Environmental Protection

Hutchinson River Combined Sewer Overflow Long Term Control Plan

Public Kickoff Meeting

Harry S Truman High School

March 26, 2014

Welcome & Introductions

Shane Ojar
DEP

Agenda

	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

Objectives

To meet the requirements of, and submit a Long Term Control Plan for Hutchinson River to the New York State DEC on September 30, 2014:

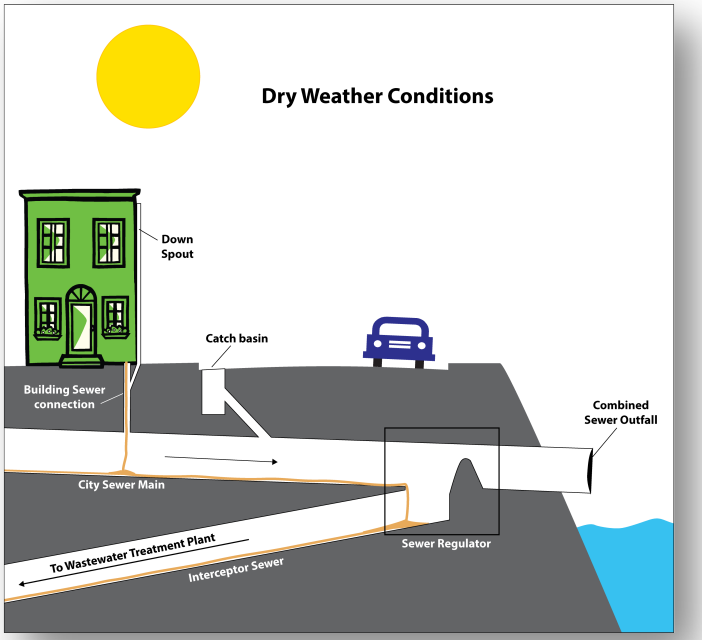
1. Provide background and overview of Long Term Control Plan process for Hutchinson River

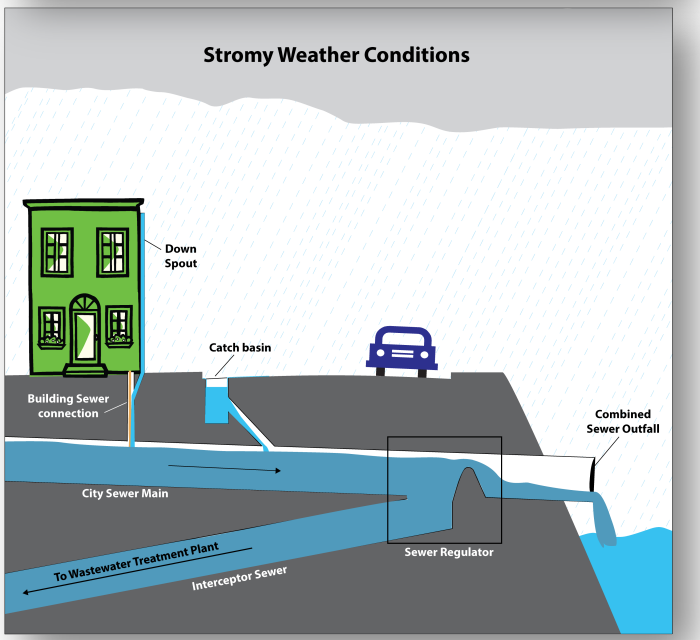
2. Present Hutchinson River watershed characteristics and status of waterbody improvement projects

3. Obtain public input on existing waterbody uses and future vision for Hutchinson River

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 New York 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.

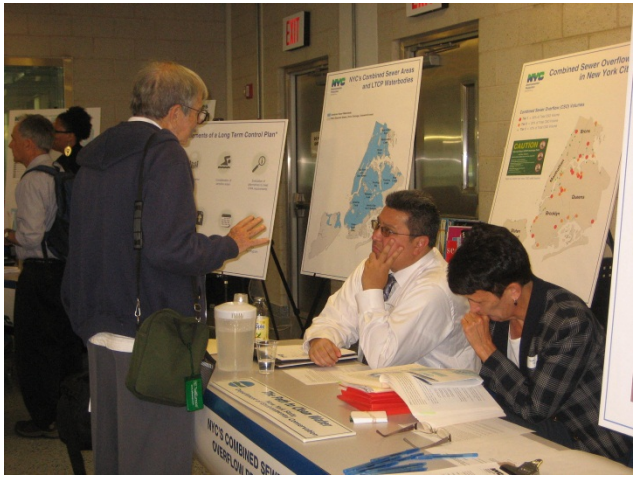




Stakeholder Input

DEP wants to hear from **you**!

- How do you and other community members/ stakeholders use Hutchinson River?
- What improvement measures or alternatives you would like DEP to consider and evaluate?
- What is your vision for Hutchinson River?
- How can DEP better involve Hutchinson River stakeholders?
- How much are you willing to pay to improve water quality in Hutchinson River?



LTCP Citywide Kickoff Meeting

NYC CSO Long Term Control Plans (LTCPs)

- What is a Long Term Control Plan?
  - Required under NYC SPDES permits in accordance with the Clean Water Act (CWA) and Federal CSO Control Policy; The CSO Consent Order establishes the time frame for submittal of plans.
  - Comprehensive evaluation of long term solutions, to reduce combined sewer overflows and improve water quality in NYC's waterbodies and waterways.

- The Long Term Control Plan Process:
  - Assesses feasibility of attaining current water quality standards and fishable/swimmable standards;
  - Builds off Waterbody/Watershed Facility Plans (WWFP) as the first phase of the planning process;
  - Requires robust, targeted public process; and
  - Identifies grey-green* infrastructure balance for different watersheds.

*Green: sustainable pollution reducing practices that also provide other ecosystem benefits.

*Grey: traditional practices such as pipes and sewers.

USEPA CSO LTCP Guidance

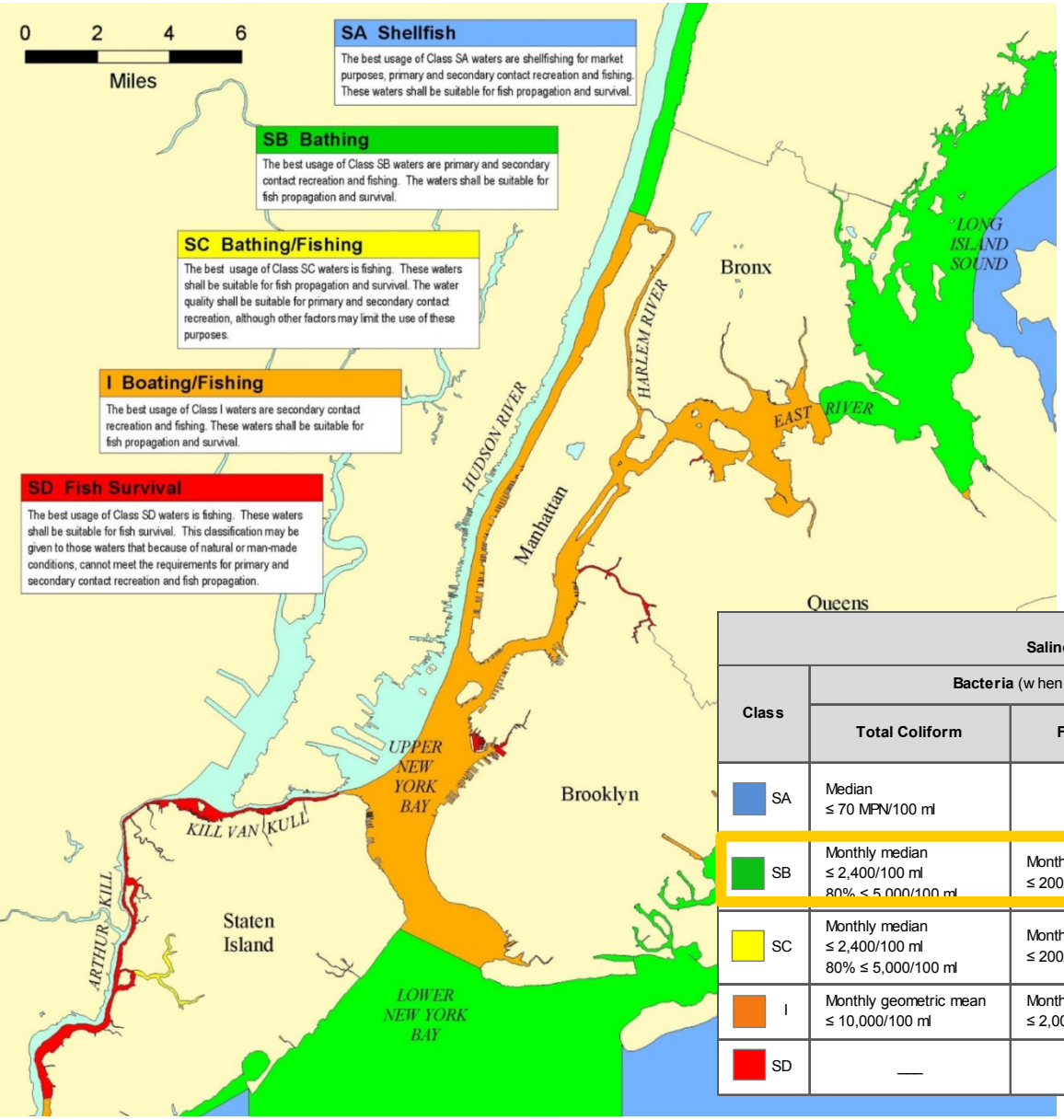
- 1994 Guidance for CSO Long Term Control Plans includes nine elements:
  1. Characterization, Monitoring, Modeling
  2. Public Participation
  3. Sensitive Areas
  4. Evaluation of Alternatives
  5. Cost Performance Considerations
  6. Operational Plan
  7. Maximization of Treatment at Existing Publicly Owned Treatment Plants
  8. Implementation Schedule
  9. Post-construction Monitoring Plan

- 2001 Guidance for Coordinating CSO Long Term Control Planning with Water Quality Standards Review

Waterbody & Watershed Characteristics

Keith Mahoney, P.E.
DEP

Current Water Quality Standards



- Best Use Designations
- Saline Surface Water Quality Standards
- **Hutchinson River– Class SB**
  - DO ≥ 4.8 mg/L (chronic) and
    DO ≥ 3.0 mg/L (acute, never less than)
  - Fecal Coliform ≤ 200 col /100 mL
  - Total Coliform ≤ 2,400 col /100 mL
  - Enterococci ≤ 35 col / 100mL

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	$DO_I = \frac{13.0}{2.80 + 1.84e^{-0.1I_f}}$ ≥ 3.0 mg/l (acute, never less than)
SB	Monthly median ≤ 2,400/100 ml 80% ≤ 5,000/100 ml	Monthly geometric mean ≤ 200/100 ml	Geometric mean ≤ 35/100 ml	$DO_I = \frac{13.0}{2.80 + 1.84e^{-0.1I_f}}$ ≥ 3.0 mg/l (acute, never less than)
SC	Monthly median ≤ 2,400/100 ml 80% ≤ 5,000/100 ml	Monthly geometric mean ≤ 200/100 ml	Geometric mean ≤ 35/100 ml	$DO_I = \frac{13.0}{2.80 + 1.84e^{-0.1I_f}}$ ≥ 3.0 mg/l (acute, never less than)
I	Monthly geometric mean ≤ 10,000/100 ml	Monthly geometric mean ≤ 2,000/100 ml	—	≥ 4.0 mg/l (acute, never less than)
SD	—	—	—	≥ 3.0 mg/l (acute, never less than)

DO_I = DO concentration in mg/l between 3.0 – 4.8 mg/l

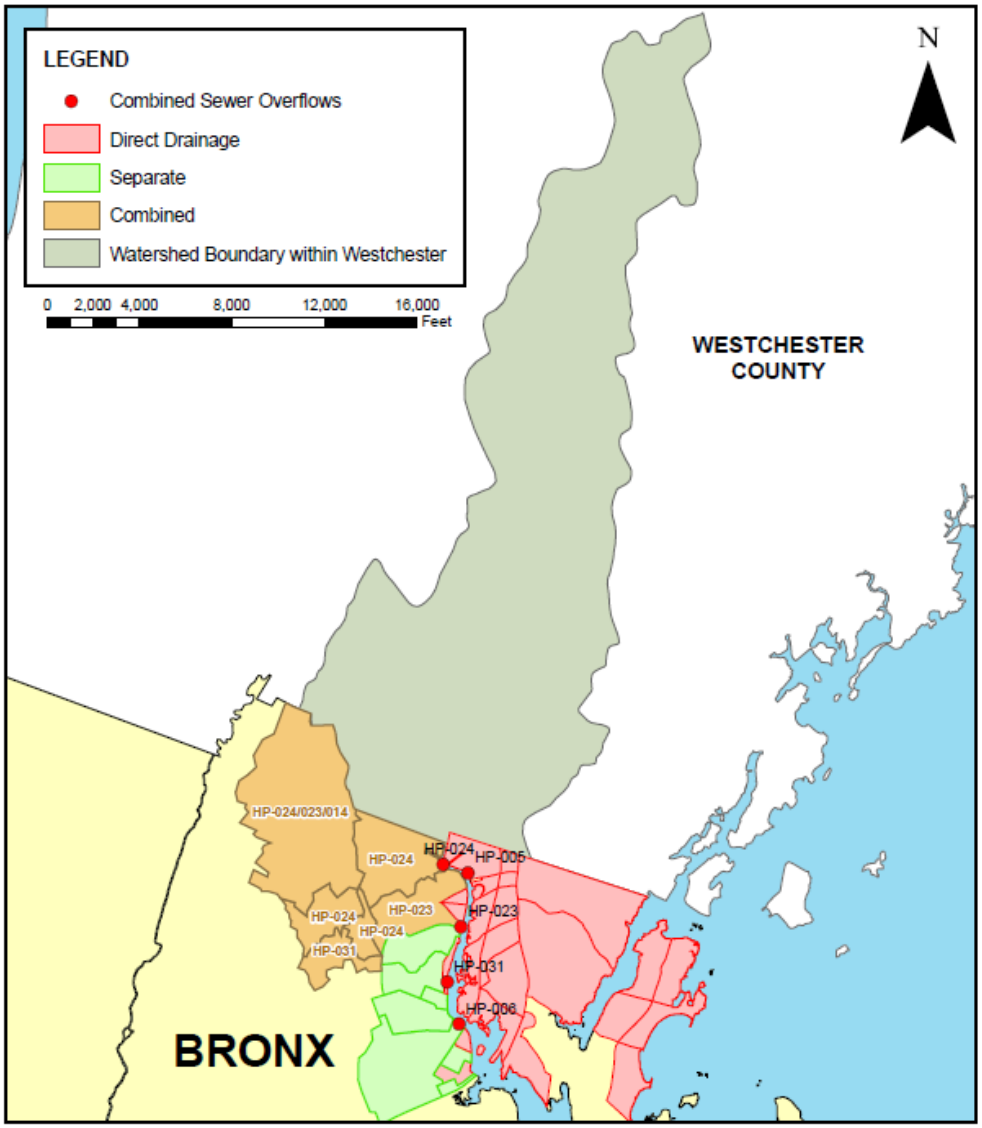
Hutchinson River Drainage Area Characteristics

- Drainage Area:

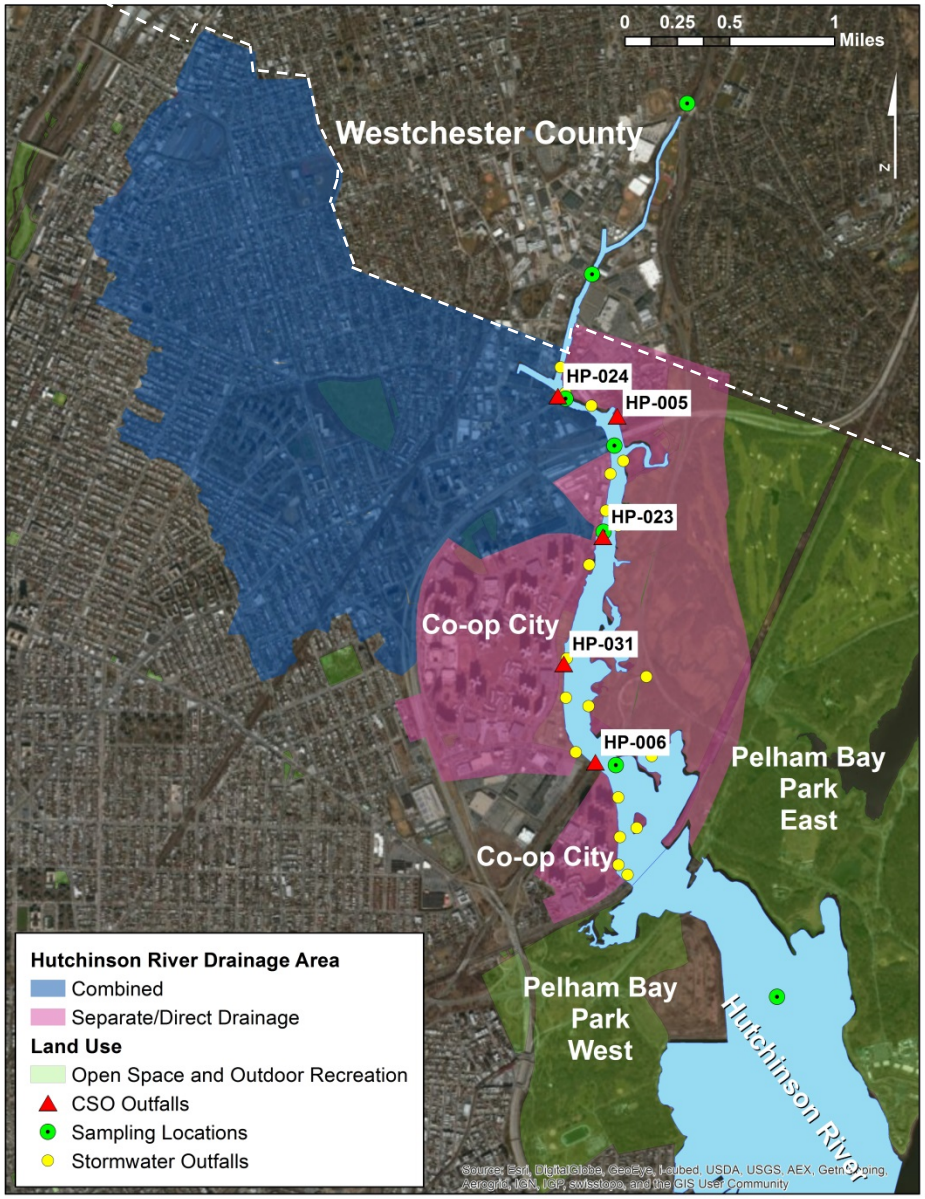
	NYC	Westchester
Acres	2,795	2,295
Impervious	49%	37.5%
Served by combined sewers	53%	0%

- Land Use (breakdown for NYC):
  - 43 % Residential
  - 30 % Open Space
  - 10 % Public Facilities

- Westchester County flows, loads, and impact on water quality to be updated and refined as part of LTCP process for Hutchinson River



Hutchinson River NYC Drainage Area

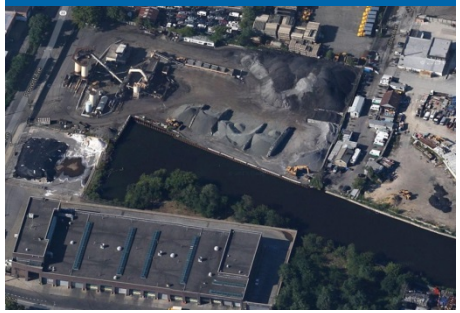


- Begins in Westchester County, flows through the Bronx into Eastchester Bay Tributary to East River
- Total NYC watershed drainage area is approximately 2,795 acres
- Classified by New York State DEC for primary contact recreation (Class SB) – Bathing and Fishing
- DEP wet weather discharges include:
  - 5 CSO Outfalls -
  - 18 Stormwater Outfalls -

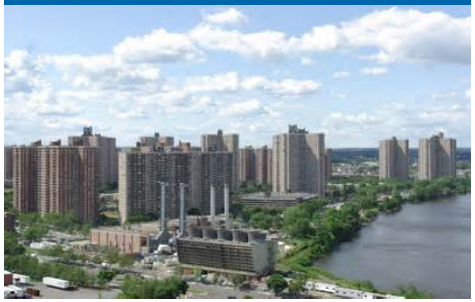
Hutchinson River: Current Uses

- Current Water Uses:
  - Commercial / Recreational Boating
- Current Land Uses:
  - Industrial / Residential / Parkland

1) Industrial Area

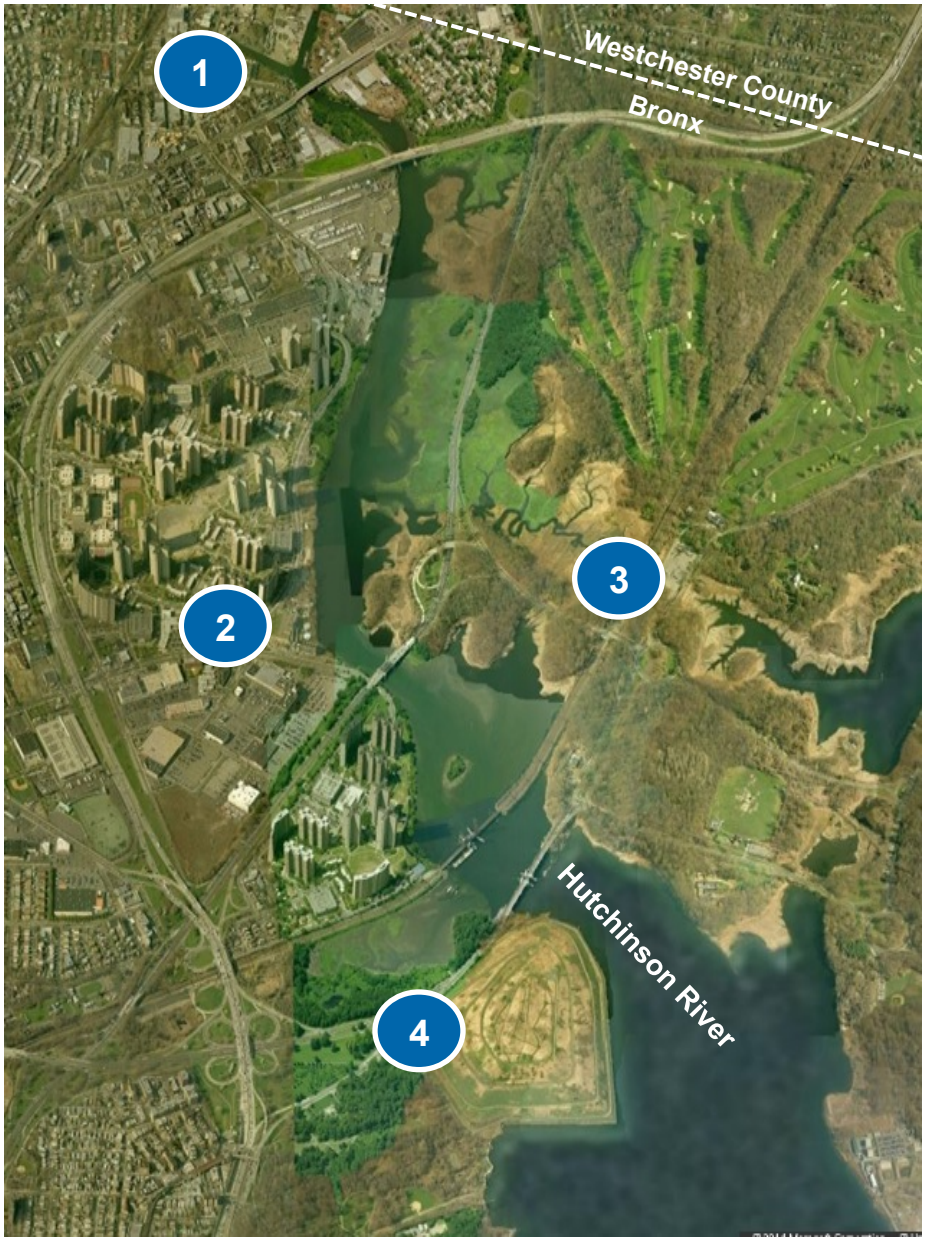


2) Co-op City



3) Pelham Bay Park

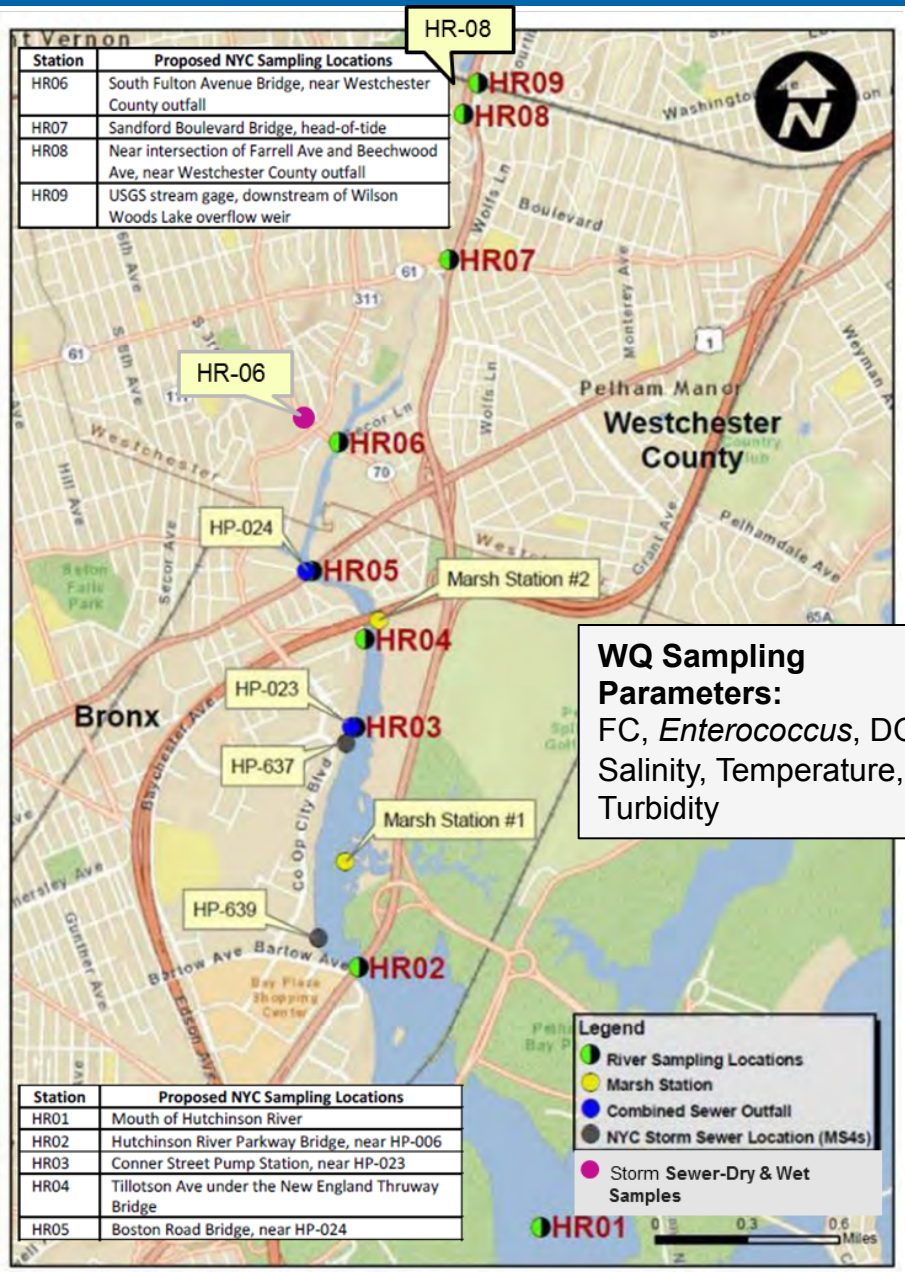
4) Pelham Bay Park Landfill



Hutchinson River: 2012 Data Collection

Sample Type	No. Locations	
	NYC	WC
In-stream Flow during Dry and Wet Weather	5	4
SW Outfall	2	2
CSO Outfall (HP-23 and HP-24)	2	0
Marshland	2	0
Hydrodynamic (salinity/ temperature)	2	0

Flow Monitoring	No. Locations	
	NYC	WC
In-stream Flow	0	1
SW Outfall	2	2
CSO Outfall	2	0



Station	Proposed NYC Sampling Locations
HR06	South Fulton Avenue Bridge, near Westchester County outfall
HR07	Sandford Boulevard Bridge, head-of-tide
HR08	Near intersection of Farrell Ave and Beechwood Ave, near Westchester County outfall
HR09	USGS stream gage, downstream of Wilson Woods Lake overflow weir

Station	Proposed NYC Sampling Locations
HR01	Mouth of Hutchinson River
HR02	Hutchinson River Parkway Bridge, near HP-006
HR03	Conner Street Pump Station, near HP-023
HR04	Tillotson Ave under the New England Thruway Bridge
HR05	Boston Road Bridge, near HP-024

WQ Sampling Parameters:
FC, *Enterococcus*, DO, Salinity, Temperature, Turbidity

Hutchinson River: Water Quality Sampling Results

- Approximately 10 Dry samples per station
- Approximately 48 Wet samples per station

Geomean (Average) of Sampling Data

(Shaded portion is Westchester County)

River Station	Enterococci (#/100ml)		Fecal Coliform (#/100ml)	
	Dry	Wet	Dry	Wet
HR09	179	618	589	1,495
HR08	7,606	4,964	12,253	10,132
HR07	1,010	2,264	3,973	5,377
HR06	55	313	140	1,134
HR05	31	207	184	684
HR04	34	112	467	521
HR03	38	92	670	773
HR02	26	58	381	516
HR01	17	26	53	95

Hutchinson River Water Quality Current Improvement Projects

Mikelle Adgate
DEP

Hutchinson River – Green Infrastructure

DEP is currently investing **$18 million** in green infrastructure in the Hutchinson River Watershed:

- Area-Wide Contracts with the Department of Design and Construction
- Neighborhood Demonstration Area*
- Edenwald Houses, public property retrofit with the New York City Housing Authority

*This project was undertaken in connection with the settlement of an enforcement action taken by New York State and DEC for violations of New York State law and DEC regulations.

Right-of-way Bioswale

Types of Green Infrastructure

NYC Environmental Protection

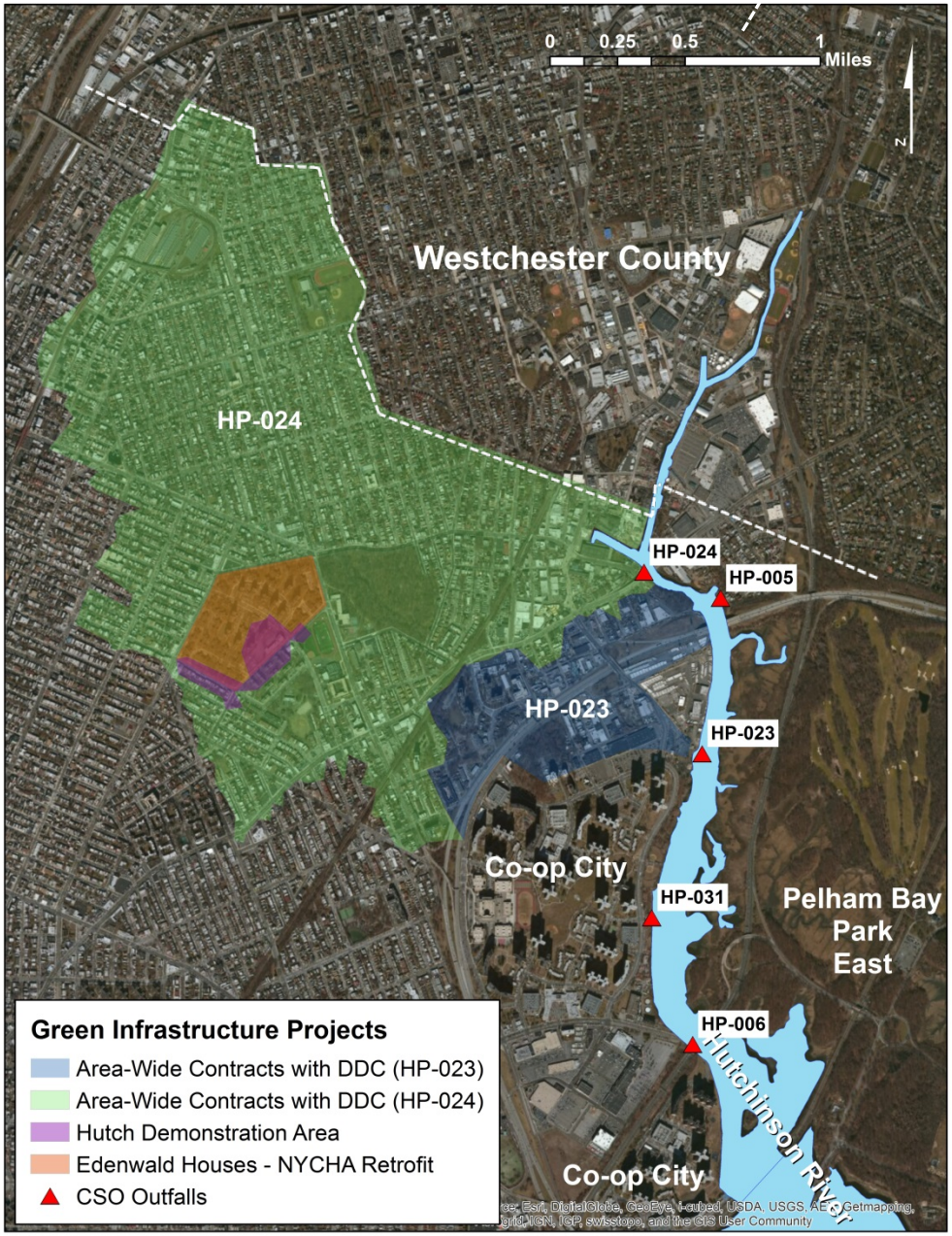
Stormwater Greenstreet

Blue/Green Roof

Right-of-way Bioswale

Green Infrastructure in Hutchinson River

- DEP is investing approximately $18 million dollars in three large projects
  - Edenwald Houses – NYCHA Retrofit
  - Hutchinson River Neighborhood Demonstration Area*
  - Area-wide Contracts with DDC
- Area-wide contracts allow 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



* This project was undertaken in connection with the settlement of an enforcement action taken by New York State and DEC for violations of New York State law and DEC regulations.

Public Retrofit: Edenwald Houses, Bronx

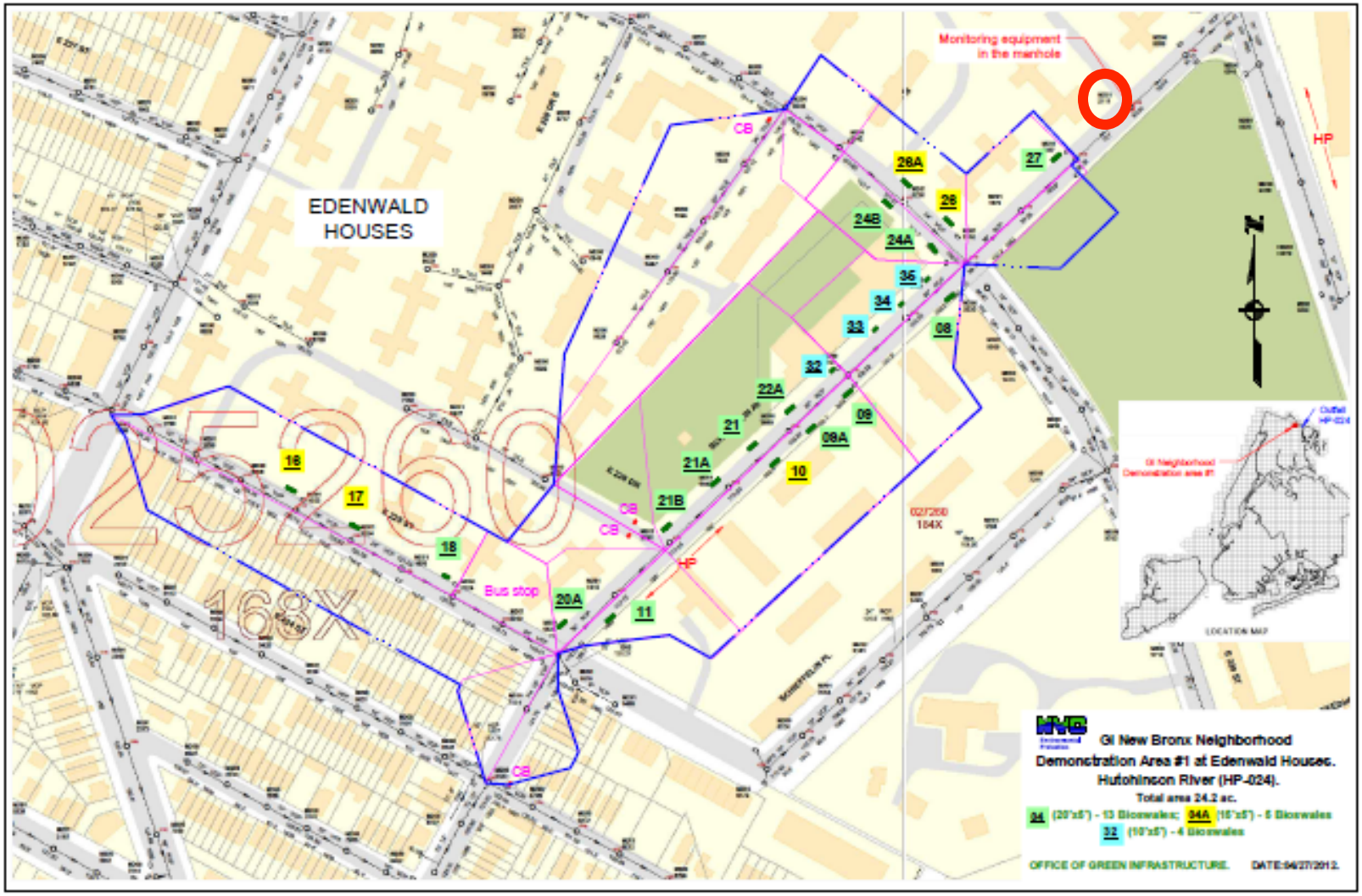
Construction Start:
February 2014

Construction End:
Spring 2016

Type of green infrastructure

- Downspout Disconnect
- Rain Garden
- Porous Paving

Hutchinson River – Neighborhood Demonstration



- **Spring 2012** – Monitoring equipment installed
- **Spring 2013** – 22 Right-of-way Bioswales constructed
- **August 2014** - Post-Construction Monitoring Report Due

Outreach and Engagement

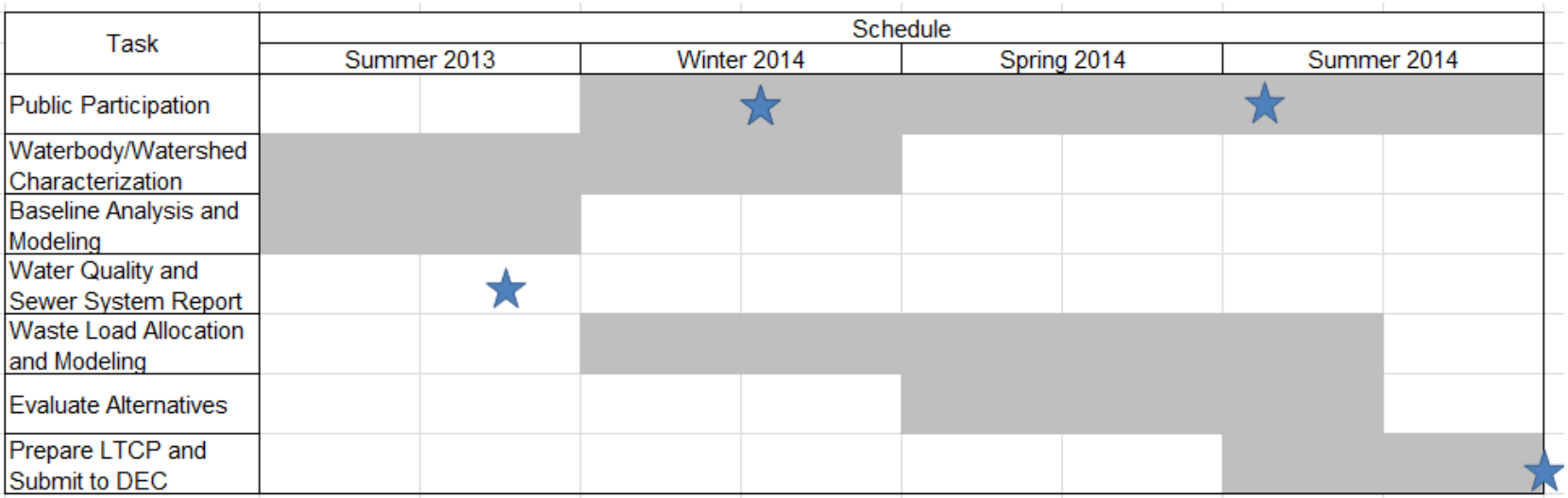
- In 2012, DEP presented to City Council Member Larry Seabrook and Community Board 12
- DEP and NYCHA have presented to Edenwald Residents on multiple occasions
- BioswaleCare - a free environmental stewardship and training workshop was held at Edenwald Houses in Spring 2013

Hutchinson River LTCP Development

Keith Mahoney, P.E.

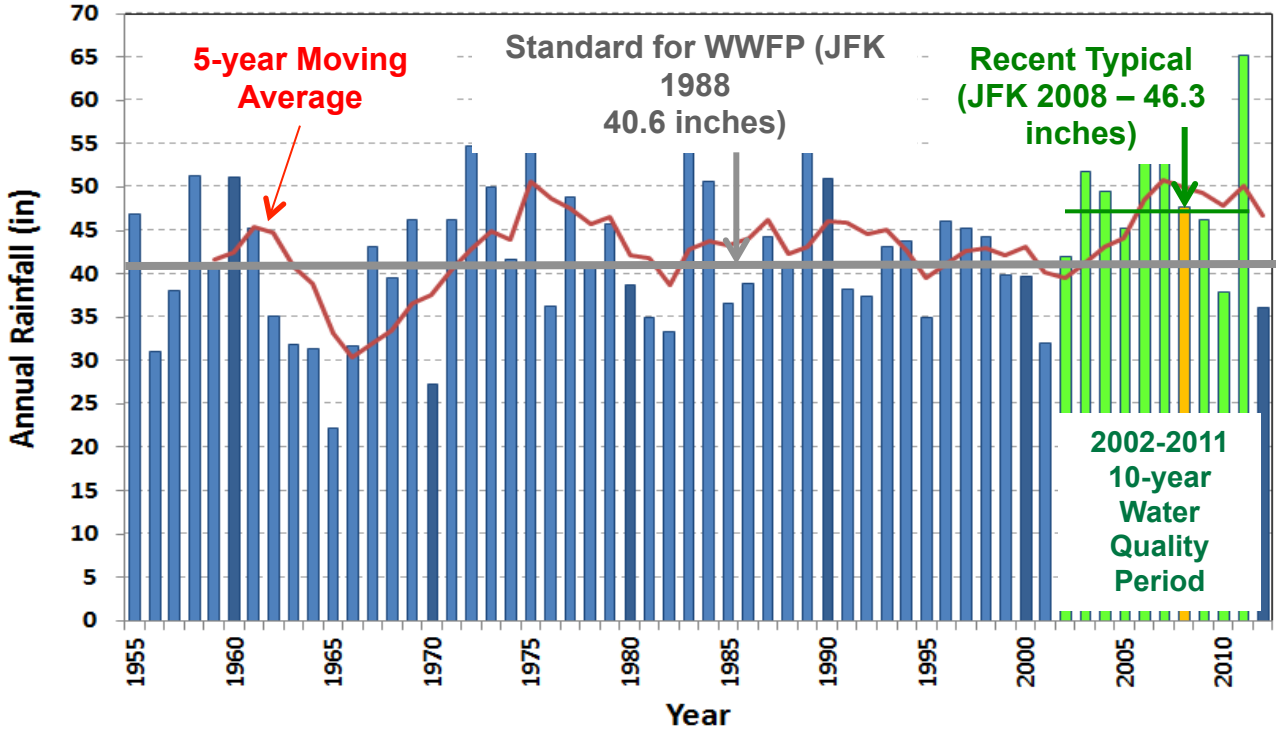
DEP

Hutchinson River LTCP Workplan Schedule



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



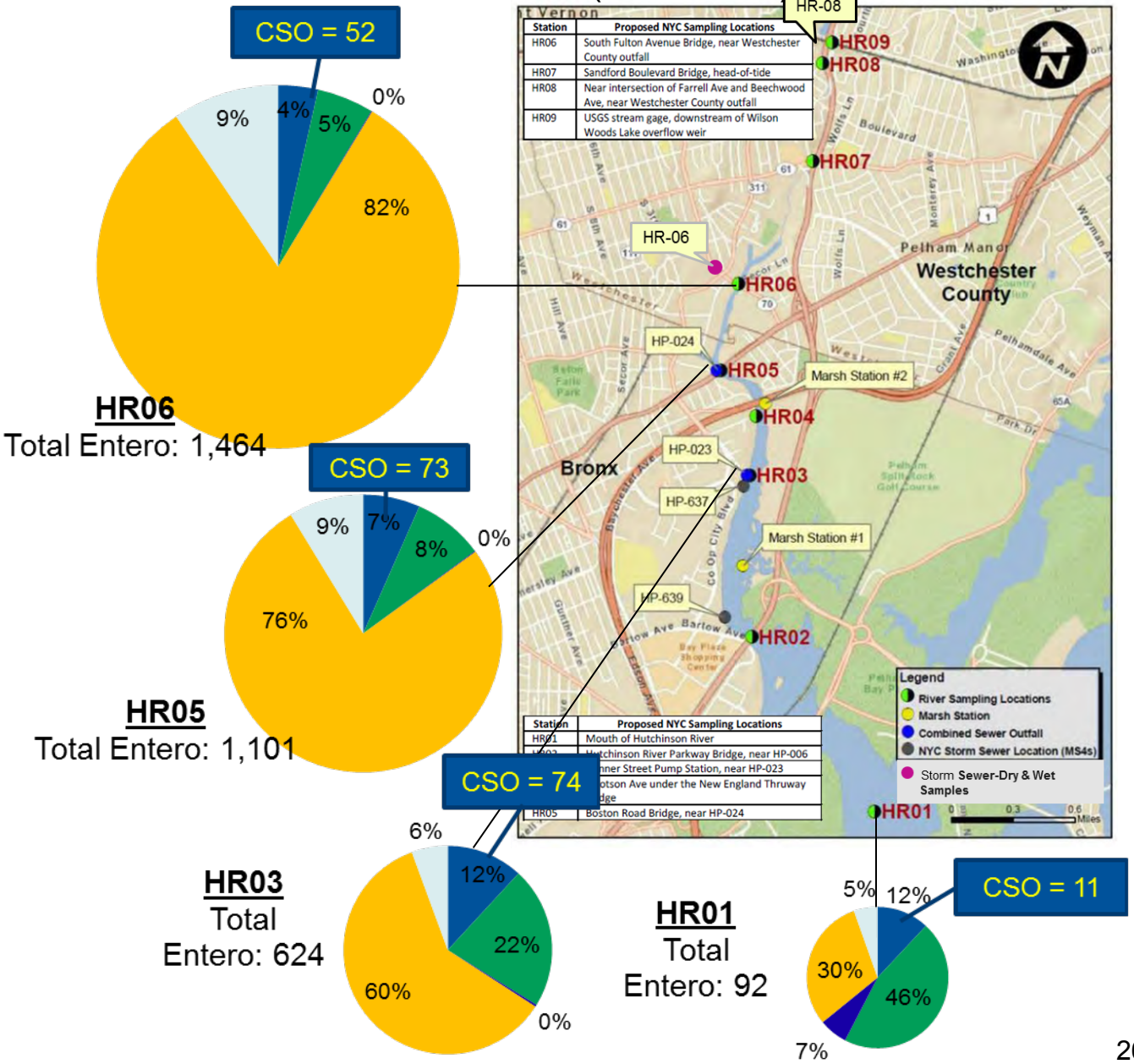
Component Contribution for Anticipated Entero Standard

(Maximum 30-d Enterococci Geomean, all units in (col /100mL)

Contributing Component

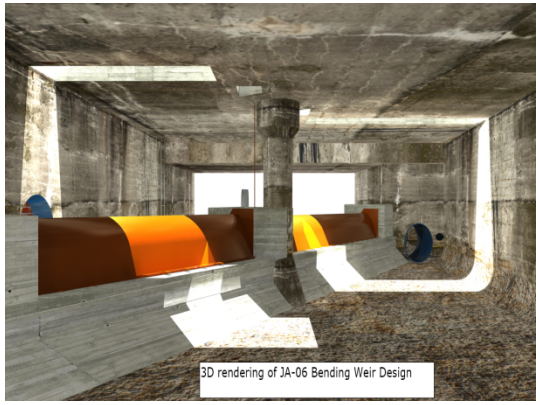
- NYC CSO
- NYC Stormwater
- Hutchinson River
- WC Stormwater
- East River

Assumes Westchester County illicit connections removed, and Green Infrastructure implemented (14%)



Potential LTCP Alternatives

- Shown below are some examples of CSO controls that are considered in the LTCP and ranked based on 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

Shane Ojar
DEP

Public Participation

- **Goal:** Raise awareness about, foster understanding of, and encourage input on the development of waterbody specific and citywide LTCPs.

- **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
  - Variety of communication tools including program website, social media, advisories and notifications

Public Participation – Hutchinson River

March 2014

Kickoff Meeting

Present LTCP process & schedule, watershed characteristics & improvements, & solicit input on waterbody uses

Summer 2014

Public Meeting #2

Review proposed alternatives & costs, related waterbody uses & water quality conditions

Spring 2015

Public Meeting #3

Present LTCP

Final Hutchinson River LTCP

September 2014

DEP develops LTCP, per community feedback & submits LTCP to DEC

DEP revises LTCP, as necessary, per DEC's review

Next Steps

- Hutchinson River LTCP Public Meeting #2, Summer 2014
  - Objective: Review proposed alternatives and related waterbody uses and revisiting water quality attainments

- Comments can also 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
  - Real-time waterbody advisories
  - Upcoming meeting announcements
  - Other LTCP updates

Discussion and Q&A Session

Water Quality Goals of the CSO LTCPs

- To provide for continuing attainment of existing water quality standards and compliance with other Clean Water Act requirements.

- Where existing water quality standards do not meet the Fishable/ Swimmable (F/S) goals of the Clean Water Act, or where the proposed alternative set forth in the LTCP will not achieve existing water quality standards or the F/S goals, the Long Term Control Plans will include a Use Attainability Analysis (UAA).

- The Use Attainability Analysis will assess the waterbody's highest attainable use, which the State will consider in adjusting water quality standards, classifications, or criteria and developing waterbody-specific criteria. Any alternative selected by a LTCP will be developed with public input.

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)