



2011 Modification to the 2005 CSO Consent Order

Public Meeting
November 9, 2011



Agenda



- ❖ Introduction
- ❖ History of CSO Program
- ❖ Comparison of 2005 and 2011 Order
- ❖ LTCP Process
- ❖ LTCP Green Elements
- ❖ Questions & Comments
- ❖ Next Steps




History of CSO Program and Comparison of 2005 and 2011 Order

Keith Mahoney
NYC DEP

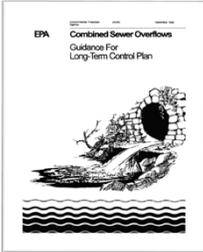
3

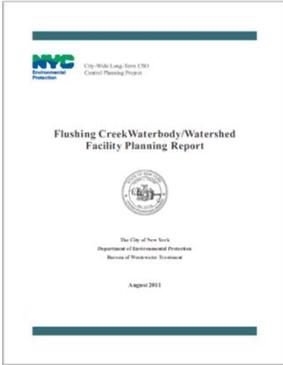


Timeline of NYC CSO Program

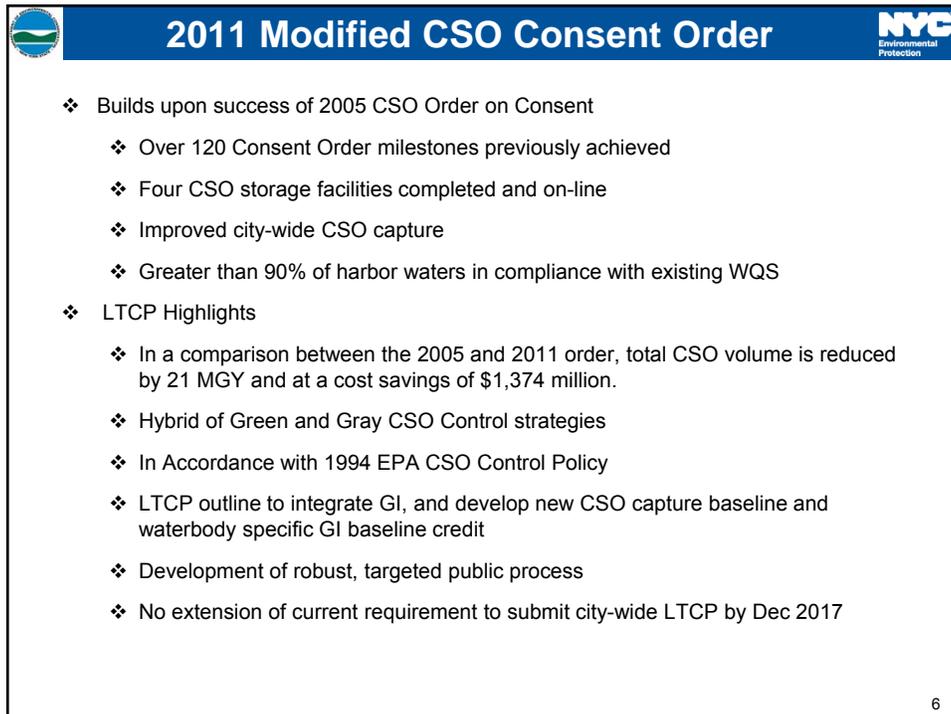
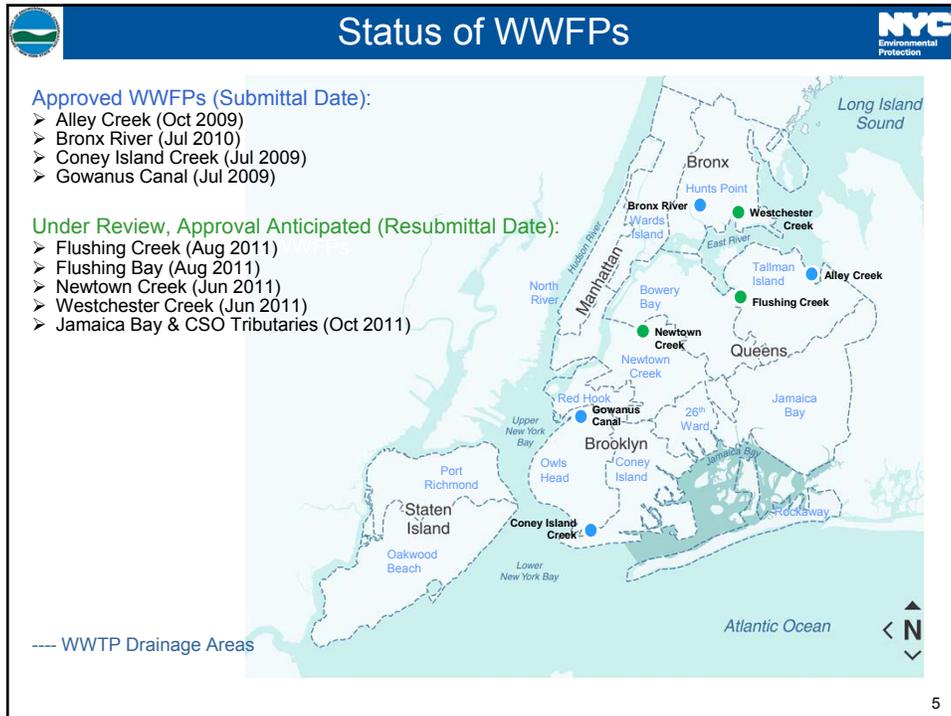


- 1992 CSO Consent Order
- 1994 CSO Control Policy
- 1999 Use and Standards Attainment Contract
- 2000 CSO Policy Becomes Law
- 2003 CSO Facility Plans submitted to DEC
- 2005 CSO Consent Order
- 2007 DEP submits WWFP (Draft LTCP)
- 2008 Minor Modification to CSO Order
- 2010 DEP Issues GI Plan
- 2011 CSO Consent Order

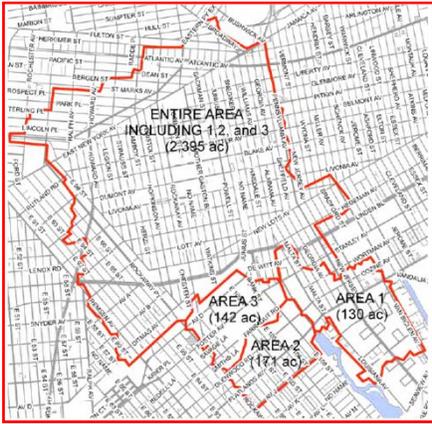
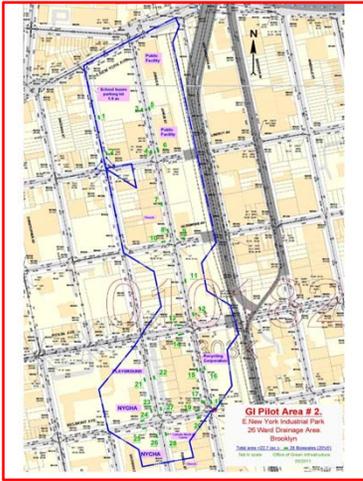


4



|  2011 Modified CSO Consent Order (Cont.) | |
|--|---|
| \$200,000 | Payable penalty for missed milestones |
| \$150,000 | To support development of Hutchinson River LTCP, conduct water quality sampling, flow monitoring and analysis, including portion of river in Westchester County |
| \$1 million | Escrow payment to incentivize acceleration of 26 th Ward substitution projects |
| \$2 million | EBP for two major full scale GI demonstration projects in Newtown Creek and the Bronx |
| \$3 million | EBP to expand the existing NYC private GI grant program |
| \$1.4 billion | For cost-effective grey alternatives in lieu of costly storage tanks and wet weather expansion projects in 2005 Order |
| \$187 million | Commitment for GI in next four years to meet first milestone in 2015 |

|  Jamaica Bay CSO | |
|---|--|
| High Level Storm Sewer Separation | 26th Ward GI Demo Project |
|  |  |
| <ul style="list-style-type: none"> • Cost Savings = \$418 million • CSO Volume into Jamaica Bay & Tribs Reduced = 224 MGY | |



Jamaica Tributaries CSO

Bending weirs and parallel interceptor



- Cost Savings for Jamaica Tributaries only = \$454 million,
- CSO Volume Into Jamaica Bay & Tribs Reduced = 224 MGY

9



Newtown Creek CSO

Enhanced aeration, bending weirs, and floatables control



- Cost Savings = \$301 Million, Slight increase in CSO at 135 MGY
- Improved attainment for dissolved oxygen levels of 3 mg/L

10



Westchester Creek CSO



Regulator modifications at CSO29 & 29A



Pugsley Creek parallel sewer



- **Cost Savings = \$219 Million**
- **Additional CSO Reduction = 148 MGY**

11



LTCP Public Participation Process



- ❖ NYC DEP will craft a robust public engagement program designed to inform the public and stakeholder groups about the LTCPs.
 - ❖ Public participation plan will be available on both DEP and DEC's website by Jan. 1, 2012.
 - ❖ Detailed plan will include information on DEP's strategies to both inform and work with local communities across the City of New York.
 - ❖ Engagement will be on both a technical and non-technical level to ensure all interested parties can easily access the plan and will provide various methods for feedback from the public and NGOs.
- ❖ Forms of engagement are listed below, they include, but are not limited to:
 - ❖ Public meetings in all five Boroughs
 - ❖ Biannual technical meetings provided to stakeholder groups and the public
 - ❖ Online presentations that allow for feedback so that citizens anywhere in NYC can access the plan and have their voices heard
 - ❖ Presentations to elected officials and all 59 NYC Community Boards
 - ❖ The development of online and print materials available on the web and at multiple locations across the city

12



LTCP Process

Gary Kline, P.E.
NYS DEC

13



USEPA CSO LTCP Guidance

- ❖ 1994 Guidance for CSO Long Term Control Plans
 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 POTW
 8. Implementation Schedule
 9. Post construction Monitoring Plan

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

14

NYC CSO LTCP



❖ 2005/2011 NYC CSO Administrative Consent Orders

- Two Phase Planning Process
 - Waterbody-Watershed Facility Plans
 - Development of cost-effective grey projects to achieve existing WQS
 - Paerdegat Basin Storage tank
 - Alley Creek Storage tank
 - Gowanus Canal Pumping Station
 - Long Term Control Plans
 - Assess feasibility of attaining the goals of the CWA
 - Incorporate impacts of NYC green infrastructure program

15

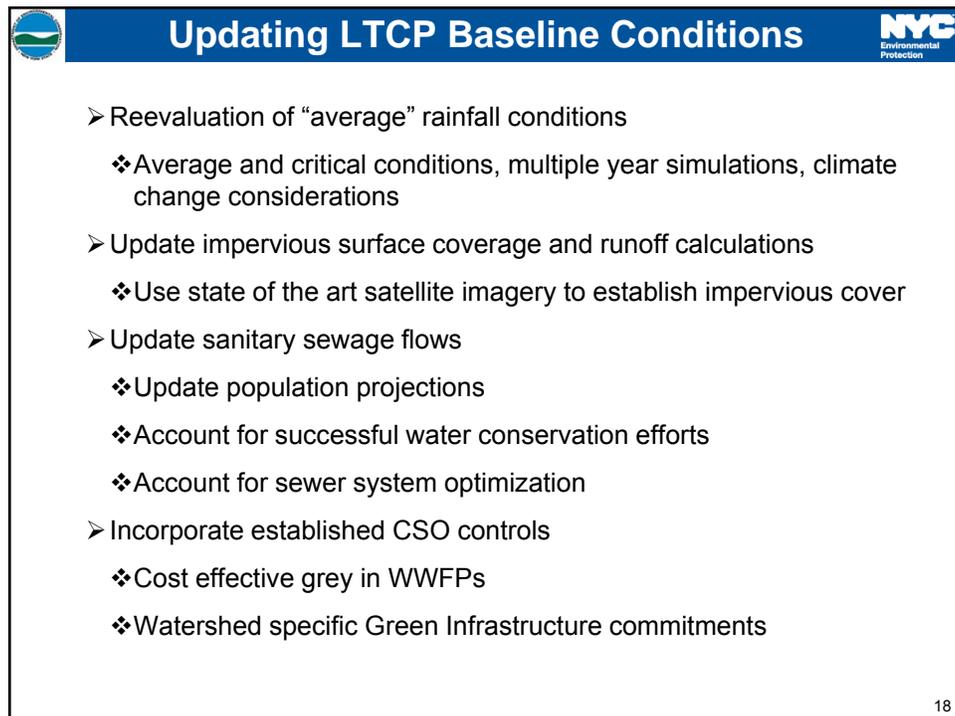
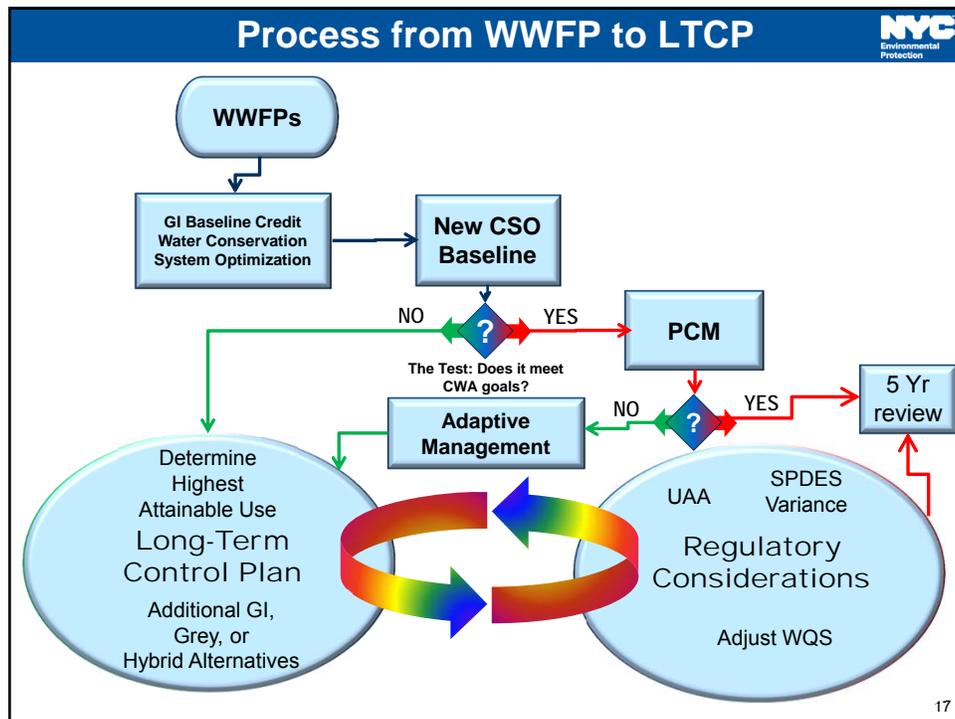


Water Quality Goals of the CSO LTCPs



- ❖ LTCPs to provide for attainment of existing water quality standards and compliance with other Clean Water Act (CWA) requirements.
- ❖ Where existing water quality standards do not meet the Section 101(a)(2) 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 101(a)(2) goals, the LTCP will include a Use Attainability Analysis.
- ❖ The UAA 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 to meet the goals listed above.

16





Integrating City-wide GI into LTCPs

- ❖ Establish specific relationship between Stormwater Detention/Capture and CSO Reduction
- ❖ Use of Full-scale GI demonstration projects
- ❖ Watershed analysis to assess Cost-Effective GI opportunities and CSO Reduction
- ❖ Determine projected 20 year CSO reduction for inclusion in LTCP CSO reduction baseline performance
- ❖ Model LTCP Baseline WQ Conditions
 - ❖ Projected CSO Volumes and Loadings after the WWFPs
 - ❖ Implementation of GI
 - ❖ System optimization
 - ❖ Conservation

19



LTCP Alternatives Analysis

- ❖ Establish Performance Gap from updated baseline conditions
 - ❖ CSO Volumes and Loadings Needed to Attain Current Water Quality Standards
 - ❖ CSO Volumes and Loadings That Would be Needed to Support the Next Highest Use and/or Swimmable/Fishable Uses
- ❖ Matrix of Potential CSO Reduction Alternatives To Close Performance Gap from Baseline
 - ❖ Other Grey Infrastructure
 - ❖ Green Infrastructure (beyond LTCP baseline credit)
 - ❖ Hybrid Green/Grey Alternatives
- ❖ CSO Reductions and Water Quality Impact of Retained Alternatives
- ❖ Cost Estimates for Retained Alternatives
- ❖ Cost-Attainment Curves for Retained Alternatives
- ❖ Select alternative to fill performance gap and achieve WQ goals

20



Review and Evaluation of LTCP WQ Goals



- ❖ Complying with Clean Water Act Goals
 - “It is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved”
- ❖ Process as set forth in 2011 modified consent order
 - Where the recommended alternative set forth in the LTCP will not achieve these goals, the LTCP will include a Use Attainability Analysis (UAA).
 - The UAA is a structured scientific assessment of the physical, chemical, biological and economic factors affecting the attainment of a waterbody’s use. The UAA will incorporate post-construction water quality monitoring data.
 - The UAA will assess and determine the waterbody’s **highest attainable use**, which the State will consider in adjusting water quality standards, classifications, or criteria and developing waterbody-specific criteria. Possible outcomes include:
 - **Recommending partial use standards or seasonal uses for certain waterbodies**
 - **Developing wet weather advisories**
 - The UAA must recognize the importance of working with stakeholders, local, state, and federal partners during the process in determining “highest attainable use” and selecting LTCP alternatives to improve water quality within all city-wide drainage basins to support those uses; and remain committed to this long term goal.
 - In many waterbodies the UAA may support the **upgrade** of current designated uses.

21



LTCP Submittal Dates



| CSO Watershed | LTCP Due Date |
|---------------------------------|----------------|
| Alley Creek LTCP | June 2013 |
| Coney Island LTCP | June 2014 |
| Hutchinson River LTCP | September 2014 |
| Flushing Creek LTCP | December 2014 |
| Bronx River LTCP | June 2015 |
| Gowanus Canal LTCP | June 2015 |
| Jamaica Tributaries & Bay LTCP* | June 2016 |
| Westchester Creek LTCP | June 2016 |
| Flushing Bay LTCP | June 2017 |
| Newtown Creek LTCP | June 2017 |
| Citywide LTCP** | December 2017 |

*The 2005 Order required separate LTCPs for the Jamaica Tributaries and Jamaica Bay. They are now to be combined into a single LTCP under this Order.

**The Citywide LTCP shall include the East River and Open Waters.

22

LTCP Green Elements

Angela Licata
NYC DEP

23



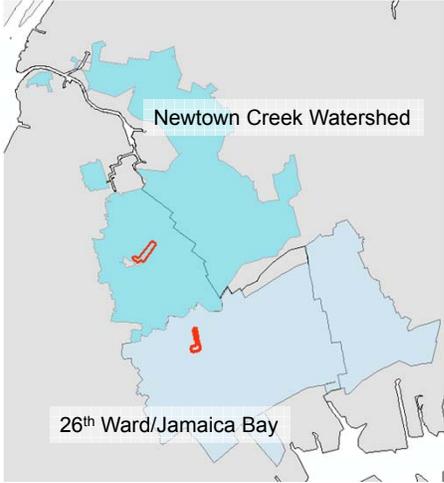
GI Demonstration Projects

Bronx River Demonstration Area



Bronx River Watershed

Newtown Creek and Jamaica Bay Demonstration Areas



Newtown Creek Watershed

26th Ward/Jamaica Bay

24

GI Demonstration Project Milestones



| Watershed: | 26 th Ward | Bronx River | Newtown Creek |
|---|-----------------------|-------------|---------------|
| 1. Submit Engineering Report and Design | Mar 2012 | Apr 2012 | Jul 2012 |
| 2. Notice to Proceed to Construction | Jun 2012 | Aug 2012 | Oct 2012 |
| 3. Complete Construction | Dec 2012 | Apr 2013 | May 2013 |
| 4. Submit Phasing of PCM Report | Oct 2013 | Nov 2013 | Dec 2013 |

GI Demonstration Projects



- ❖ Will field verify the concepts proposed in the GI Plan on a neighborhood scale
- ❖ Will complement existing pilots that have been undertaken on an installation scale
- ❖ Will be designed to maximize stormwater capture and reduction of CSOs or related wet weather water quality impacts originating from the Demo areas



Citywide GI Metrics



Initial GI Application Rate:

- ❖ Target includes control of one inch of rainfall on 1.5% of impervious surfaces in combined areas by 2015

CSO Performance Metrics:

- ❖ DEP must submit to DEC by June 30, 2016 and include:
 - Certification that initial GI application rate achieved
 - Cumulative Citywide CSO volume reduction associated with initial GI application rate
 - "Citywide baseline CSO reduction credit" for 10% GI application rate
 - Equivalency rates for CSO volume reductions and 2020, 2025 and 2030 implementation cycles
- ❖ DEP may submit approvable contingency plans one year following close of each implementation cycle, as necessary, and include:
 - Demonstration that best efforts did not attain CSO performance metrics
 - Identification of gray and green infrastructure projects sufficient to address shortfall in CSO volume reduction

27

Citywide GI Milestones



- ❖ GI Demonstration Projects – 2012-2013 plus PCM
- ❖ Initial GI Application Rate (1.5%) – December 31, 2015
- ❖ CSO Performance Metrics – June 30, 2016
- ❖ Subsequent GI Application Rates:
 - 4% by December 31, 2020
 - 7% by December 31, 2025
 - 10% by December 31, 2030
- ❖ Approvable Contingency Plan (one year following close of each implementation cycle above as necessary) or:
 - June 30, 2021
 - June 30, 2026
 - June 30, 2031

28

GI Annual Report



DEP must submit the following information annually as a stand-alone report or as part of the CSO BMP report:

- ❖ Institutional steps taken
- ❖ Results from monitoring of demonstration projects
- ❖ Material design changes and plans
- ❖ Planned and built green infrastructure installations
- ❖ Acreage management and percent of impervious surfaces
- ❖ Action plan for following year

29



Questions and Comments

30

Next Steps



- ❖ Public comment period concludes on November 18, 2011
- ❖ Comments can be sent to:
 - ❖ Gary Kline of the New York State DEC at: gekline@gw.dec.state.ny.us
 - ❖ Keith Mahoney of the New York City DEP at: kmahoney@dep.nyc.gov
- ❖ WWFPs available online at:
www.hydroqual.com/projects/ltcp/wbws

| | |
|--------------------|-------------------|
| Alley Creek | Bronx River |
| Coney Island Creek | Flushing Bay |
| Flushing Bay | Gowanus Canal |
| Newtown Creek | Westchester Creek |