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
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<th>Topic</th>
<th>Speaker</th>
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<td>Eric Landau</td>
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<td>• Summary of Previous Public Meetings</td>
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<td><strong>Green Infrastructure</strong></td>
<td>Angela Licata</td>
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<td><strong>Discussion and Q&amp;A Session</strong></td>
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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

Riverbay’s Legislative Committee Meeting on LTCP Process 4/24/2014

Existing Information Review

Data Collection & Analysis

Modeling

Alternatives Development & Evaluation

LTCP

DEC Review

Submitted LTCP 9/30/2014*

Kickoff Meeting 3/26/2014

Alternatives Review Meeting 9/9/2014

Final Plan Review Meeting TODAY

ONGOING PUBLIC/STAKEHOLDER INPUT

*DEP submitted supplemental documentation to DEC on 4/14/2015 and 8/7/2015 in response to their comments.
Date: March 26, 2014  
Location: Harry S. Truman High School  
# Attendees: 15

Presented on:

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

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<tr>
<th>Bacteria</th>
<th>Dry Weather (GM, #/100 mL)</th>
<th>Wet Weather (GM, #/100 mL)</th>
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<tbody>
<tr>
<td>Fecal Coliform</td>
<td>53 – 670</td>
<td>95 – 773</td>
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<td>Enterococci</td>
<td>17 – 38</td>
<td>26 – 207</td>
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- 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 Enter: 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

<table>
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<td><strong>Storage</strong></td>
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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*
Projected Annual Fecal Coliform Attainment

Compliance
= Attainment ≥ 95% for GM ≤ 200 #/100 mL

Sampling Locations

*Projections based on 2008 average rainfall year

ATTACHMENT 7

ANNEX C

ATTACHMENT 4:

Projected Annual Fecal Coliform Attainment

Compliance = Attainment ≥ 95%
for GM ≤ 200 #/100 mL

Sampling Locations

*Projections based on 2008 average rainfall year

ATTACHMENT 7

ANNEX C
Projected Annual Enterococcus Attainment

Compliance = Attainment ≥ 95% for GM ≤ 30 #/100 mL

*Projections based on 2008 average rainfall year

Sampling Locations

Freshwater

HR9
HR8
HR7

Tidal

HR3
HR2
HR1

Baseline

LTCP Recommended Plan

Projections based on 2008 average rainfall year
Projected Annual Dissolved Oxygen Attainment

Compliance = Attainment ≥ 95%
for DO ≥ 3.0 mg/L

*Projections based on 2008 average rainfall year
Projected Annual Dissolved Oxygen Attainment

Compliance = Attainment ≥ 95% for DO ≥ 4.8 mg/L

Sampling Locations

*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)

Before (362 MG/yr)  
- CSO Discharge: 142 MG/yr
- CSO Bacteria: 196

After (323 MG/yr)  
- CSO Discharge: 132 MG/yr
- CSO Bacteria: 105

Pre-WWFP Implementation  Post LTCP Recommendations

11% CSO Volume Reduction

14% Additional Bacteria Reduction
(Through disinfection of 65 MG/Yr at HP-024. This results in 24% bacterial reduction in Recreational Season)
Per constructability reviews and recent DEC Technical Meeting on Sept. 3rd, 2015:
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

Existing Information Review

Data Collection & Analysis

Modeling

Alternatives Development & Evaluation

LTCP

DEC Review

Submitted LTCP 6/30/2014*

Bronx Borough Cabinet Meeting on Public Outreach 2/5/2014

Bronx Community Board 9 Land Use Committee Meeting 2/10/2014

Bronx Borough Board with Borough Services Cabinet Meeting 3/5/2014

Bronx Community Board 10 Municipal Service Committee 3/11/2014

Kickoff Meeting 2/26/2014

Alternatives Review Meeting 5/7/2014

Final Plan Review Meeting TODAY

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

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<td>23 – 559</td>
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<td>4 – 74</td>
<td>12 – 460</td>
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- Current WQ Improvement Projects
  - Weir Modification to Regulators CSO 29A/29
  - Pugsley Parallel Sewer
  - Green Infrastructure
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 1\(^{st}\) through October 31\(^{st}\)
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

<table>
<thead>
<tr>
<th>System Optimization</th>
<th>Fixed Weir</th>
<th>Parallel Interceptor / Sewer</th>
<th>Inflatable Dams Bending Weirs Control Gates</th>
<th>Pump Station Expansion</th>
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<tr>
<td>CSO Relocation</td>
<td>Gravity Flow Tipping to Other Watersheds</td>
<td>Pumping Station Modification</td>
<td>Flow Tipping with Conduit/Tunnel and Pumping</td>
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<tr>
<td>Water Quality / Ecological Enhancement</td>
<td>Floatables Control</td>
<td>Dredging</td>
<td>Dissolved Oxygen Improvement</td>
<td>Flushing Tunnel</td>
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<td>Treatment Satellite:</td>
<td>Outfall Disinfection</td>
<td>Retention Treatment Basin (RTB) with Disinfection</td>
<td>High Rate Clarification (HRC)</td>
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<td>Centralized:</td>
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<td>WWTP Expansion</td>
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<td>Storage</td>
<td>In-System</td>
<td>Shaft</td>
<td>Tank</td>
<td>Tunnel</td>
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**Preferred Alternative** = *Continue to Implement Waterbody/Watershed Facility Plan (WWFP) Work*  
*(See Next Slide)*
WC Recommendation: Continue Ongoing WWFP Work

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

Legend
- CSO Outfalls
- Stormwater Outfall
- Sampling Locations
Projected Annual Fecal Coliform Attainment

Compliance = Attainment ≥ 95% for GM ≤ 200 #/100 mL

*Projections based on 2008 average rainfall year
Projected Annual Enterococcus Attainment

Compliance = Attainment ≥ 95%
for GM ≤ 30 #/100 mL

*Projections based on 2008 average rainfall year
Compliance = Attainment ≥ 95% for DO ≥ 4.0 mg/L

Sampling Locations

*Projections based on 2008 average rainfall year
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)
<table>
<thead>
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<th>LTCP Recommendation</th>
<th>Phase</th>
<th>Schedule</th>
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<tr>
<td>Continue Ongoing</td>
<td>Design</td>
<td>Completed</td>
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<tr>
<td>Waterbody / Watershed</td>
<td>Construction</td>
<td>Dec 2015 – Dec 2019</td>
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<td>Facility Plant</td>
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<td>(WWFP) Projects</td>
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<td>Weir Modifications</td>
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<td>to Regulators</td>
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<td>CSO-29A and CSO-29</td>
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<td>Pugsley Creek</td>
<td>Design</td>
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<td>Parallel Relief</td>
<td>Construction</td>
<td>Jun 2016 – Dec 2019</td>
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<td>Sewer</td>
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<td>Floatables Control</td>
<td>Estimated Construction Completion = 9 Years</td>
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<tr>
<td>at HP-011*</td>
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<td>from Bronx River LTCP Approval (See Next</td>
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Per constructability reviews for Bronx River LTCP and recent DEC Technical Meeting on Sept. 3rd, 2015:
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**
- 22 Bioswales Constructed
- 100 GI Assets in Construction or final design
- Porous Concrete Pilot
- Edenwald Retrofit – NTP issued

**Westchester Creek**
- 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
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
- NYC Waterbody Advisory Program
- Upcoming meeting announcements
- Other LTCP updates
Discussion and Q&A Session