Westchester Creek
Combined Sewer Overflow
Long Term Control Plan

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

Shane Ojar
DEP
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Objectives

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
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
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
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

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<th>Station</th>
<th>FECAL</th>
<th>ENTERO</th>
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<td></td>
<td>GM (Dry)</td>
<td>GM (All)</td>
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<tr>
<td>WC2</td>
<td>123</td>
<td>194</td>
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<tr>
<td>WC1</td>
<td>74</td>
<td>155</td>
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<td>WC3</td>
<td>17</td>
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- 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
Westchester Creek: Weir Modification
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

CSO-29A

Project Consent Order Dates:

- Final Design Completion - June 2014
- Notice to Proceed to Construction - Dec 2015
- Construction completion – December 2019
Westchester Creek: Pugsley Parallel Sewer

- **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
Green Infrastructure in Westchester Creek

- **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.
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.

DEP
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<td>Waterbody/Watershed</td>
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<td>Characterization</td>
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<td>Define Baseline Conditions</td>
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<td>Evaluate Alternatives</td>
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<td>Prepare LTCP and Submit to</td>
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* Pending DEC approval of DEP’s prior modification request.
Computer Models as Evaluation Tools

- 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)
- 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
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
Public Participation Plan Highlights

**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

February 2014
Kickoff Meeting
Present LTCP process & schedule, watershed characteristics & improvements, & solicit input on waterbody uses

Spring 2014
Public Meeting #2
Review proposed alternatives, related waterbody uses & water quality conditions

Winter 2014
Public Meeting #3
Present LTCP

DEP meets with community and representatives

June 2014
DEP develops LTCP per community feedback & submits LTCP to DEC

DEP revises LTCP as necessary per DEC’s review

Final Westchester Creek LTCP
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
- 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
- Real-time waterbody advisories
- Upcoming meeting announcements
- Other LTCP updates
Discussion and Q&A Session