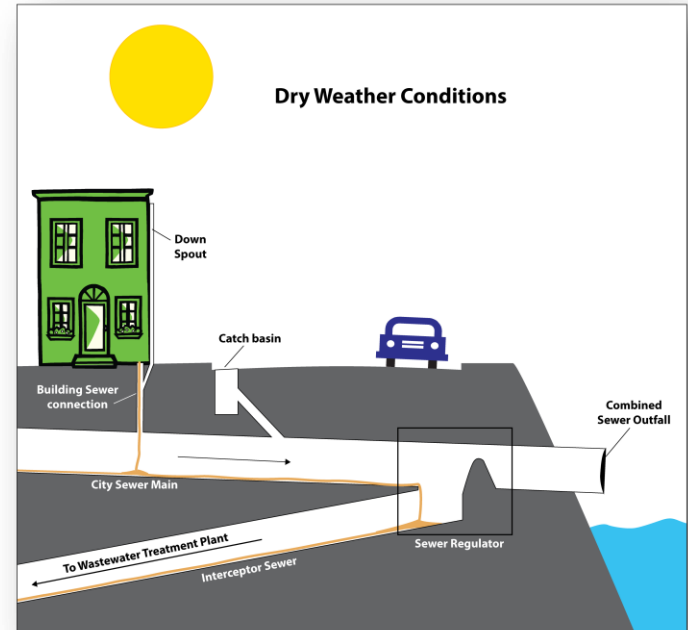
## Topic

- 1 Welcome and Introductions
  - 2 Long Term Control Plan (LTCP) Process
  - 3 Waterbody/Watershed Characteristics
  - 4 CSO Improvement Projects
  - 5 LTCP Development
  - 6 Public Participation Plan & Schedule
  - 7 Next Steps
  - 8 Discussion and Q&A Session
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1. Provide background and overview of Long Term Control Plan process for Westchester Creek
2. Present Westchester Creek watershed characteristics and status of waterbody improvement projects
3. Obtain public input on waterbody uses in and future vision for Westchester Creek
4. Describe additional opportunities for public input and outreach

# What is a Combined Sewer Overflow?

- Approximately 60% of NYC's sewer system is combined, which means it is used to **convey both sanitary and storm flows**.
  - Heavy rain and snow storms can lead to higher than normal flows in combined sewers
  - When flows exceed twice the design capacity of treatment plants, a mix of excess stormwater and untreated wastewater may discharge directly into the city's waterways
  - This is called a combined sewer overflow (CSO). CSOs are a concern because of their potential effect on water quality and recreational uses in local waterways.



DEP wants to hear from **you!**

- What is **your vision** for the future for Westchester Creek?
- How do you and other community members/ stakeholders use Westchester Creek (e.g., recreation)?
- Combined Sewer Overflow or Water Quality improvement measures or alternatives you would like DEP to consider and evaluate
- How DEP can better involve Westchester Creek stakeholders?



**LTCP Citywide Kickoff Meeting**

# **Overview of Combined Sewer Overflow Long Term Control Plan Process**

# **Waterbody & Watershed Characteristics**

Keith Mahoney, P.E.  
DEP



# Current Water Quality Standards



- Best Use Designations
- Saline Surface Water Quality Standards
- Westchester Creek – Class I
  - DO ≥ 4.0 mg/L
  - Fecal Coliform ≤ GM 2,000/100 mL
  - Total Coliform ≤ GM 10,000/100 mL

New York State Saline Surface Water Quality Standards				
Class	Bacteria (when disinfection is practiced)			Dissolved Oxygen
	Total Coliform	Fecal Coliform	Enterococci	
SA	Median ≤ 70 MPN/100 mL	—	Geometric mean ≤ 35/100 mL	> 4.8 mg/l (daily avg) ≥ 3.0 mg/l
SB	Monthly median ≤ 2,400/100 mL 80% ≤ 5,000/100 mL	Monthly geometric mean ≤ 200/100 mL	Geometric mean ≤ 35/100 mL	> 4.8 mg/l (daily avg) ≥ 3.0 mg/l
SC	Monthly median ≤ 2,400/100 mL 80% ≤ 5,000/100 mL	Monthly geometric mean ≤ 200/100 mL	Geometric mean ≤ 35/100 mL	> 4.8 mg/l (daily avg) ≥ 3.0 mg/l
I	Monthly geometric mean ≤ 10,000/100 mL	Monthly geometric mean ≤ 2,000/100 mL	—	≥ 4.0 mg/l
SD	—	—	—	≥ 3.0 mg/l



# Westchester Creek Waterbody Characteristics

- From Lehmann High School to the Whitestone Bridge, including Pugsley Creek to the west
- Classified for secondary contact recreation (I), boating and fishing; similar existing uses
  - 100% attainment of fecal coliform criterion (monthly geometric mean < 2,000 cfu/100 mL)
  - Dissolved oxygen modeling not complete, but minimum winter DO measurement = 7.61 mg/L (WQS is never less than 4 mg/L)





# Westchester Creek: Current Uses

- Secondary contact
- Limited access (bulkheaded)
- Industrial waterway

1) Lehmann HS Athletic Fields



2) Marina



3) Community Garden



4) Ferry Point Park

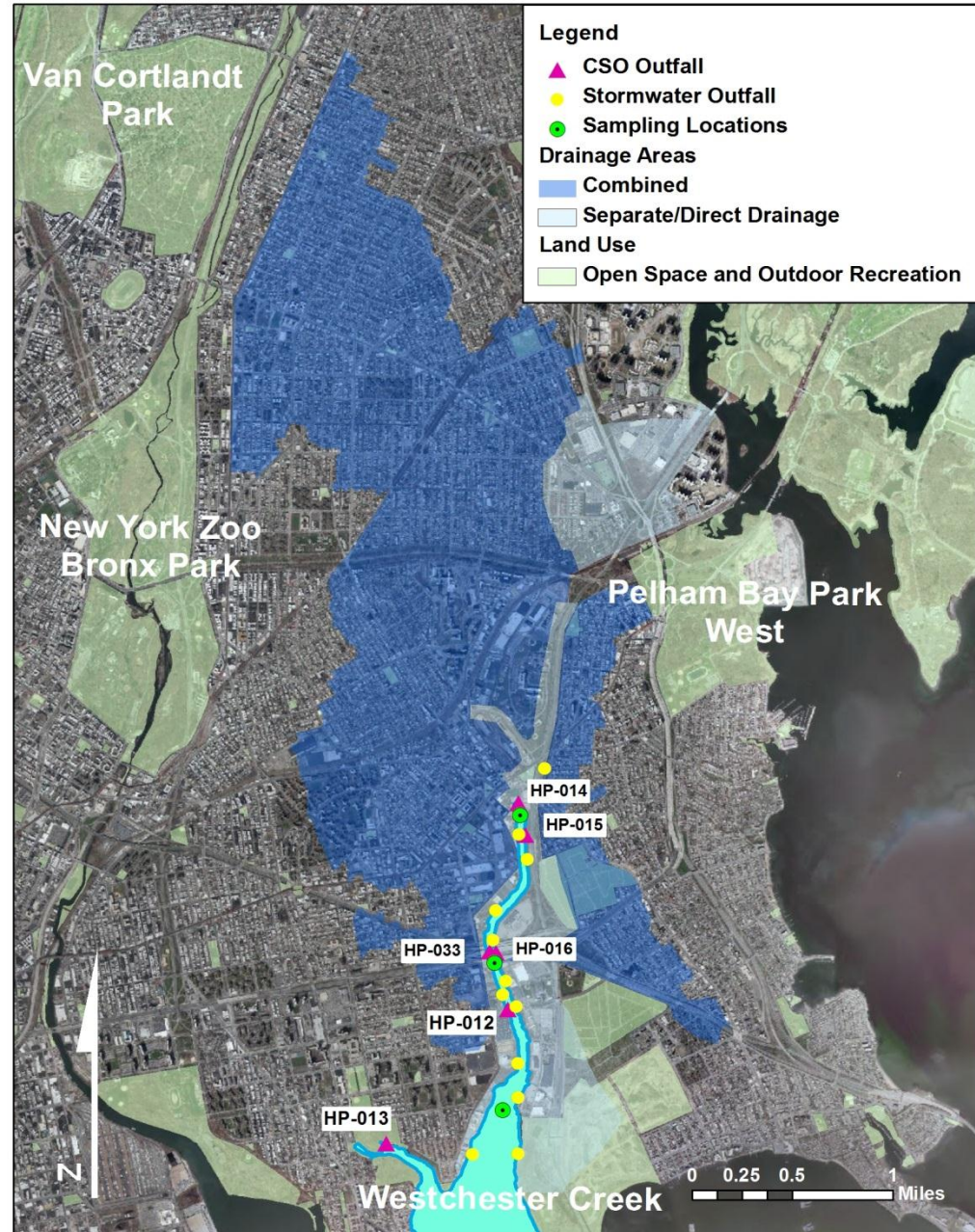




# Westchester Creek Drainage Area Characteristics

- Drainage area:
  - ~4,952 acres
  - 70% impervious
  - ~85% served by combined sewers

- Land Use
  - 55% Residential
  - 18% Mixed Use
  - 15% Open Space





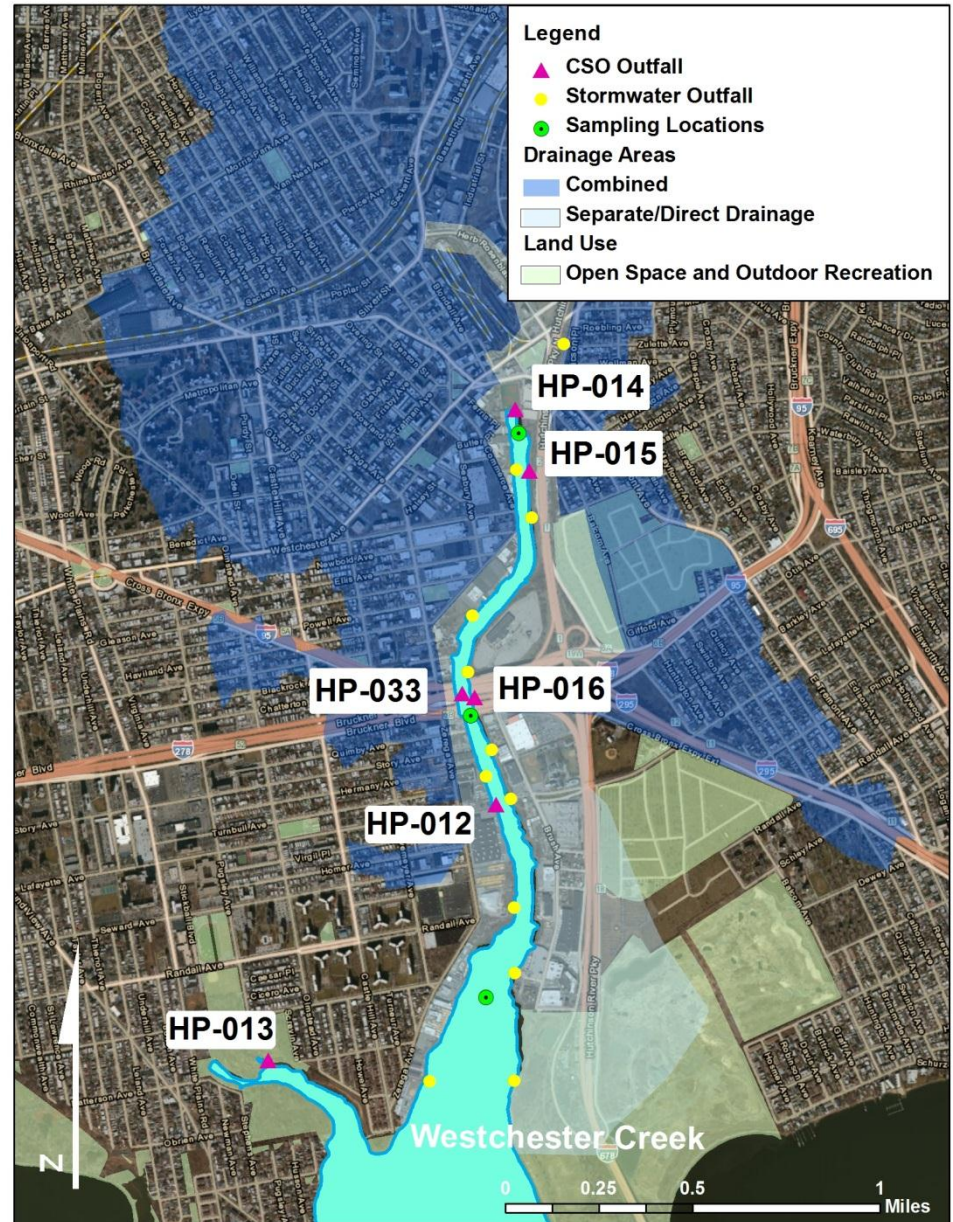
# Westchester Creek Drainage Area Characteristics

## ➤ Wet weather discharges

▲ 6 CSO Outfalls

● 12 Stormwater Outfalls

## ➤ Majority of CSO discharges at head end near Lehmann HS (HP-014)



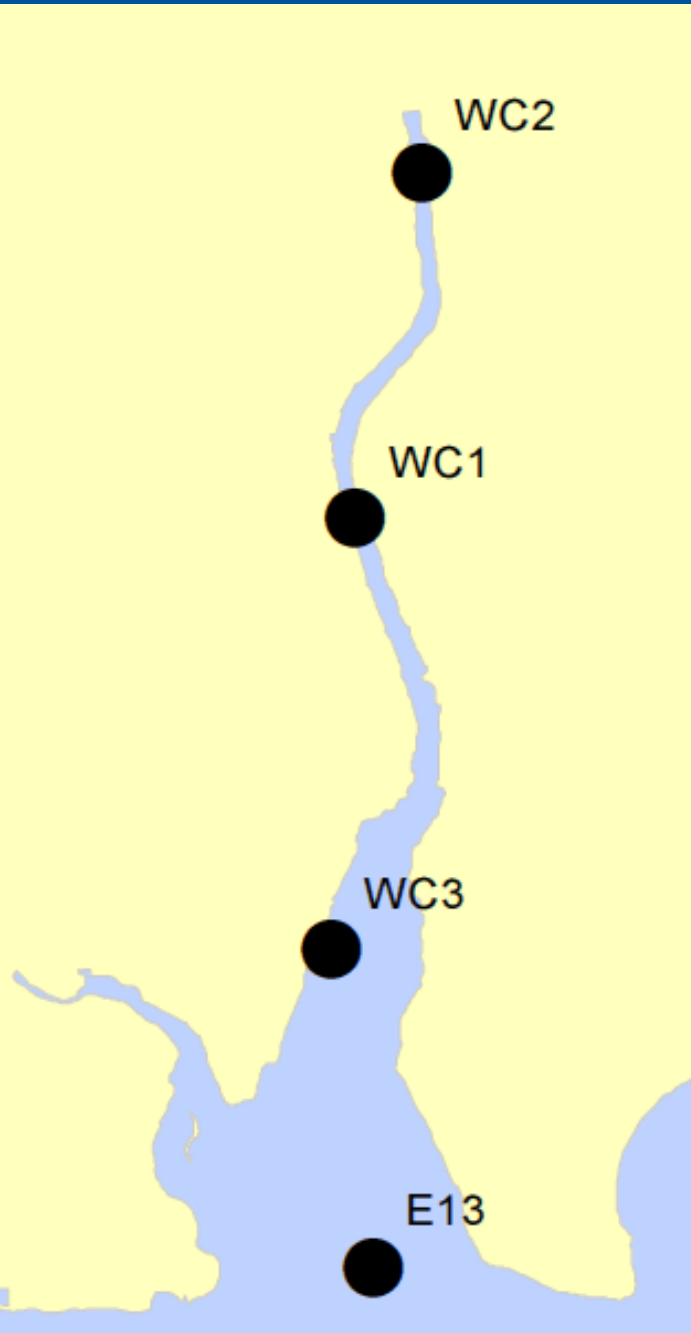
# Westchester Creek: Data Collection



- Flow data
  - HP-014
  - Continuous through March 2014
  
- Discharge Water Quality
  - HP-014 and HP-016
  - Up to six wet weather events
  
- Open Waters
  - 3 locations within the creek
  - 1 out in Upper East River
  - Weekly through March 2014



# Westchester Creek: WQ Sampling Results



- Enhanced Harbor Survey Program Data Results
- Data collection continuing through March 2014

Station	FECAL		ENTERO	
	GM (Dry)	GM (All)	GM (Dry)	GM (All)
<b>WC2</b>	123	194	66	158
<b>WC1</b>	74	155	55	102
<b>WC3</b>	17	34	4	9
<b>E13</b>	7	16	4	7

- Currently fecal coliform well below 2,000 cfu/100 mL

- The Westchester Creek Waterbody Watershed Facility Plan (WWFP) submitted by DEP in June 2011 was approved by DEC in May 2012
- The WWFP identified and evaluated:
  - Various CSO controls to meet current water quality standards such as bending weirs and CSO retention tanks/tunnels (including a 100% CSO abatement tank alternative)
  - Cost-effectiveness of selected alternatives in accordance with EPA CSO Policy and Clean Water Act
- The WWFP is the foundation for Long Term Control Plan and the WWFP proposed the following elements for Westchester Creek:
  - Weir modifications in the Eastchester Road Sewer (HP-014 Outfall)
  - New Diversion Sewer on Lacombe Avenue and White Plains Road



# **Westchester Creek Water Quality Current Improvement Projects**

Weir Modification  
Pugsley Parallel Sewer  
Green Infrastructure

# Waterbody/Watershed Plan Elements

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

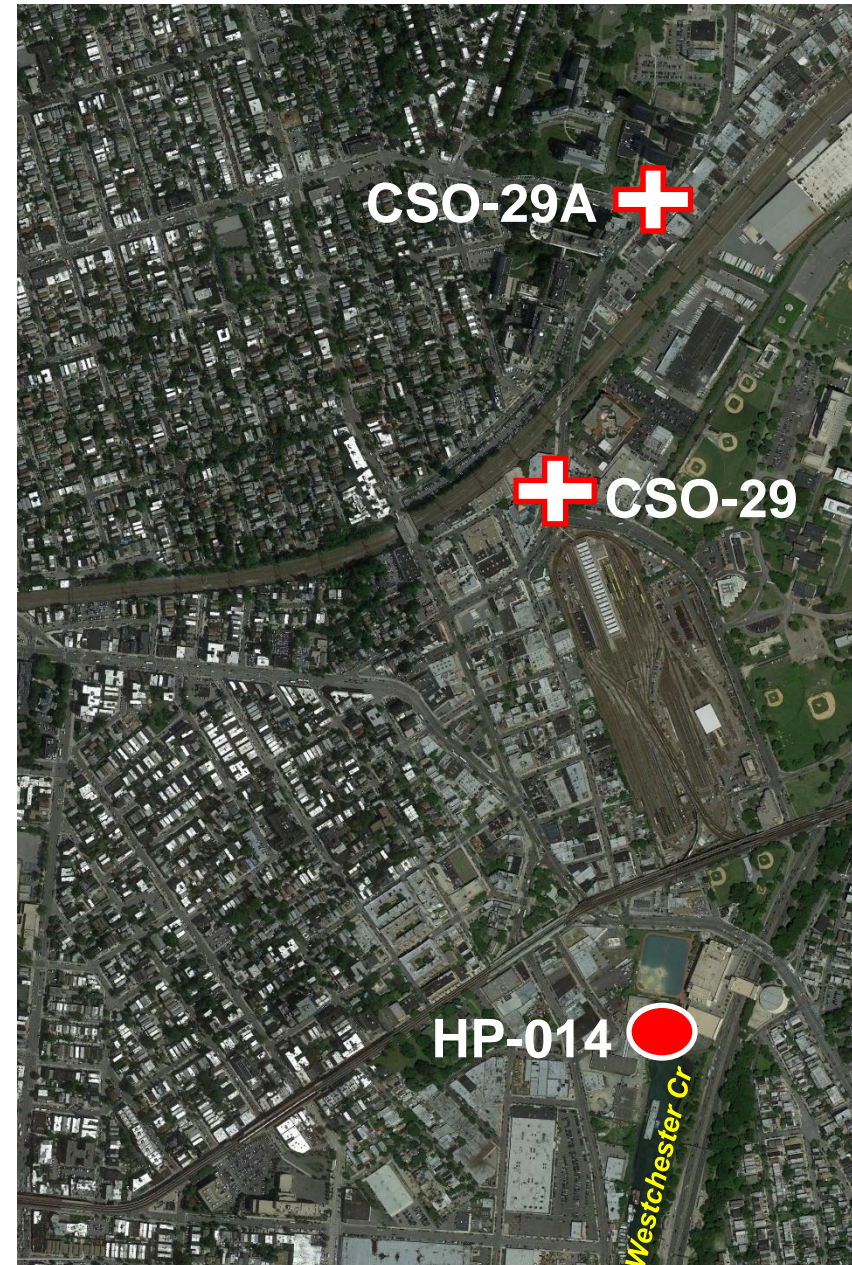
Parallel relief sewer to divert CSO away from Pugsley Creek





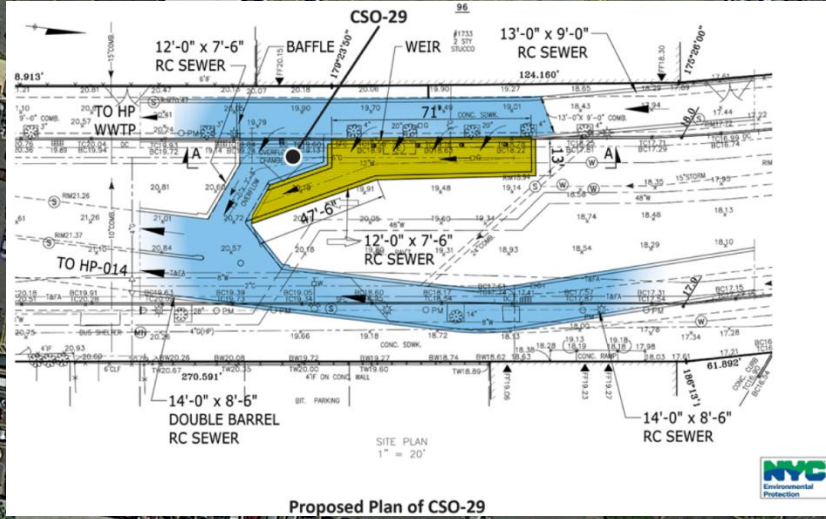
# Weir Modifications Overview

- Modify sewer overflow structures in the street to direct more flow to the plant for treatment
- Reduce CSO discharges to Westchester Creek by 63%
- 100% attainment of secondary contact criterion is projected
  - Fecal Coliform GM <2,000 cfu/100 mL
- Construction Cost: \$13.6 million





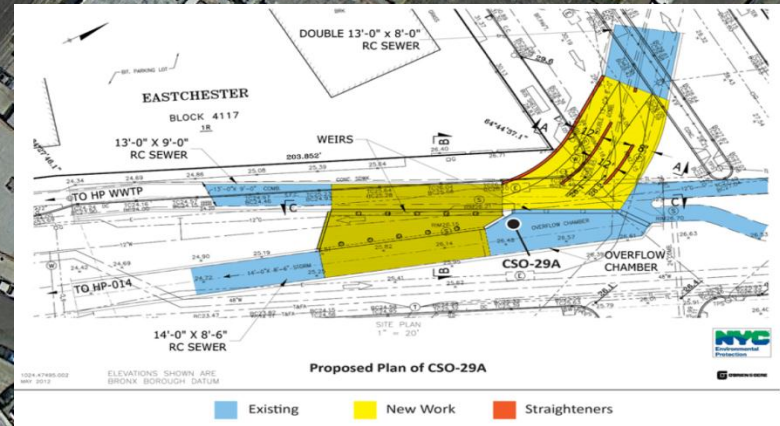
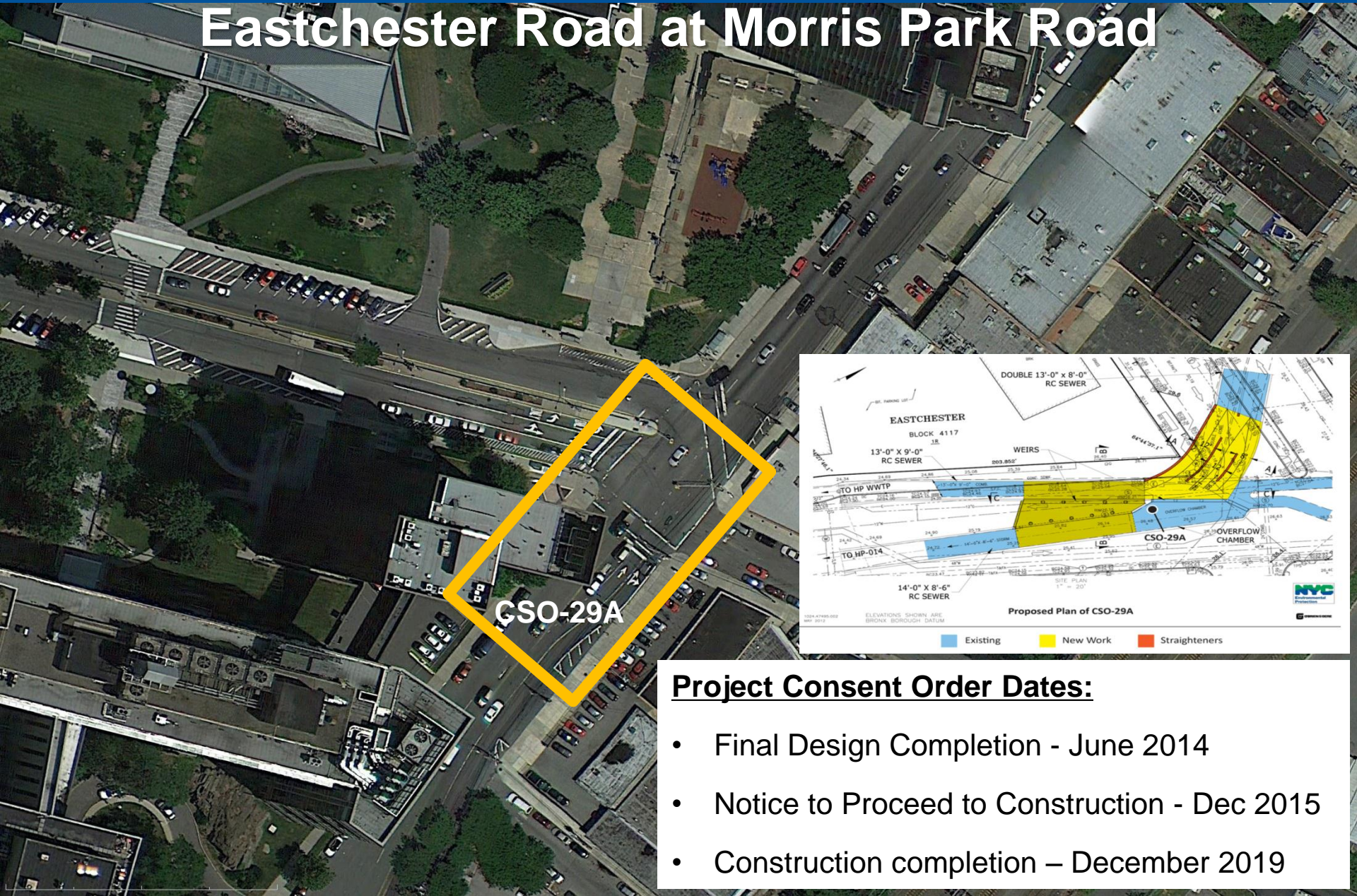
## Eastchester Road near Waters Place



- Project Consent Order Dates:**
- Final Design Completion – June 2014
  - Notice to Proceed to Construction – Dec 2015
  - Construction Completion – December 2019



# Westchester Creek: Weir Modification Eastchester Road at Morris Park Road



- Project Consent Order Dates:**
- Final Design Completion - June 2014
  - Notice to Proceed to Construction - Dec 2015
  - Construction completion – December 2019





## ➤ New Diversion Sewer

- Lacombe Avenue from Barrett Ave to White Plains Road
- White Plains Road from Lacombe Avenue to Cornell Avenue

## ➤ Improves water quality in Pugsley Creek

- 98% CSO reduction to small, shallow waterbody within Pugsley Creek Park

## ➤ Project Consent Order Dates:

- Final Design Completion  
June 2015
- Notice to Proceed to Construction  
June 2016
- Construction Completion  
December 2019

## ➤ Types of Green Infrastructure:

- Bioswales
- Stormwater Greenstreets
- Rain gardens
- Green Roofs

## ➤ Benefits:

- Manage stormwater runoff from impervious surfaces such as streets, sidewalks and rooftops
- Neighborhood beautification, improved air quality, and reduced air temperature during hot weather.



**Right-of-Way Bioswales**

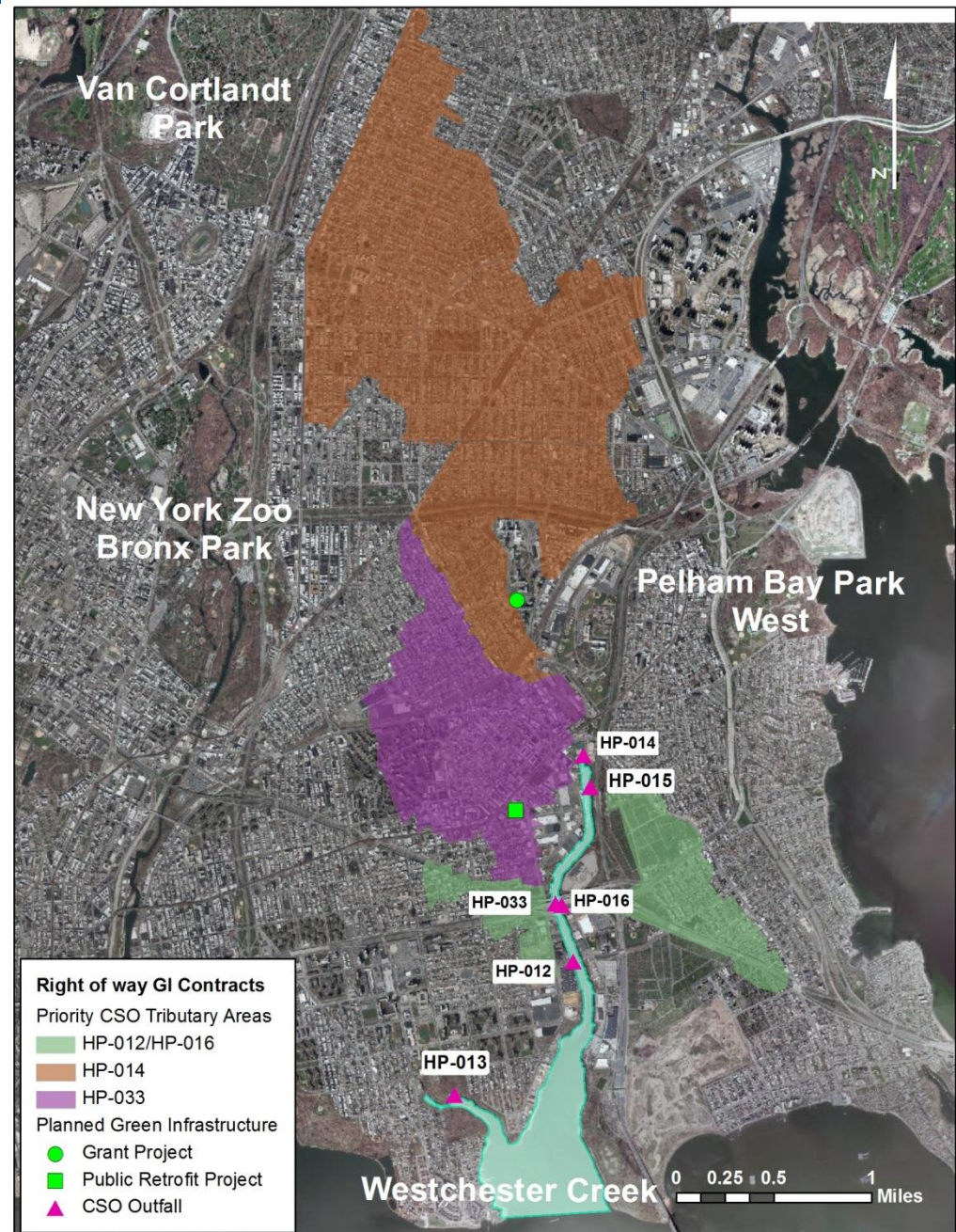


**Stormwater Greenstreets**



# Green Infrastructure in Westchester Creek

- DEP's partnering agency, the Economic Development Corporation (EDC), will begin the design for right-of-way green infrastructure in Westchester Creek in Summer 2015.
- Area-wide contract allows DEP to:
  - Focus resources on these specific outfall tributary areas
  - Saturate these areas with as much GI as possible
  - Achieve efficiencies in design and construction





# **Westchester Creek LTCP Development**

Srinivasan Rangarajan, Ph.D.

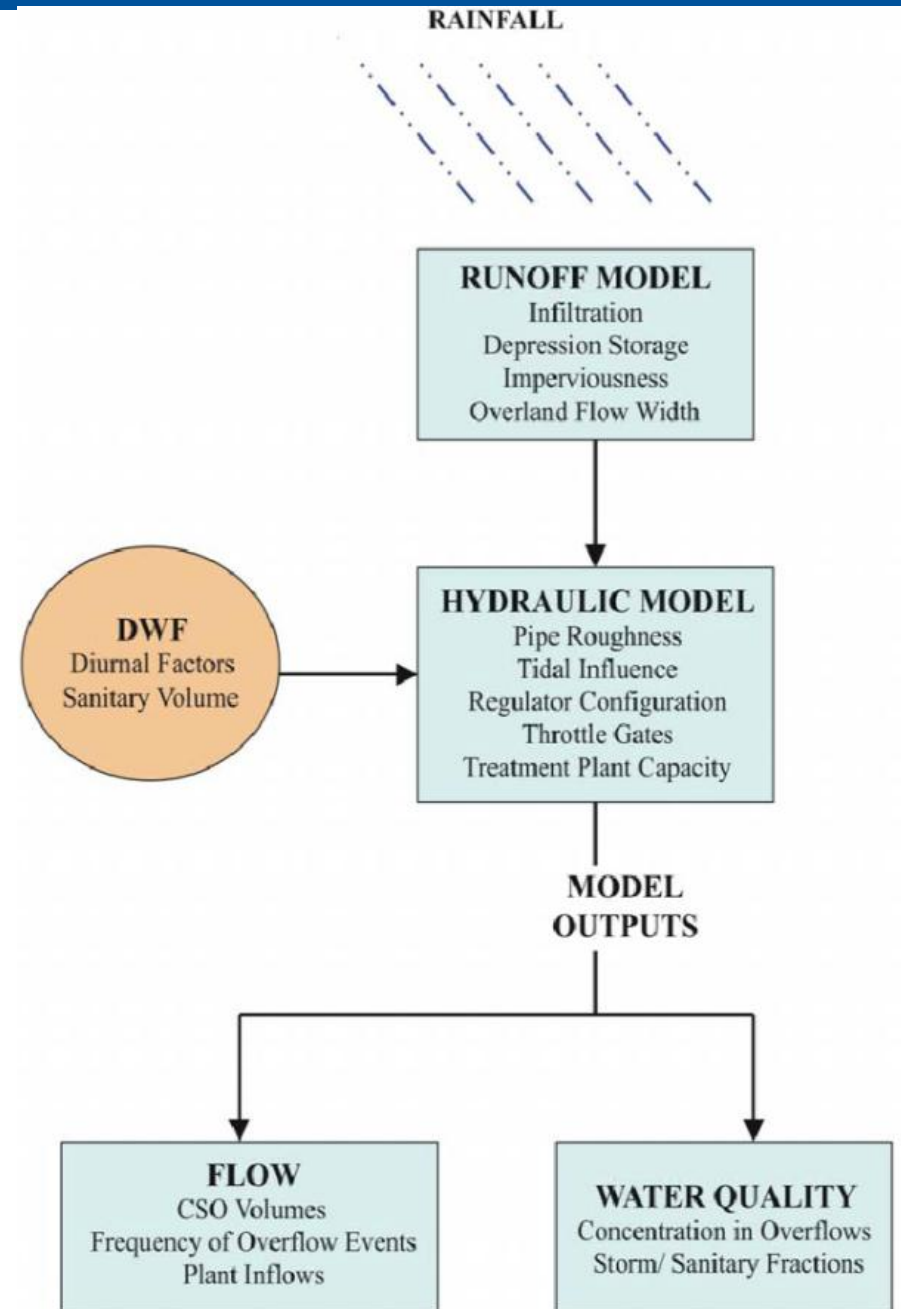
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# Westchester Creek LTCP Workplan Schedule

Task	Schedule		
	Winter 2014	Spring 2014	Summer 2014
Public Participation	★		★
Waterbody/Watershed Characterization			
Define Baseline Conditions			
Baseline Analysis and Modeling			
Evaluate Alternatives			
Prepare LTCP and Submit to DEC*			★

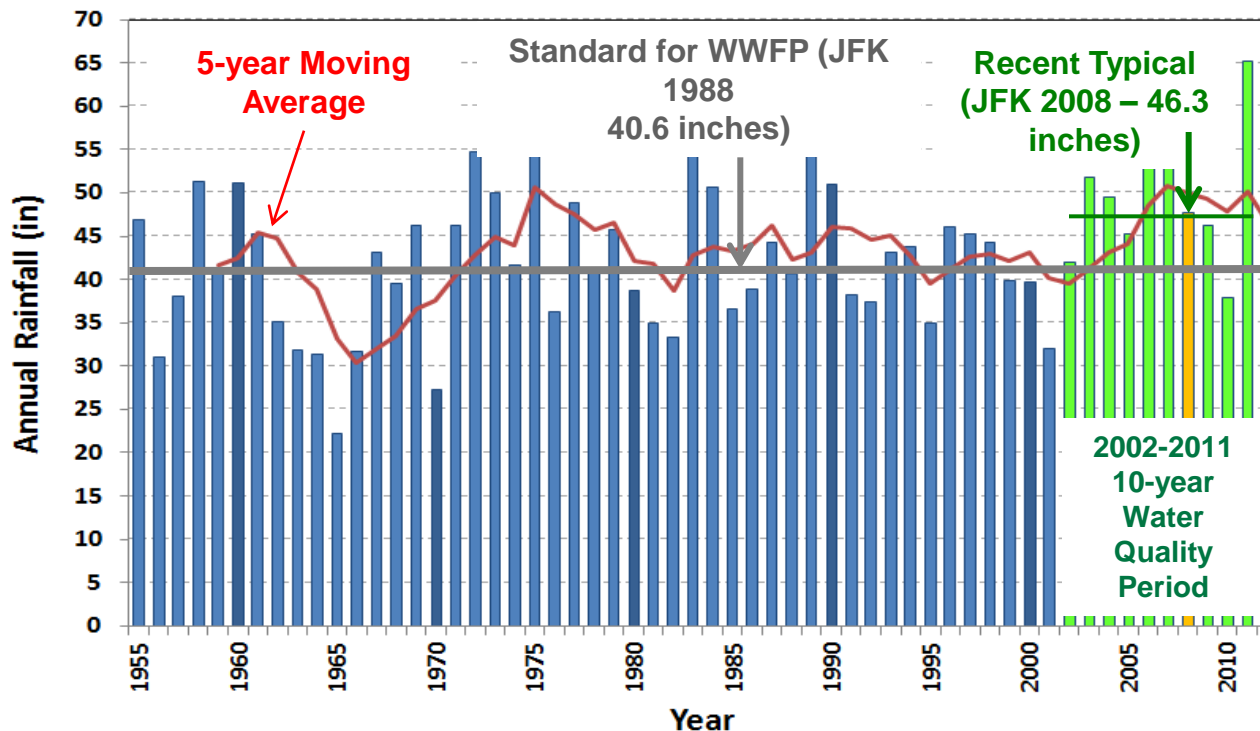
\* Pending DEC approval of DEP's prior modification request.

- Comprehensive modeling tools are utilized for baseline and alternatives evaluation
- Developed over a period of 6 years and peer-reviewed
  - Landside or watershed model, InfoWorks
  - Receiving hydrodynamic and water quality model, East River Tributaries Model (ERTM)



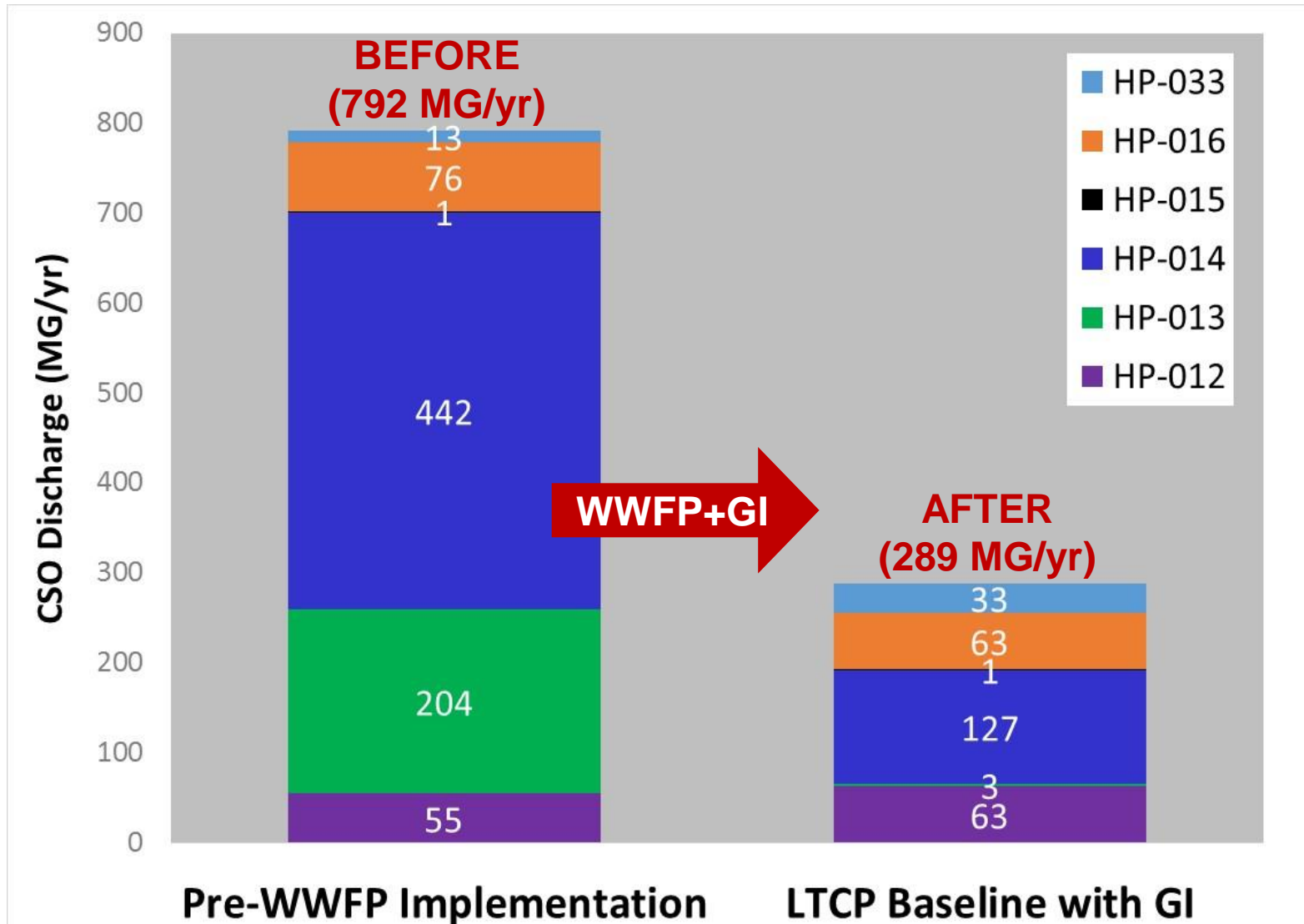
# Model Updates & Baseline Assumptions

- Will be updating landside and water quality models, as needed, with monitoring data currently being collected
- Revised sanitary flows based on 2040 population projections and most recent water usage projections
- Reevaluated rainfall conditions to incorporate recent wet weather events and patterns



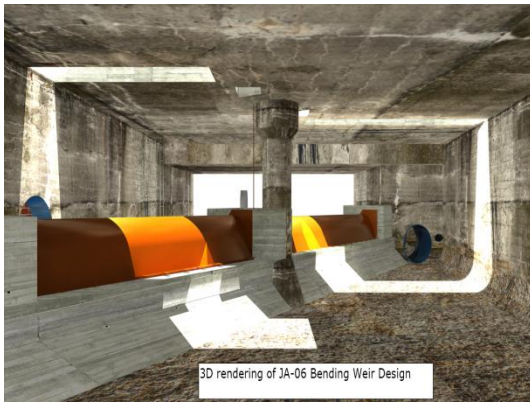
# Westchester Creek: Baseline

- The Pugsley Sewer significantly reduces HP-013 flow.
- HP-014 remains the largest discharge after weir modifications.



# Potential LTCP Alternatives

- Shown below are examples of CSO controls that will be considered for every LTCP and ranked for the unique conditions and water quality goals of the specific waterbody



**Sewer System Modifications**



**Green Infrastructure**



**Green Roof Installation**



**New Sewer Construction**



**Pump Station Expansion**



**CSO Storage Tank or Tunnel**

# Public Participation Plan & Schedule

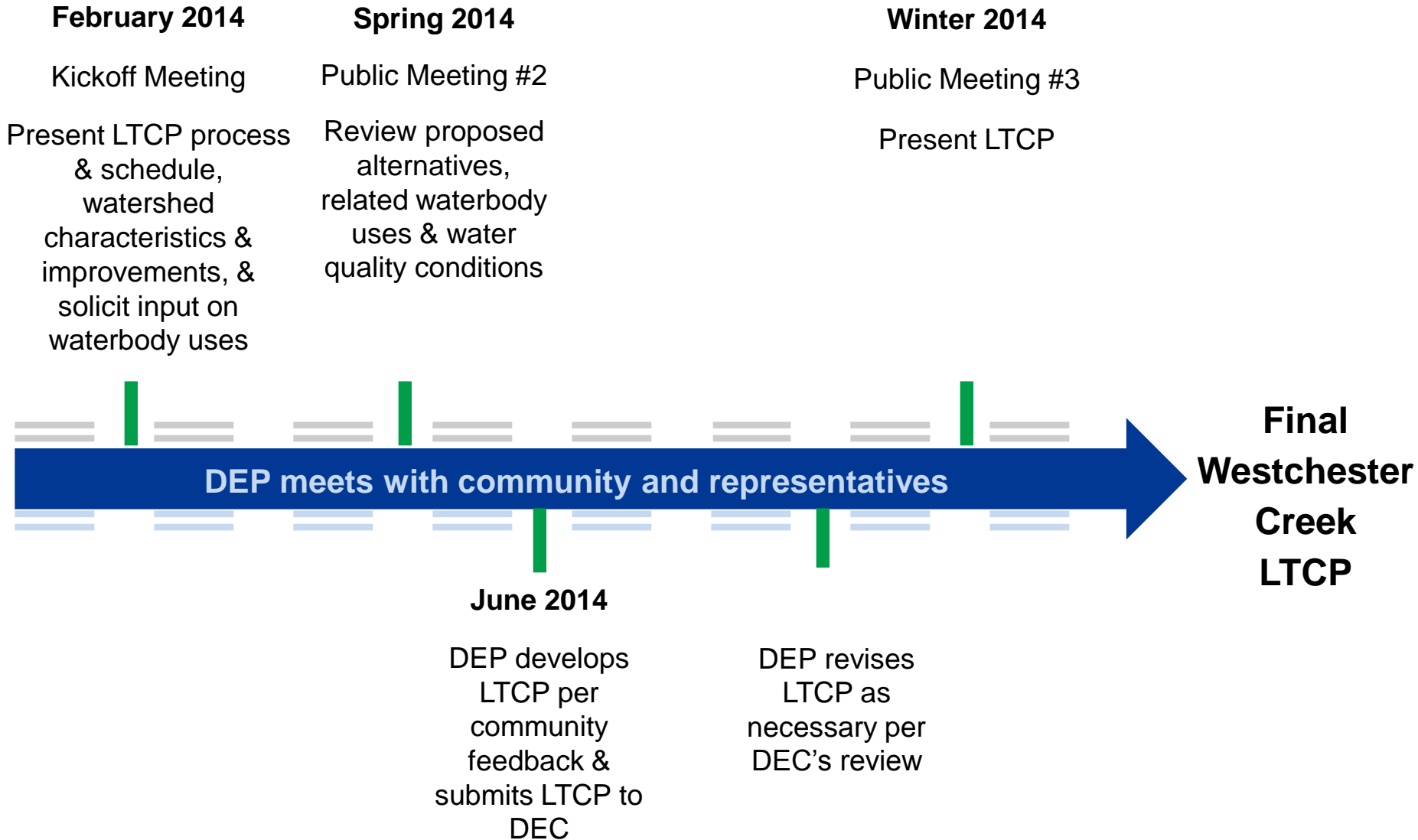
Shane Ojar  
DEP



- **Goal:** Raise awareness about, foster understanding of and encourage input on the development of waterbody specific and citywide LTCPs.
  
- Multi-pronged approach including a diverse set of activities:
  - Annual citywide public meetings rotating across boroughs
  - Local open houses in each watershed
  - Presentations at existing forums including Community Boards and community, business, environmental and recreational organizations to provide updates and solicit input
  - Regular briefings for elected officials and their staff
  - Data collection from broad public through surveys, traveling kiosks and information repositories
  - Variety of communication tools including program website, social media, advisories and notifications



# Public Participation – Westchester Creek



DEP wants to hear from **you!**

- What is **your vision** for the future for Westchester Creek?
- How do you and other community members/ stakeholders use Westchester Creek (e.g., recreation)?
- Combined Sewer Overflow or Water Quality improvement measures or alternatives you would like DEP to consider and evaluate
- How DEP can better involve Westchester Creek stakeholders?



**LTCP Citywide Kickoff Meeting**

- Westchester Creek LTCP Public Meeting #2, Spring 2014
  - Objective: Review proposed alternatives and related waterbody uses and revisiting water quality attainments
  
- Comments can also be submitted to:
  - Gary Kline of the New York State DEC at: [gekline@gw.dec.state.ny.us](mailto:gekline@gw.dec.state.ny.us)
  - New York City DEP at: [ltcp@dep.nyc.gov](mailto:ltcp@dep.nyc.gov)

- Visit the informational tables tonight for handouts and poster boards with detailed information
  
- Go to [www.nyc.gov/dep/ltcp](http://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
  - Real-time waterbody advisories
  - Upcoming meeting announcements
  - Other LTCP updates

# Discussion and Q&A Session