STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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In the Matter of the Violations of Article 17 of the Environmental Conservation Law and Part 750, *et seq.*, of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York:

ORDER ON CONSENT
(CSO Order Modification to CO2-20000107-8)

-by-

The City of New York and
The New York City Department of Environmental Protection,

DEC Case No.
CO2-20110512-25

Respondents.

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WHEREAS:

1. The Department of Environmental Conservation ("the Department") is an executive agency of the State of New York with jurisdiction to enforce the environmental laws of the State, pursuant to the Environmental Conservation Law ("ECL"), Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York ("6 NYCRR"), and Orders issued thereunder.

2. The Department has jurisdiction over the abatement and prevention of pollution to the waters of the State pursuant to Article 17 of the ECL and 6 NYCRR Part 750, *et seq.* This jurisdiction also authorizes the Department, as a State agency with an approved program per Sections 318, 402 and 405 of the federal Clean Water Act ("CWA"), 33 U.S.C. Section 1251, *et seq.*, to regulate the discharge of pollutants from point sources into waters of the State in conformity with the CWA.

3. Pursuant to its authority to protect the waters of the State, the Department administers the State Pollutant Discharge Elimination System ("SPDES") permit program, ECL §17-0801, *et seq.* In general, the SPDES program prohibits any discharge of pollutants to the waters of the State without a permit establishing pollutant limitations and treatment requirements. Thus, SPDES permits set certain effluent limitation parameters, determined according to ECL §17-0809 and 6 NYCRR Part 750-1.11, in order to avoid contravention of mandated water pollution control requirements and water quality standards ("WQS"). Those conditions address not only the allowable range of parameters for discharge of pollutants to waters of the State, but also the manner in which the permittee is to operate, maintain, monitor and report on its regulated facilities and activities.

4. Combined sewer overflows ("CSOs") are discharges of untreated domestic sewage from combined sewer systems, and industrial wastewaters, combined with stormwater. CSOs occur when wet weather flows are in excess of the capacity of combined sewer systems and/or the Water Pollution Control Plants they serve. CSO discharges can contribute to violations of state

WQS. CSOs are "point sources" subject to NPDES permit requirements, including both water quality-based and technology-based requirements of the CWA.

5. The New York City Department of Environmental Protection ("DEP"), a municipal agency, and the City of New York ("the City") (collectively referred to herein as "Respondents") own, operate and are responsible for the City's 14 Municipal Water Pollution Control Plants (collectively referred to as the "WPCPs"), which process most of the sewage generated within the City, as well as the City's combined sewage system, related pump stations, sewer regulators, CSO storage facilities and other appurtenances related thereto. Respondents discharge wastewater combined with stormwater from approximately 426 CSO outfalls within the City of New York.

6. Previously, the Department and Respondents entered into CSO-related Orders on Consent dated June 26, 1992 (Case No. R2-3351-90-12) ("the 1992 Order"), September 19, 1996 (Case No. R2-3351-90-12) ("the 1996 Order"), January 14, 2005 (Case No. CO2-20000107-8) ("the 2005 Order"), April 14, 2008 ("the 2008 Order"), and September 3, 2009 ("the 2009 Order"). The 2005 Order was issued to address numerous violations of the 1992 and 1996 Orders, and to require the implementation of projects and facility plans culminating in CSO Long-Term Control Plans. The 2005 Order superseded the 1992 and 1996 Orders and was twice modified by the 2008 and 2009 Orders.

7. Pursuant to these Orders, Respondents have completed construction of a number of CSO storage facilities, sewer, pumping station, regulator, and interceptor improvements, and other engineered projects (approaches that are referred to in this order as "gray infrastructure"), resulting in significantly reduced CSO discharges at a cost of approximately $1.7 billion. The Department has agreed to defer the construction of $2 billion worth of gray infrastructure projects, based in part on Respondents' agreement to construct other gray and green infrastructure projects. In addition, the Department has agreed to allow the substitution of certain gray infrastructure projects in place of certain additional projects required by the 2005 Order, which will save Respondents $1.4 billion. These substitution projects will be equally effective in reducing the water quality impacts of CSOs.

8. Respondents timely submitted numerous modification requests and force majeure declarations pursuant to the 2005 Order, Article XIII for construction milestones, WWFPs project milestones, and LTCP milestones. The Department responded to each separate modification request and indicated that staff would exercise enforcement discretion. Appendix B of this Order identifies all requests for modification and force majeure declarations covered by this Order.

9. Respondents have violated the terms of Appendix A of the 2005 Order as set forth below:

Appendix A

-Due Date 12/31/2009- I.D.4. Alley Creek CSO, CSO Retention Facility, Construction Completion.

-Due Date 6/30/2010- II.D.4. Outer Harbor CSO, Regulator Improvements- Automation, Construction Completion.

-Due Date 6/30/2010- III.D.4 Inner Harbor CSO, Regulator Improvements- Automation, Construction Completion.

-Due Date 6/30/2010- VI.G.4 Jamaica Tributaries CSO, Regulator Automation, Construction Completion.

-Due Date 4/30/2011- VII.C.4. Coney Island CSO, Avenue V Pumping Station Upgrade, Construction Completion.

-Due Date 6/30/2010- XII.F.2. Jamaica Bay CSO, 26th Ward Wet Weather Expansion, Completion of Final Design Including CPM Analysis.

-Due Date 6/30/2010- XII.F.3. Jamaica Bay CSO, 26th Ward Wet Weather Expansion, Submittal of SPDES Form 2A.

10. On May 5, 2010, Respondents submitted a modification request for Completion of Final Design, including CPM Analysis for the 26th Ward Wet Weather Expansion project milestone at Appendix A, XII., F.2. The Department issued a DEC Determination and Notice of Violation ("26th Ward NOV") on October 3, 2010. The 26th Ward NOV was contested by Respondents in accordance with the terms of the 2005 Order.

11. The Department and Respondents have agreed to resolve the 26th Ward NOV, other outstanding 2005, 2008 and 2009 Order violations, the requests for modification and the force majeure declarations as set forth herein. Respondents agreed to undertake a Green Infrastructure[1] Demonstration Project in the 26th Ward drainage basin in partial settlement of the 26th Ward NOV. As part of ongoing water quality planning, the Department and Respondents have agreed to eliminate some WWFP projects, defer some WWFP projects to be evaluated as part of the LTCP process, and modify the scope of some WWFP projects currently contained within the 2005, 2008 and 2009 Orders.

12. Pursuant to ECL §71-1929, a person who violates any of the provisions of, or who fails to perform any duty imposed by ECL Article 17 or the rules and regulations of the Department promulgated pursuant thereto, or the terms of any certificate, order or permit issued thereunder shall *inter alia*, be liable for a penalty not to exceed thirty-seven thousand, five-hundred dollars ($37,500) per day for each violation, and may also be enjoined from conducting such activity.

13. The Department recognizes that Respondents voluntarily spent approximately $1,025,670 on the rehabilitation of the Arlene Street Pump Station, which includes design costs, and mechanical, electrical, and structural work, as well as expending various other ongoing operational and maintenance costs. The Arlene Street Pump Station is privately owned and had fallen into serious disrepair prior to Respondents' rehabilitation efforts.

14. Respondents have continued to seek ways to reduce combined sewer overflows caused by wet weather events. Consistent with EPA guidance, Respondents have been exploring potential cost-effective alternatives to gray infrastructure that would divert stormwater away from the sewer system and direct it to areas where it can be infiltrated, evapotranspirated, reused, or detained. These decentralized approaches are referred to in this order as "green infrastructure." Green infrastructure technologies currently in use include green roofs, trees and tree boxes, blue roofs, permeable pavement, rain barrels and cisterns, rain gardens, vegetated swales, pocket

[1] Green Infrastructure is defined in paragraph 14 below.

wetlands, infiltration planters, and vegetated sidewalk swales and median strips. If wet weather flows such as rainwater and snow melt are effectively reduced or kept out of the sewer system, such flows do not contribute to CSOs.

15. Respondents have designed and built several installation-scale green infrastructure demonstration projects; many of those projects were developed with the Department and were funded through Environmental Benefit Projects pursuant to existing Department consent orders or judgments, and are in the monitoring and data collection phase.

16. In September 2010, Respondents published the NYC Green Infrastructure Plan ("GI Plan"), which relies upon modeling to project CSO reductions based on information available to date, that would result from managing stormwater equivalent to one inch of rainfall on 10% of available impervious surfaces in the City's combined sewer areas by 2030. Potential projects advanced in the GI Plan that Respondents plan to use to attain City-wide CSO volume reductions, include public and private stormwater control projects, the application of stormwater control performance standards to public and private development, and projects funded by grants to individuals, organizations or entities. The Department and Respondents intend to incorporate elements of the Respondents GI Plan into the CSO LTCPs by establishing baseline CSO volume reduction credits associated with the GI Plan's application rates. Respondents may achieve the City-wide CSO application rates using the principles of adaptive management, which refers to the principle that experience from implementation of actual projects and changing conditions will inform future approaches to green infrastructure in an iterative process for continuous improvement.

17. Respondents have allocated the resources necessary to implement and achieve the initial 2015 application of the GI Plan including launching a Green Infrastructure Task Force to advance interagency cooperation in building green infrastructure into capital projects and creating an Office of Green Infrastructure. The GI Plan also indicated that Respondents are prepared to spend approximately one hundred eighty seven million dollars ($187,000,000) through 2015 to begin implementation of the city-wide GI Plan, which was the sum thought necessary to design and build green infrastructure from public funds, exclusive of any stormwater performance standards for new construction or redevelopment. Those funds have been included in DEP's capital budget through Fiscal Year 2015. Respondents intend to spend those capital funds or, where necessary and appropriate, the equivalent in expense funds, for building green infrastructure.

18. Based on information obtained from the initial green infrastructure Projects, Respondents will refine their modeling to further develop the relationship between green infrastructure implementation and CSO reduction. The modeled CSO volume reduction associated with the 10% GI application rate will be defined as the "City-wide baseline CSO reduction credit." Individual LTCPs will develop drainage specific green infrastructure CSO reduction credits that will cumulatively achieve the CSO reduction associated with the City-wide 10% application rate.

19. The Department and Respondents anticipate that the drainage basin-specific LTCPs will propose sufficient green infrastructure projects to achieve the City-wide baseline CSO reduction credit. The application rate for certain categories of green infrastructure projects, such as the

application of stormwater control performance standards, depends on factors that may be beyond Respondents' control, including the pace of development and redevelopment. Other factors, such as the efficacy of green infrastructure installations, will be better understood with experience and monitoring of different designs and installation projects. With this enhanced understanding, Respondents may adjust drainage specific LTCPs and the green infrastructure projects it implements to achieve the City-wide application rates set forth herein.

20. Respondents have agreed to undertake two Green Infrastructure Demonstration Projects ("GI Demo Projects"), one each within the Newtown Creek and Bronx River watersheds to field verify the concepts proposed in the GI Plan on a multi-block scale and to complement existing pilots that have been undertaken on an installation scale. The estimated cost of these two GI Demo Projects is approximately four million dollars ($4,000,000) and a portion of these projects shall be credited towards completion of the Environmental Benefit Projects, as referenced in Article III of this Order. The schedule for completion of these two GI Demo Projects is set forth in Appendix A of this Order.

21. The Department and Respondents have agreed to a LTCP Goal Statement and Outline that will allow the City to invest in cost-effective green infrastructure based upon drainage basin-specific implementation goals and target CSO reduction credit for green infrastructure implementation that will be built into the baseline conditions of the LTCPs. See Article VI and Appendices C and D of this Order.

22. The Department and Respondents have agreed that the City-wide LTCP baseline conditions will be the 2010 conditions, with the inclusion of all CSO reductions attributable to the implementation of the WWFPs and the cumulative sum of the drainage basin-specific baseline CSO reduction credits.

23. Respondents will make best efforts, as defined herein, to ensure that the cumulative CSO volume reductions from the application of green infrastructure identified in the drainage basin-specific LTCPs shall attain the City-wide green infrastructure CSO volume reductions beyond 2015, as per Article IV.B. of this Order.

24. Respondents will develop LTCPs that contain green infrastructure performance metrics and implementation schedules to attain the CSO baseline reduction credit identified for each individual LTCP. The LTCPs will assess combinations of additional gray and green infrastructure in order to inform the water quality-based decisions, as required in approvable LTCPs, per Appendix D of this Order.

25. In order to ensure that the site-specific LTCPs for all city-wide drainage basins are supported by approvable WWFPs, the Department has accepted the following proposed projects. As part of the execution of this Order, the Department and Respondents have agreed to provide public notice and receive public comments, through the notice and comment of this Consent Order Modification, on the following projects and milestone dates as set forth in Appendix A:

-Flushing Bay CSO- add Divert Low Lying Sewers/Raise Weirs, add Regulator Modifications, add Dredging.

-Jamaica Tributaries CSO- eliminate the Expansion of Wet Weather Capacity of Jamaica WPCP, add 48 Inch Parallel Interceptor, add Bending Weirs.

-Newtown Creek CSO- modify Zone II Aeration to Enhanced Aeration for the Lower English Kills, East Branch, Dutch Kills, and Lower Newtown Creek, eliminate St. Nicholas Relief Sewer/ Regulator Modifications, eliminate CSO Storage Facility, add Bending Weirs/ Floatable Controls.

-Westchester Creek CSO- eliminate CSO Storage Facility, eliminate Phase I Influent Sewers, add CSO Relief Structure Modifications, add Parallel Interceptor.

-Hutchinson Creek CSO- eliminate Phase I Storage Facility, eliminate Future Phases.

-Jamaica Bay CSO- eliminate 26th Ward Wet Weather Expansion, add High Level Sewer Separation, add 26th Ward WPCP Wet Weather Stabilization, add Green Infrastructure Pilot Project in 26th Ward Drainage Basin.

26. In order to allow time to compile sufficient post construction monitoring data to inform the LTCPs and/or incorporate the results from the GI Demo Projects, the Department and Respondents have agreed to modify the following LTCP submittal milestone dates as set forth in Appendix A:

-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.

27. Although Respondents' jurisdiction and authority over CSO discharges lies within the boundaries of the City of New York (with the exception of designated lands within the New York City watershed), and Respondents' combined sewer outfalls are located solely within that area and Westchester County has the obligation to control and monitor discharges within its borders, Respondents agree to sample and monitor portions of the Hutchinson River located within Westchester County borders as penalty mitigation. The resulting data and analysis will be used to set waste load allocations to inform the Hutchinson River LTCP, as further described in Article III.D. of this Order.

28. The Department and Respondents have each consented to the making of this Order, which modifies the 2005, 2008 and 2009 Orders, without further action, litigation, hearing or

adjudication of any issues of law or fact, being duly advised, and it being in the public interest and advantageous to the State.

IT IS HEREBY ORDERED:

I. EFFECT ON PREVIOUS ORDERS

Respondents are bound by, and agree to follow and comply with the terms, provisions and requirements set forth in this Order, including the modified milestone dates in Appendix A, which are incorporated herein. This Order modifies and replaces only those portions of the 2005 and 2008 Orders as set forth in Article VII below and Appendix A. All other provisions of the 2005, 2008, and 2009 Orders shall remain in full force and effect. The requirements set forth in this Order are additional to, and do not affect any requirements set forth in any other Orders on Consent between the Department and Respondents.

II. CIVIL PENALTY

In settlement of all violations, force majeure declarations and modification requests described above in paragraphs 9-11, 25-26, and in Appendix B, Respondents shall pay a civil penalty in the sum of two hundred thousand dollars ($200,000). The civil penalty shall be paid within 45 days of the Department's execution of this Order, by check made payable to the order of the "New York State Department of Environmental Conservation," which shall be forwarded to the Department of Environmental Conservation, 625 Broadway, 14th Floor, Office of General Counsel, Albany, NY 12233-1500, attention: Elissa Armater, with a copy to Robyn Adair, Esq. at the same address. Respondents shall also pay one million dollars ($1,000,000) into an escrow account as further described below in Article V.

III. ENVIRONMENTAL BENEFIT PROJECTS

A. In addition to the civil penalty cited in Article II above, Respondents agree to expend five million dollars ($5,000,000) as set forth in Paragraphs B and C below, plus up to an additional one hundred fifty thousand dollars ($150,000) for sampling as set forth in Paragraph D below, to perform Environmental Benefit Projects ("the EBPs"). The Parties agree that the EBPs are intended to secure significant environmental improvements, in accordance with the Department's EBP Policy. The purpose of the EBPs shall be to abate or reduce CSOs or to address the wet weather water quality impacts of CSOs in and around New York City. The EBP funds shall be directly disbursed by Respondents for the purpose of implementing the GI Demo Projects, Green Infrastructure Grants for private and not-for-profit entities, and water quality sampling and monitoring in the Hutchinson River outside the New York City municipal boundaries as described further herein. These EBPs shall be in addition to the one hundred eighty seven million dollars ($187,000,000) through 2015 allocated for implementation of the GI Plan. The one hundred eighty seven million ($187,000,000) dollars set forth in the GI Plan is not an EBP and is therefore not subject to the requirements of Article III of this Order.

B. No less than two million dollars ($2,000,000) of the EBP funds shall be expended toward implementation of two GI Demo Projects on public property within the Newtown Creek and Bronx River CSO drainage basins in accordance with the milestones set forth in Appendix A, VIII. L and X.D. The GI Demo Projects shall be designed to maximize capture of stormwater and reduction of CSOs or related wet weather water quality impacts originating from the drainage sub-basins selected for the GI Demo Projects. The Engineering Report and Design milestones required in Appendix A, VIII. L.1 and X.D.1 shall identify specific GI Demo Projects that incorporate Best Management Practices for stormwater reduction and source controls, as well as describe the proposed schedule for implementation and methodology for monitoring the GI Demo Projects. The Department will credit Respondents for the stormwater reduction achieved through implementation of the these GI Demo Projects towards the initial city-wide 1.5 % green infrastructure application rate required by December 31, 2015, as further described in Article IV.A. of this Order.

C. No less than three million dollars ($3,000,000) of the EBP funds shall be used to extend and expand the City's existing green infrastructure grant program for an additional three (3) years and with additional funds over the 2011 grant program to private property owners, businesses, and not-for-profit organizations under the City's existing Green Infrastructure Grant program to reduce or manage stormwater on private property and adjoining public sidewalks within CSO drainage basins throughout New York City. Preference for grants may be given to projects that will generate sustainable holistic benefits and community involvement/stewardship in addition to stormwater management, if supported by sufficient technical analysis or evidence. Respondents shall submit to the Department by December 31, 2011, an approvable EBP Grant Plan that describes the existing private grant program, provides guidelines and criteria to be used for awarding the EBP grants, outlines strategies for ensuring timely implementation of selected projects, and lists a schedule for outlining how the grant funding will be committed or expended.[2] Respondents will detail how the first one million dollars ($1,000,000) will be committed by December 31, 2012, the second one million dollars ($1,000,000) will be committed by December 31, 2013, and the final one million dollars ($1,000,000) will be committed by December 31, 2014. Respondents shall not claim any credit for a CSO volume reduction or associated green infrastructure application rate from this EBP, as per Article IV of this Order.

D. Respondents shall spend up to one hundred fifty thousand dollars ($150,000), as required, to conduct water quality sampling, flow monitoring, and analysis, in the Hutchinson River within Westchester County to support development of the Hutchinson River LTCP, required in Appendix A, XI.G. The s cope and schedule for the water quality sampling and flow monitoring shall be defined in the Hutchinson River Water Quality Sampling and Monitoring Plan, to be approved by the Department and used to develop the waste load allocation required in Appendix A, XI.F.

E. The CSO Order Quarterly Reports required by Article IV of the 2005 CSO Order shall include a detailed EBP status report and cost accounting of all funds allocated, disbursed, or

[2] In order to commit the EBP funds, Respondents shall encumber such funds through the issuance of a Notice, or Notices, to Proceed to Construction for a contract(s) or another type of binding agreement(s).

expended during the prior quarter and general estimates of the costs expected to be incurred during the following quarter.

F. Any written or formal public oral statement, made by Respondents making reference to any EBP undertaken pursuant hereto shall include language stating that the project was undertaken as part of the resolution of an enforcement matter brought by the State for the applicable violation(s).

G. With respect to the above-described EBPs in this Order, Respondents hereby certify that:

1. Respondents are not required to perform or develop the listed EBPs by any law, regulation or other legally binding obligation;
2. Respondents are not required to perform or develop the listed EBPs as injunctive relief in this or any other case;
3. Respondents have not received, are not presently negotiating to receive, and will not seek in the future to receive, credit in any other enforcement action or legal proceeding based upon undertaking the listed EBPs;
4. Respondents have not obtained and will not obtain any grant funds to offset performance of the EBPs;
5. Respondents have not planned to perform the listed EBPs, or any element thereof, at the time the violations were detected; and
6. Respondents will not allocate or disburse any grant funds to itself in order to fulfill the EBP requirements.

IV. CITY-WIDE GREEN INFRASTRUCTURE IMPLEMENTATION

A. Initial City-wide Green Infrastructure CSO Volume Reduction

1. Respondents shall implement sufficient green infrastructure projects up to one hundred, eighty seven million ($187,000,000) dollars to control the equivalent of stormwater generated by one inch of precipitation on 1.5% of impervious surfaces city-wide in combined areas by December 31, 2015, as measured against baseline conditions on January 1, 2010. These green infrastructure application rates may be met through public green infrastructure projects, as well as green infrastructure control measures required for private projects, including but not limited to, application of stormwater control performance standards on public or private development, grants to individuals, organizations or entities, public roadway projects, or any other appropriate measures. However, these applications cannot be met by any reductions achieved by the EBPs set forth in Article III.C above.

2. By June 30, 2016, Respondents shall develop and submit to the Department CSO performance metrics, including the cumulative City-wide CSO volume reduction associated with implementing the 1.5% green infrastructure application.

Respondents shall establish an equivalency rate for the 1.5% green infrastructure application to City-wide CSO volume reductions. The submission will also include the modeled CSO volume reduction associated with the 10% GI application rate, which will be the "City-wide baseline CSO reduction credit."

3. Should Respondents fail to attain the initial city-wide green infrastructure application rate of 1.5% and associated CSO volume reduction by December 31, 2015, Respondents may avoid the assessment of stipulated penalties in IV.A.5 by certifying that the one hundred eighty seven million ($187,000,000) dollars is encumbered and by submitting an approvable contingency plan to the Department by June 30, 2016.

4. The contingency plan shall be incorporated by reference into the Order and shall contain specific gray and/or green infrastructure projects sufficient to make up any shortfall from the 1.5% green infrastructure application rate from the previous 5-year implementation period. The contingency plan must also include an implementation schedule for additional gray and/or green infrastructure projects to address the shortfall from the 1.5% green infrastructure application rate by the end of the next 5-year period. The contingency plan may propose groupings of similar projects within the same drainage basin and assign a single set of milestones for each grouping of projects. Nothing in this paragraph limits Respondents' ability to seek the modification of a contingency plan or any other provision of this order pursuant to Article XIII of the 2005 Order.

5. If Respondents fail to achieve the 1.5% application rate and fail to encumber the one hundred eighty seven million dollars ($187,000,000) by December 31, 2015, they shall pay the Department a stipulated penalty in the amount of two hundred, fifty thousand ($250,000) dollars. The Department will provide notice to Respondents that such penalty is due and owing. Payment of any stipulated penalties shall be made in accordance with Article V of the 2005 Order.

6. If Respondents fail to adhere to an approvable contingency plan, Respondents shall be subject to stipulated penalties, as per Article V of the 2005 Order, accruing as of the date of any missed milestone set forth in such contingency plan.

B. Additional City-wide Green Infrastructure CSO Volume Reduction

1. Respondents shall develop LTCPs in accordance with Appendices C and D of this Order and submit approvable LTCPs pursuant to the milestone dates in Appendix A of this Order. The drainage basin-specific LTCPs shall include the necessary green infrastructure performance metrics, CSO volume equivalency as established by sub-paragraph A.2. above, and implementation schedules to attain the green infrastructure CSO volume reduction credit provided for in the LTCP(s) baseline conditions, as defined in paragraphs 18 and IV.A.2 above.

2. Respondents shall make "best efforts"[3] to insure the following future City-wide green infrastructure application rates are attained through development and implementation of the drainage basin-specific LTCPs. By June 30, 2016, Respondents shall develop and submit to the Department CSO performance metrics and equivalency rates for the green infrastructure applications listed below converting these rates to equivalent City-wide CSO volume reductions. Upon approval by the Department, these CSO volume reductions will be added as performance metrics pursuant to this Order. At each 5-year reporting period, Respondents shall report on the cumulative City-wide CSO volume reduction. The cumulative CSO volume reduction shall be no less than the individual drainage basin-specific LTCP green infrastructure baseline CSO volume credits.

a. City-wide target of green infrastructure application to manage the equivalent of stormwater generated by one inch of precipitation on 4% of impervious surfaces in combined sewer areas, and a calculation of the equivalent CSO volume reduction associated with that green infrastructure application by December 31, 2020, as measured against baseline conditions on January 1, 2010.

b. City-wide target of green infrastructure application to manage the equivalent of stormwater generated by one inch of precipitation on 7% of impervious surfaces in combined sewer areas, and a calculation of the equivalent CSO volume reduction associated with that green infrastructure application by December 31, 2025, as measured against baseline conditions on January 1, 2010.

c. City-wide target of green infrastructure application to manage the equivalent of stormwater generated by one inch of precipitation on 10% of impervious surfaces in combined sewer areas, and a calculation of the equivalent CSO volume reduction associated with that green infrastructure application by December 31, 2030, as measured against baseline conditions on January 1, 2010.

3. Should Respondents' best efforts not attain the future city-wide green infrastructure application rates and associated CSO volume reductions by the dates in sub-paragraphs IV. B.2a, 2b, and 2c above, and Respondents made all best efforts to meet those milestone dates, as required, Respondents may avoid the assessment of stipulated penalties by submitting an approvable contingency plan(s) to the Department by June 30,

[3] For purposes of this Order, "best efforts" is defined as exercising due diligence to carry out the legal and technical obligations of this Order. Failure to achieve "best efforts" may be excusable by force majeure as per Article VI of the 2005 CSO Order or upon a demonstration by Respondents that the failure occurred despite diligent and sustained efforts. A finding of best efforts will be supported where the failure to meet an application rate or associated CSO volume reduction results from, among other things: an insufficient rate of development or redevelopment to allow for the accrual of the benefits associated with application of the stormwater control performance standard to new development that was proposed in the GI Plan; insufficient available land to construct the required application rate of green infrastructure projects; or significant unexpected costs of building and maintaining green infrastructure.

2021 for the 2a. milestone, by June 30, 2026 for the 2b. milestone, or by June 30, 2031 for the 2c. milestone as set forth in the consecutive sub-paragraphs IV.B.2 above. As above-referenced in sub-paragraphs IV. A.4-5, the contingency plan(s) shall be incorporated by reference into this Order and shall contain specific gray and/or green infrastructure projects sufficient to make up the shortfall in CSO volume reduction from the previous 5-year implementation period. The contingency plan(s) must also include an implementation schedule for additional gray and/or green infrastructure projects to address the shortfall in CSO volume reduction by the end of the next 5-year period. The contingency plan(s) may propose groupings of similar projects within the same drainage basin and assign a single set of milestones for each grouping of projects. Nothing in this paragraph limits Respondents' ability to seek the modification of a contingency plan or any other provision of this order pursuant to Article XIII of the 2005 Order.

4. Upon approval by the Department, the contingency plan(s) and its implementation schedule(s) shall be incorporated into the LTCPs, where applicable. The Department will provide notice to Respondents of any such action.

5. In the event the Respondents fail to attain the required green infrastructure application rate and the associated CSO volume reduction by the date set forth in any approved contingency plan(s) described in sub-paragraphs IV.B.2a-2c above, the Respondents shall be subject to stipulated penalties, as per Article V. of the 2005 Order, accruing as of the date of any missed milestone set forth in such contingency plan.

C. Green Infrastructure Reporting Requirements

1. Respondents will report on the progress of the green infrastructure program in the CSO Quarterly reports and at the regularly scheduled CSO Quarterly meetings.

2. Respondents will submit an Annual Report on measures taken to implement the GI Plan, including: institutional steps taken; results from monitoring demonstration projects; material design changes and plans; planned and built green infrastructure installations; the acreage managed and percent of impervious surfaces in combined sewer areas, and an action plan for the following year. This report shall be submitted by April 30 of each year, and may be integrated into the CSO BMP report.

3. The Department and Respondents will meet annually to review the Annual Report and progress made in the preceding year and discuss the action plan for the upcoming year.

4. By June 30, 2016, Respondents shall submit to the Department a certification that it has achieved the initial City-wide green infrastructure rates, as referenced in Article IV.A.3, and that the initial five year City-wide green infrastructure modeled CSO volume reduction has been attained as per Article IV.A.2

associated with that application rate, the reasons for exceeding or falling short of that application rate if applicable, any contingency plan it intends to implement to make up any shortfall, and a description of adjustments to be taken during development of drainage basin- specific LTCPs and/or the City-wide LTCP.

5. By June 30, 2021, June 30, 2026, and June 30, 2031, respectively, Respondents shall submit to the Department certifications that it has achieved the City-wide green infrastructure CSO volume reduction as referenced in Article IV.B.2a-c, the reasons for exceeding or falling short of that application target if applicable, and any contingency plan(s) that it intends to implement to make up any shortfall.

V. ESCROW

Respondents shall pay the total sum of one million dollars ($1,000,000) into the interest-bearing escrow account previously established by Respondents with, and administered by, the New York State Environmental Facility Corporation ("EFC") under the CSO Order, within 60 days of the effective date of this CSO Order. Respondents shall be entitled to recover the money held in the escrow accounts in the following amount if it timely complies with the corresponding milestone ("Release Trigger Milestone") in the table below, which milestone is set forth in Appendix A to this CSO Order:

Recoverable Escrow Amount	Release Trigger Milestone
$1,000,000 plus interest	Funds released if Respondents meet all requirements to comply with July 19, 2019 milestone (Appendix A, XII.K.9)

Upon Respondents' timely compliance with the Trigger Milestone, the Department shall notify EFC in writing of this fact and direct EFC to release the applicable Recoverable Escrow Amount to the Respondents, including any accrued interest, less administrative fees. If Respondents fail to comply with the Trigger Milestone, then the corresponding Recoverable Escrow Amount shall become payable by EFC to the Department as an ordinary civil penalty, upon EFC receiving written direction from the Department to make payment, with EFC entitled to keep an amount of the accrued interest equal to its administrative expenses for administering the escrow account.

VI. LTCP SUBMISSIONS

The Department and Respondents have engaged in further discussions regarding the parties' obligations under the 2005 Order, which generally describes work efforts for coordinating CSO Long-Term Planning and Water Quality Standards Reviews. These work efforts have resulted in the development of a LTCP Goal Statement and LTCP Outline, which will be appended to this existing Order (Appendices C and D), in order to further guide the

development of future LTCPs and Use Attainability Analyses. The LTCP Goal Statement will be included in each LTCP submitted by Respondents, as referenced in Appendix A of this Order. The LTCP Outline delineates the necessary elements that Respondents will address in each LTCP submitted. Adherence to these documents will help Respondents to submit approvable LTCPs in accordance with the schedule listed in paragraph 26 above and Appendix A.

VII. COMPLIANCE SCHEDULE

A. Respondents are permanently enjoined and directed to complete and implement the projects set forth in Appendix A of this Order, in accordance with the specified project descriptions and schedules set forth herein.

B. There shall be no changes to the 2005, 2008, and 2009 CSO Orders, except as indicated in paragraphs 9, 25-26 and Appendix A of this Order. Respondents shall strictly comply with all the milestones set forth in Appendix A. The implementation and enforcement of the activities required by these milestones shall be governed by the terms of the 2005 CSO Order.

VIII. EFFECTIVE DATE

The effective date of this Order modification shall be the date it is executed by the Department's Commissioner or his designee.

DATED: March 8th, 2012
Albany, New York

New York State Department of
Environmental Conservation

By: _____
Joseph J. Martens
Commissioner

CONSENT BY RESPONDENTS

The New York City Department of Environmental Protection hereby consents to the issuance and entry of the foregoing Order, waives its right to a hearing herein as provided by law, and agrees to be bound by the provisions, terms and conditions contained herein.

Carter H. Strickland, Jr., Commissioner
New York City Department of
Environmental Protection

10/11/11
Date

ACKNOWLEDGMENT

State of New York)
County of Queens) ss.:

On the 11th day of October, 2011 before me personally came Carter H. Strickland Jr. to me known, who being by me duly sworn did depose and say that s/he was duly authorized to execute the foregoing instrument and did so on behalf of the Respondents of New York.

Notary Public

ROBERT E. CRAIG
Notary Public, State of New York
No. 02CR6197511
Qualified in Queens County
Commission Expires Dec. 1, 2012

CONSENT BY RESPONDENTS

The New York City Corporation Counsel hereby consents to the issuance and entry of the foregoing Order without further notice, waives its right to a hearing herein, and agrees to be bound by the terms, conditions and provisions hereof.

Michael A. Cardozo,
Corporation Counsel of the
City of New York

BY: _____
Title: ASSISTANT CORPORATION COUNSEL

Oct 7, 2011
Date

ACKNOWLEDGMENT

State of New York)
County of) s.:

On this 7th day of October, 2011, before me personally came William Plache, to me known, who being duly sworn, deposed and stated that s/he maintains an office at 100 Church Street, New York, New York, that s/he is an Assistant Corporation Counsel, Environmental Law Section of the New York City Corporation Counsel, and that s/he was authorized by said Department to execute the foregoing instrument.

_____
Notary Public

HILARY MELTZER
Notary Public, State of New York
No. 02ME5010465
Qualified in New York County
Commission Expires ~~June 6~~, 20 15
March 29

APPENDIX A

DEC Case No. CO2-20110512-25

I. Alley Creek CSO	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	Completed	
2. Submit Approvable Additional Modified Facility Plan Report	February 2004	
3. Submit Form 2A SPDES Application	June 2003	
B. Comprehensive Watershed Planning		
1. Submit Approvable Alley Creek Waterbody / Watershed Facility Plan Report	June 2007	
2. Submit Approvable East River Waterbody / Watershed Facility Plan Report	June 2007	
C. Outfall and Sewer System Improvements		
1. Initiate Final Design	May 1996	
2. Final Design Completion Including CPM Analysis	March 2002	
3. Notice to Proceed to Construction	December 2002	
4. Construction Completion	December 2006	
D. CSO Retention Facility		
1. Initiate Final Design	May 1996	
2. Final Design Completion Including CPM Analysis	December 2005	
3. Notice to Proceed to Construction	December 2006	
4. Construction Completion	December 2009	March 11, 2011
E. Drainage Basin Specific LTCPs		
1. Submit Approvable Drainage Basin Specific LTCP for Alley Creek	6 months after approval of I.B.1	June 2013
2. Submit Approvable Drainage Basin Specific LTCP for East River	6 months after approval of I.B.2	Combined with XIV.A

II. Outer Harbor CSO	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	Completed	
2. Submit Additional Modified Facility Plan Report	February 2004	
B. Comprehensive Watershed Planning		
1. Submit Approvable Open Waters Waterbody/Watershed Facility Plan Report	June 2007	
C. Regulator Improvements - Fixed Orifices		
1. Initiate Final Design	January 2004	
2. Final Design Completion Including CPM Analysis	April 2005	
3. Notice to Proceed to Construction	February 2006	
4. Construction Completion	July 2008	
D. Regulator Improvements - Automation		
1. Initiate Final Design	February 2005	
2. Final Design Completion Including CPM Analysis	November 2006	
3. Notice to Proceed to Construction	November 2007	
4. Construction Completion	June 2010	December 2010
E. Port Richmond Throttling Facility		
1. Initiate Final Design	June 2004	
2. Final Design Completion Including CPM Analysis	August 2005	
3. Notice to Proceed to Construction	June 2006	
4. Construction Completion	December 2008	November 2009
F. In-Line Storage[2]		
1. Initiate Final Design	DELETED	
2. Final Design Completion Including CPM Analysis	DELETED	
3. Notice to Proceed to Construction	DELETED	
4. Construction Completion	DELETED	
G. Submit Approvable Drainage Basin Specific LTCP for Open Waters	6 months after approval II.B.1	Combined with XIV.A

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III. Inner Harbor CSO	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	Completed	
2. Submit Additional Modified Facility Plan Report	February 2004	
B. Comprehensive Watershed Planning		
1. Submit Approvable Gowanus Canal Waterbody/Watershed Facility Plan Report	June 2007	
C. Regulator Improvements - Fixed Orifices		
1. Initiate Final Design	March 2000	
2. Final Design Completion Including CPM Analysis	September 2002	
3. Notice to Proceed to Construction	February 2003	
4. Construction Completion	April 2006	
D. Regulator Improvements - Automation		
1. Initiate Final Design	February 2005	
2. Final Design Completion Including CPM Analysis	November 2006	
3. Notice to Proceed to Construction	November 2007	
4. Construction Completion	June 2010	December 2010
E. In-Line Storage[3]		
1. Initiate Final Design	July 2005	
2. Final Design Completion Including CPM Analysis	November 2006	
3. Notice to Proceed to Construction	August 2007	
4. Construction Completion	August 2010	
F. Flushing Tunnel Modernization		
1. Notice to Proceed to Construction	February 2010	
2. Construction Completion	September 2014	
G. Gowanus Pump Station Reconstruction		
1. Notice to Proceed to Construction	February 2010	
2. Construction Completion	September 2014	

H. Dredging of Gowanus Canal		
1. Submittal of All Dredging Permit Applications	December 2010	February 2012
2. Notice to Proceed with Dredging	Within 3 years of final permit issuance	3 yrs + effective date of DEC and ACOE permits
3. Complete Dredging	Within 5 years of final permit issuance	5 yrs + effective date of DEC and ACOE permits
I. Submit Approvable Drainage Basin Specific LTCP for Gowanus Canal	6 months after approval of III.B.1	June 2015

IV. Paerdegat Basin CSO	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	Completed	
2. Submit Additional Modified Facility Plan Report	February 2004	
3. Submit Form 2A SPDES Application	July 2002	
B. Comprehensive Watershed Planning		
1. Submit Approvable Paerdegat Basin Waterbody/Watershed Facility Plan Report	March 2003	
C. Influent Channel		
1. Initiate Final Design	October 1994	
2. Final Design Completion Including CPM Analysis	March 1997	
3. Notice to Proceed to Construction	February 1999	
4. Construction Completion	February 2002	
D. Foundations and Substructures		
1. Initiate Final Design	October 1994	
2. Final Design Completion Including CPM Analysis	August 2001	
3. Notice to Proceed to Construction	June 2002	
4. Construction Completion*	February 2009*	
E. Structures and Equipment		
1. Initiate Final Design	October 1994	
2. Final Design Completion Including CPM Analysis	November 2004	
3. Notice to Proceed to Construction	September 2005	
4. Construction Completion	May 2011	
F. Submit Approvable Drainage Basin Specific LTCP for Paerdegat Basin	November 2005	

* This is a minor milestone per Section V.B. of the 2005 CSO Order. In the event this minor milestone is not met, any money placed into escrow will be recovered if milestone IV.E.4 is achieved.

G. Enviromental Dredging		
1. Submit Dredging Permit Applications	December 2008	

2. Initiate Final Design	September 19, 2010	September 2010
3. Final Design Completion Including CPM Analysis	September 19, 2011	September 2011
4. Notice to Proceed to Construction	March 19, 2013	March 2013
5. Dredging Completion	March 19, 2015	March 2015

V. Flushing Bay CSO	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	Completed	
2. Submit Additional Modified Facility Plan Report	February 2004	
3. Submit Form 2A SPDES Application	June 2003	
B. Comprehensive Watershed Planning		
1. Submit Approvable Flushing Bay Waterbody/Watershed Facility Plan Report	June 2007	
2. Submit Approvable Flushing Creek Waterbody/Watershed Facility Plan Report	June 2007	
C. CS4-1 Reroute and Construct Effluent Channel		
1. Initiate Final Design	October 1992	
2. Final Design Completion Including CPM Analysis	September 1994	
3. Notice to Proceed to Construction	June 1995	
4. Construction Completion	June 1996	
D. CS4-2 Relocate Ballfields		
1. Initiate Final Design	October 1992	
2. Final Design Completion Including CPM Analysis	September 1994	
3. Notice to Proceed to Construction	April 1995	
4. Construction Completion	August 1995	
E. CS4-3 Storage Tank		
1. Initiate Final Design	December 1993	
2. Final Design Completion Including CPM Analysis	September 1996	
3. Notice to Proceed to Construction	July 1997	
4. Construction Completion	August 2001	
F. CS4-4 Mechanical Structures		
1. Initiate Final Design	December 1993	
2. Final Design Completion Including CPM Analysis	February 2000	
3. Notice to Proceed to Construction	March 2002	
4. Construction Completion	September 1, 2009	January 31, 2011

G. CS4-5 Tide Gates		
1. Initiate Final Design	August 1998	
2. Final Design Completion Including CPM Analysis	November 1999	
3. Notice to Proceed to Construction	December 2000	
4. Construction Completion	April 2002	
H. CD-8 Manual Sluice Gates		
1. Final Design Completion Including CPM Analysis	May 2003	
2. Notice to Proceed to Construction	February 2004	
3. Construction Completion	June 2005	
I. Tallman Island WPCP and associated sewer system are capable of delivering, accepting and treating influent at or above twice the plant's design flow during any storm event		
1. Initiate Final Design - Whitestone Interceptor	December 2007	
2. Final Design Completion Including CPM Analysis - Whitestone Interceptor	December 2010	
3. Notice to Proceed to Construction - Whitestone Interceptor	December 2011	
4. Construction Completion - Whitestone Interceptor	July 2015	
5. Engineering Report and Milestones Submittal - Flushing Interceptor		March 2012
6. Initiate Final Design - Flushing Interceptor		TBD
7. Final Design Completion Including CPM Analysis - Flushing Interceptor		TBD
8. Notice to Proceed to Construction - Flushing Interceptor		TBD
9. Construction Completion - Flushing Interceptor		TBD
J. Divert Low Lying Sewers/Raise Weir BB-R02		
1. Initiate Final Design		June 2011
2. Final Design Completion Including CPM Analysis		June 2013
3. Notice to Proceed to Construction		June 2014
4. Construction Completion		December 2016
K. Regulator Modifications		
1. Initiate Preliminary Design and Field Surveys (Design Phase I)		June 2011
2. Initiate Final Design (Design Phase II)		December 2012
3. Final Design Completion Including CPM Analysis		December 2014
4. Notice to Proceed to Construction		December 2015
5. Construction Completion		June 2018
L. Environmental Dredging of Flushing Bay		

1. Submit Dredging Permit		December 2012
2. Notice to Proceed with Dredging		2 yrs + effective date of DEC and ACOE permits
3. Complete Dredging		Per the DEC/ACOE permit
M. Drainage Basin Specific LTCPs		
1. Submit Approvable Drainage Basin Specific LTCP for Flushing Bay	6 months after approval of V.B.1	June 2017
2. Submit Approvable Drainage Basin Specific LTCP for Flushing Creek	6 months after approval of V.B.2	December 2014

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VI. Jamaica Tributaries CSO	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	April 2003	
2. Submit Additional Modified Facility Plan Report	February 2004	
B. Comprehensive Watershed Planning		
1. Submit Approvable Bergen Basin Waterbody/Watershed Facility Plan Report	June 2007	
2. Submit Approvable Thurston Basin Waterbody/Watershed Facility Plan Report	June 2007	
C. Meadowmere & Warnerville DWO Abatement		
1. Initiate Final Design	January 2004	
2. Final Design Completion Including CPM Analysis	May 2005	
3. Notice to Proceed to Construction	June 2006	
4. Construction Completion	March 2009	July 2009
D. Expansion of Wet Weather Capacity of Jamaica WPCP		
1. Initiate Final Design	June 2009	DELETED
2. Submit Form 2A SPDES Application	June 2010	DELETED
3. Final Design Completion Including CPM Analysis	June 2011	DELETED
4. Notice to Proceed to Construction	June 2012	DELETED
5. Construction Completion	June 2015	DELETED
E. Destratification Facility		
1. Initiate Final Design	January 2006	
2. Final Design Completion Including CPM Analysis	December 2007	
3. Notice to Proceed to Construction	April 2009	September 2010
4. Construction Completion	November 2010	March 2012
F. Laurelton and Springfield Blvd.		
1. Submit Drainage Plan for Storm Sewer Buildout	January 2008	
G. Regulator Automation		
1. Initiate Final Design	February 2005	
2. Final Design Completion Including CPM Analysis	November 2006	

3. Notice to Proceed to Construction	November 2007	
4. Construction Completion	June 2010	December 2010
H. Parallel 48-Inch Siphon / Interceptor		
1. Initiate Final Design		June 2009
2. Final Design Completion Including CPM Analysis		December 2012
3. Notice to Proceed to Construction		December 2013
4. Construction Completion		June 2016
I. Bending Weirs		
1. Initiate Final Design		June 2011
2. Final Design Completion Including CPM Analysis		December 2013
3. Notice to Proceed to Construction		December 2014
4. Construction Completion		June 2016
J. Drainage Basin Specific LTCPs		
1. Submit Approvable Drainage Basin Specific LTCP for Bergen Basin	August 2012	Combined with XII.L.1
2. Submit Approvable Drainage Basin Specific LTCP for Thurston Basin	August 2012	Combined with XII.L.1

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VII. Coney Island Creek CSO	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	April 2003	
B. Comprehensive Watershed Planning		
1. Submit Approvable Coney Island Creek Waterbody/Watershed Facility Plan Rep	June 2007	
C. Avenue V Pumping Station Upgrade		
1. Initiate Final Design	April 1998	
2. Final Design Completion Including CPM Analysis	January 2005	
3. Notice to Proceed to Construction	November 2005	
4. Construction Completion	April 2011	June 2012
D. Avenue V Force Main		
1. Initiate Final Design	April 1998	
2. Final Design Completion Including CPM Analysis	September 2006	
3. Notice to Proceed to Construction	July 2007	
4. Construction Completion	June 2012	
E. Submit Approvable Drainage Basin Specific LTCP for Coney Island Creek	6 months after approval of VII.B.1	June 2014

VIII. Newtown Creek CSO	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	October 2003	
B. Comprehensive Watershed Planning		
1. Submit Approvable Newtown Creek Waterbody/Watershed Facility Plan Report	June 2007	
C. Aeration Zone I		
1. Initiate Final Design	March 2001	
2. Final Design Completion Including CPM Analysis	December 2004	
3. Notice to Proceed to Construction	December 2005	
4. Construction Completion	December 2008	
D. Aeration Zone II		
1. Initiate Final Design	June 2007	Phased under VIII. H, I, J
2. Final Design Completion Including CPM Analysis	June 2010	Phased under VIII. H, I, J
3. Notice to Proceed to Construction	June 2011	Phased under VIII. H, I, J
4. Construction Completion	June 2014	Phased under VIII. H, I, J
E. Relief Sewer / Regulator Modification		
1. Initiate Final Design	June 2007	DELETED
2. Final Design Completion Including CPM Analysis	June 2009	DELETED
3. Notice to Proceed to Construction	June 2010	DELETED
4. Construction Completion	June 2014	DELETED
F. Throttling Facility		
1. Initiate Final Design	December 2005	DELETED
2. Final Design Completion Including CPM Analysis	June 2008	DELETED
3. Notice to Proceed to Construction	June 2009	DELETED
4. Construction Completion	December 2012	DELETED
G. CSO Storage Facility		
1. Initiate Final Design	November 2010	DELETED
2. Submit Form 2A SPDES Application	November 2013	DELETED

3. Final Design Completion Including CPM Analysis	November 2014	DELETED
4. Notice to Proceed to Construction	December 2015	DELETED
5. Construction Completion	December 2022	DELETED
H. Enhanced Aeration in Lower English Kills		
1. Initiate Final Design		June 2007
2. Final Design Completion Including CPM Analysis		June 2011
3. Notice to Proceed to Construction		December 2012
4. Construction Completion		December 2013
I. Enhanced Aeration in East Branch and Upper Newtown Creek		
1. Initiate Final Design		June 2010
2. Final Design Completion Including CPM Analysis		June 2014
3. Notice to Proceed to Construction		June 2015
4. Construction Completion		June 2018
J. Enhanced Aeration in Dutch Kills and Lower Newtown Creek		
1. Initiate Final Design		June 2010
2. Final Design Completion Including CPM Analysis		June 2015
3. Notice to Proceed to Construction		December 2016
4. Construction Completion		December 2019
K. Bending Weirs / Floatables Control		
1. Initiate Final Design		June 2011
2. Final Design Completion Including CPM Analysis		June 2013
3. Notice to Proceed to Construction		December 2014
4. Construction Completion		December 2017
L. Green Infrastructure Demonstration Project in Newtown Creek Watershed		
1. Submit Engineering Report and Design		July 2012
2. Notice to Proceed to Construction		October 2012
3. Complete Construction		May 2013
4. Submit Phasing of PCM Report		December 2013
M. Submit Approvable Drainage Basin Specific LTCP for Newtown Creek	February 2016	June 2017

IX. Westchester Creek	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	April 2003	
2. Submit Form 2A SPDES Application	June 2010	DELETED
B. Comprehensive Watershed Planning		
1. Submit Approvable Westchester Creek Waterbody/Watershed Facility Plan	June 2007	
C. Phase I (Influent Sewers)		
1. Initiate Final Design	January 2004	DELETED
2. Final Design Completion Including CPM Analysis	June 2010	DELETED
3. Notice to Proceed to Construction	June 2011	DELETED
4. Construction Completion	June 2015	DELETED
D. CSO Storage Facility		
1. Notice to Proceed to Construction	December 2015	DELETED
2. Construction Completion	December 2022	DELETED
E. Modifications to CSO-29 and CSO-29A		
1. Initiate Final Design		June 2011
2. Final Design Completion Including CPM Analysis		June 2014
3. Notice to Proceed to Construction		December 2015
4. Construction Completion		December 2019
F. Pugsley Creek Parallel Interceptor start from CSO-24		
1. Initiate Final Design		June 2012
2. Final Design Completion Including CPM Analysis		June 2015
3. Notice to Proceed to Construction		June 2016
4. Construction Completion		December 2019
G. Submit Approvable Drainage Basin Specific LTCP for Westchester Creek	February 2016	June 2016

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X. Bronx River CSO	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	September 2003	
2. Submit Additional Modified Facility Plan Report	March 2004	
3. Submit Form 2A SPDES Application	DELETED	
B. Comprehensive Watershed Planning		
1. Submit Approvable Bronx River Waterbody/Watershed Facility Plan Report	June 2007	
C. Floatables Control		
1. Initiate Final Design	January 2006	
2. Final Design Completion Including CPM Analysis	July 2008	
3. Notice to Proceed to Construction	June 2009	
4. Construction Completion	June 2012	
D. Green Infrastructure Demonstration Project in Bronx River Watershed		
1. Submit Engineering Report and Design		April 2012
2. Notice to Proceed to Construction		August 2012
3. Complete Construction		April 2013
4. Submit Phasing of PCM Report		November 2013
E. Submit Approvable Drainage Basin Specific LTCP for Bronx River	August 2009	June 2015

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XI. Hutchinson River CSO	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	July 2003	
2. Submit Form 2A SPDES Application	June 2010	DELETED
B. Comprehensive Watershed Planning		
1. Submit Approvable Hutchinson River Waterbody/Watershed Facility Plan Repor	June 2007	DELETED
C. Phase I of the Storage Facility		
1. Initiate Final Design	April 2005	DELETED
2. Final Design Completion Including CPM Analysis	June 2010	DELETED
3. Notice to Proceed to Construction	June 2011	DELETED
4. Construction Completion	June 2015	DELETED
D. Future Phases		
1. Notice to Proceed to Construction	December 2016	DELETED
2. Construction Completion	December 2023	DELETED
E. Submit LTCP Scoping Document		September 2010
F. Waste Load Allocation		
1. Initiate Comprehensive Field Sampling		May 2012
2. Submit Report on Completed Field Sampling		Dec 2012
3. Submit Report on Water Quality and Sewer System		June 2013
G. Submit Approvable Drainage Basin Specific LTCP for Hutchinson River	February 2017	September 2014

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XII. Jamaica Bay CSO	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	December 2003	
B. Comprehensive Watershed Planning		
1. Submit Approvable Jamaica Bay Waterbody/Watershed Facility Plan Report	June 2007	
2. Submit Approvable Spring Creek Waterbody/Watershed Facility Plan Report	June 2007	
3. Submit Approvable Fresh Creek Waterbody/Watershed Facility Plan Report	June 2007	
4. Submit Approvable Hendrix Creek Waterbody/Watershed Facility Plan Report	June 2007	
C. Spring Creek AWPCP Upgrade		
1. Initiate Final Design	April 1998	
2. Final Design Completion Including CPM Analysis	February 2002	
3. Submit Form 2A SPDES Application	June 2003	
4. Notice to Proceed to Construction	March 2003	
5. Construction Completion	April 2007	
D. 26th Ward Drainage Area Sewer Cleaning and Evaluation		
1. Initiate Final Design	January 2007	
2. Final Design Completion Including CPM Analysis	June 2007	
3. Notice to Proceed to Construction	June 2008	
4. Construction Completion	June 2010	
E. Hendrix Creek Dredging		
1. Initiate Final Design	January 2007	
2. Final Design Completion Including CPM Analysis	June 2007	
3. Notice to Proceed to Construction	June 2008	February 2010
4. Construction Completion	June 2010	February 2012
F. 26th Ward Wet Weather Expansion		
1. Initiate Final Design	June 2006	
2. Final Design Completion Including CPM Analysis	June 2010	DELETED
3. Submit Form 2A SPDES Application	June 2009	DELETED
4. Notice to Proceed to Construction	June 2011	DELETED

5. Construction Completion	December 2015	DELETED
G. Rockaway WPCP and associated sewer system are capable of delivering, accepting and treating influent at or above twice the plant's design flow during any storm event		
1. Construction Completion	December 2017	
H. Submit 26th Ward Alternative Feasibility Study		December 2010
I. 26th Ward High Level Sewer Separation		
1. Submit Drainage Plan		September 2012
2. Phase 1 - Initiate Design		December 2012
3. Phase 1 - Design Completion		March 2015
4. Phase 1 - Notice to Proceed to Construction		March 2016
5. Phase 1 - Construction Completion		December 2018
6. Phase 2 - Initiate Design		April 1, 2015
7. Phase 2 - Design Completion		March 2017
8. Phase 2 - Notice to Proceed to Construction		March 2018
9. Phase 2 - Construction Completion		December 2020
10. Phase 3 - Initiate Design		April 1, 2017
11. Phase 3 - Design Completion		March 2019
12 Phase 3 - Notice to Proceed to Construction		March 2020
13. Phase 3 - Construction Completion		December 2022
J. Green Infrastructure Demonstration Project in 26th Ward Sewershed		
1. Submit Engineering Report and Design		March 2012
2. Notice to Proceed to Construction		June 2012
3. Complete Construction		December 2012
4. Submit Phasing of PCM Report		October 2013
K. 26th Ward WPCP Wet Weather Stabilization		
1. Design Completion for Low Level Main Sewage Pumps		September 2011
2. Notice to Proceed to Construction for Low Level Main Sewage Pumps		September 2012
3. Construction Completion for Low Level Main Sewage Pumps		April 2015
4. Initiate Design for 26th Ward Wet Weather Stabilization		December 2011
5. Design Completion for 26th Ward Wet Weather Stabilization		April 2013
6. Notice to Proceed to Construction for PST#5 and High Level Main Sewage Pumps		April 2014
7. Construction Completion for PST#5 and High Level Main Sewage Pumps		December 29, 2017

8. Notice to Proceed to Construction for 26th Ward Stabilization of PSTs #1 to 4		December 29, 2017
9. Construction Completion for 26th Ward Stabilization of PSTs #1 to 4		July 19, 2019*/July 19, 2020
10. Update WWOP to Capture Improved Monitoring of 26th Ward WPCP Wet Weather Performance		6 months after construction completion of low level main sewage pumps
L. Drainage Basin Specific Long Term Control Plans		
1. Submit Approvable Drainage Basin Specific LTCP for Jamaica Bay/Tribs	August 2012	June 2016
2. Submit Approvable Drainage Basin Specific LTCP for Spring Creek	August 2012	Combined with XII.L.1
3. Submit Approvable Drainage Basin Specific LTCP for Fresh Creek	August 2012	Combined with XII.L.1
4. Submit Approvable Drainage Basin Specific LTCP for Hendrix Creek	August 2012	Combined with XII.L.1

* Pursuant to Article IV of CSO Order, Respondents shall place $1 million into an escrow account. If milestone XII.K.9 of July 19, 2019 is met, the escrow will be recovered.

XIII. City-Wide Comprehensive Floatables Plan	Milestone Date	Revised/Added Milestone Date
A. Facility Plan Development		
1. Submit Modified Facility Plan Report	December 2004	

XIV. City-Wide LTCP	Milestone Date	Revised/Added Milestone Date
A. Submit Approvable City-Wide LTCP*	December 2017	

* Respondents shall incorporate the Open Waters and East River LTCPs into the City-Wide LTCP.

Appendix B
DEC Case No. CO2-20110512-25
CSO Order Force Majeure and Modification Request Summary

Date	MR	FM	Impacted Project/Order Milestone	Description
11/20/2007	X	X	I. Alley Creek, D. CSO Retention Facility	Deteriorated condition of 36-inch influent sewer
12/21/2007 1/4/2008 8/29/2008		X	III. Inner Harbor, E. In-Line Storage	Unanticipated subsurface conditions; limited vendors for inflatable dam equipment
6/28/2008 11/14/2008 5/5/2010	X		VI. Jamaica Tribs, D. Expansion of Wet Weather Capacity of Jamaica WPCP	Identified more cost-effective alternatives, proposed substitution projects
4/30/2009 2/1/2010 3/31/2010 12/14/2010	X		VIII. Newtown Creek, E. Aeration Zone II, D. Relief Sewer / Regulator Modification, F. Throttling Facility, G. CSO Storage Facility	Identified more cost-effective alternatives, proposed substitution projects
6/24/2009 11/30/2010	X		X. Bronx River, D. LTCP	Milestone extension
10/30/2009 9/30/2010	X		I. Alley Creek, D. CSO Retention Facility	Milestone extention
11/13/2009 12/2/2010	X		III. Inner Harbor, E. Gowanus Canal LTCP	Milestone extension
11/13/2009 12/2/2010	X		VII.Coney Island Creek, E. LTCP	Milestone extension
2/8/2010		X	I. Alley Creek, D. CSO Retention Facility	Union walkoff
12/29/2008 6/10/2009 2/12/2010		X	IV. Paerdegat Basin, D. Foundations and Structures	Default of Surety
2/26/2010		X	III. Inner Harbor, G. Gowanus Flushing Tunnel	Difficulty accessing PANYNJ site

Appendix B
DEC Case No. CO2-20110512-25
CSO Order Force Majeure and Modification Request Summary

Date	MR	FM	Impacted Project/Order Milestone	Description
2/26/2010 2/25/2011	X		I. Alley Creek, B. Alley Creek LTCP	Milestone extension
4/30/2010	X	X	II.D. Outer Harbor, III.D. Inner Harbor, VI.G. Jamaica Tributaries, Regulator Improvements - Automation	Unanticipated site conditions, severe weather, design changes
5/5/2010 6/29/2010 7/30/2010	X		IX. Westchester Creek, C. Phase I Influent Sewers	Identified more cost-effective alternatives, proposed substitution projects
5/5/2010 6/29/2010	X		XI. Hutchinson River WWFP, A through E	Eliminate WWFP and proceed with LTCP
5/5/2010 6/29/2010 7/9/2010 12/30/2010	X		XII. Jamaica Bay, F. 26th Ward WW Expansion	Identified more cost-effective alternatives, proposed substitution projects
11/1/2010 12/1/2010	X		III. Inner Harbor, I. Gowanus Canal Dredging Permit Application	Extension for submittal of dredging permit due to Superfund designation
12/8/2010	X		V. Flushing Bay, J. Tallman Island WWTP and sewer system improvements final design	Identified more cost-effective alternatives, proposed substitution projects
2/28/2011	X		VII. Coney Island Creek, C. Ave V Pumping Station	Milestone extension

LTCP Introductory Goal Statement[1]

The New York City Department of Environmental Protection submits this Long Term Control Plan (LTCP) in furtherance of the water quality goals of the federal Clean Water Act and the state Environmental Conservation Law. We recognize the importance of working with our local, state, and federal partners to improve water quality within all city-wide drainage basins and remain committed to this goal.

After undertaking a robust public process, the enclosed LTCP contains water quality improvement projects, consisting of both grey and green infrastructure, which will build upon the implementation of the U.S. Environmental Protection Agency's (EPA) Nine Minimum Controls and the existing Waterbody/Watershed Facility Plan projects. As per EPA's CSO Control Policy, communities with combined sewer systems are expected to develop and implement LTCPs that provide for attainment of water quality standards and compliance with other Clean Water Act requirements. The goal of this LTCP is to identify appropriate CSO controls necessary to achieve waterbody- specific water quality standards, consistent with EPA's 1994 CSO Policy and subsequent guidance. 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 Section 101(a)(2) goals, the LTCP will include a Use Attainability Analysis examining whether applicable waterbody classifications, criteria, or standards should be adjusted by the State. The Use Attainability Analysis will assess the waterbody's highest attainable use, which the State will consider in

[1] This LTCP introductory goal statement is generic in nature, so waterbody specific LTCPs will take into account, as appropriate, the fact that certain waterbodies or waterbody segments may be affected by the City's concentrated urban environment, human intervention, and current waterbody uses, among other things. DEP will identify appropriate water quality outcomes based on site-specific evaluations in the drainage basin specific LTCP, consistent with the requirements of the CSO Control Policy and the Clean Water Act.

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.

On January 14, 2005, the NYC Department of Environmental Protection and the NYS Department of Environmental Conservation entered into a Memorandum of Understanding (MOU), which is a companion document to the 2005 CSO Order also executed by the parties and the City of New York. The MOU outlines a framework for coordinating CSO long-term planning with water quality standards reviews. We remain committed to this process outlined in the MOU and understand that approval of this LTCP is contingent upon our state and federal partners' satisfaction with the progress made in achieving water quality standards, reducing CSO impacts, and meeting our obligations under the CSO Orders on Consent.

LONG TERM CONTROL PLAN OUTLINE

EXECUTIVE SUMMARY

1. INTRODUCTION

1.1. Goal Statement

1.2. Regulatory Requirements (federal, state, local)

1.3. LTCP Planning approach
- **1.3.a. Integrate Current CSO Controls from Waterbody/Watershed Facility Plans (Facility Plans)**
- **1.3.b. Coordination with DEC**
- **1.3.c. Watershed Planning**
- **1.3.d. Public Participation Efforts**

2. WATERSHED/WATERBODY CHARACTERISTICS

2.1. Watershed Characteristics
- **2.1.a. Description of Watershed**
  - **2.1.a.1. Existing and Future Land Use and Zoning**
  - **2.1.a.2. Permitted Discharges**
  - **2.1.a.3. Impervious Cover Analysis**
  - **2.1.a.4. Population growth and projected flows**
  - **2.1.a.5. Update landside modeling**
- **2.1.b. Review and Confirm Adequacy of Design Rainfall Year**
- **2.1.c. Description of Sewer System**
  - **2.1.c.1..... Overview of Drainage Area and Sewer System**
  - **2.1.c.2..... Storm water and Wastewater Characteristics**
  - **2.1.c.3..... Hydraulic Analysis of Sewer System**
  - **2.1.c.4..... Identification of Sewer System Bottlenecks, Areas Prone to Flooding and History of Sewer Backups**
  - **2.1.c.5..... Findings from Interceptor Inspections**
  - **2.1.c.6..... Status of Receiving Wastewater Treatment Plants (WWTPs)**

2.2. Waterbody Characteristics
- **2.2.a. Description of Waterbody**

2.2.a.1. ..... Current Waterbody Classification(s) and Water Quality Standards
2.2.a.2. ..... Physical Waterbody Characteristics
2.2.a.3. ..... Current Public Access and Uses
2.2.a.4. ..... Identification of Sensitive Areas
2.2.a.5. ..... Tidal Flow and Background Harbor Conditions and Water Quality
2.2.a.6. ..... Compilation and Analysis of Existing Water Quality Data

3. CSO BEST MANAGEMENT PRACTICES

3.1. Collection System Maintenance and Inspection Program
3.2. Maximizing Use of Collection System for Storage
3.3. Maximizing Wet Weather Flow to WWTPs
3.4. Wet Weather Operating Plan
3.5. Prohibition of Dry Weather Overflows
3.6. Industrial Pretreatment Program
3.7. Control of Floatables and Settleable Solids
3.8. Combined Sewer Replacement
3.9. Combined Sewer Extension
3.10. Sewer Connection & Extension Prohibitions
3.11. Septage and Hauled Waste
3.12. Control of Runoff
3.13. Public Notification
3.14. Characterization and Monitoring
3.15. CSO BMP Report Summaries

4. GREY INFRASTRUCTURE

4.1. Status of Grey Infrastructure Projects Recommended in Facility Plans
4.1.a. Completed Projects
4.1.b. Ongoing Projects
4.1.c. Planned Projects

4.2. Other Water Quality Improvement Measures Recommended in Facility Plans (dredging, floatables, aeration)

4.3. Post-Construction Monitoring
4.3.a. Collection and Monitoring of Water Quality in the Receiving Waters
4.3.b. CSO Facilities Operations – Flow Monitoring and Effluent Quality
4.3.c. Assessment of Performance Criteria

5. GREEN INFRASTRUCTURE

5.1. NYC Green Infrastructure Plan (GI Plan)

5.2. City-wide Coordination and Implementation
5.2.a. Community Engagement

5.3. Completed Green Infrastructure to Reduce CSOs (Citywide and Watershed)
5.3.a. Green Infrastructure Demonstration and Pilot Projects
5.3.b. Public Projects
5.3.c. Performance Standard for New Development
5.3.d. Other Private Projects (Grant Program)
5.3.e. Projected vs. Monitoring Results

5.4. Future Green Infrastructure in the Watershed
5.4.a. **Relationship Between Stormwater Capture and CSO Reduction**
5.4.b. Opportunities for Cost-Effective CSO Reduction Analysis
5.4.c. Watershed Planning to Determine 20 year Penetration Rate for inclusion in Baseline performance

6. BASELINE CONDITIONS AND PERFORMANCE GAP

6.1. Define Baseline Conditions
6.1.a. Hydrological Conditions
6.1.b. Flow Conservation
6.1.c. BMP Findings and Optimization
6.1.d. Elements of Facility Plan and GI Plan

6.2. Baseline Conditions -- Projected CSO Volumes and Loadings after the Facility Plan and GI Plan

6.3. Performance Gap
6.3.a. CSO Volumes and Loadings Needed to Attain Current Water Quality Standards
6.3.b. CSO Volumes and Loadings That Would be Needed to Support the Next Highest Use or Swimmable/Fishable Uses

7. PUBLIC PARTICIPATION AND AGENCY COORDINATION

7.1. Local Stakeholder Team

7.2. Summaries of stakeholder meetings

7.3. Coordination with Highest Attainable Use

7.4. Internet Accessible Informative Outreach and Inquiries

8. EVALUATION OF ALTERNATIVES

8.1. Considerations for LTCP Alternatives under the Federal CSO Policy
8.1.a. Performance
8.1.b. Impact on Sensitive Areas
8.1.c. Cost
8.1.d. Technical Feasibility
8.1.e. Cost-effective expansion
8.1.f. Long Term Phased Implementation
8.1.g. Other environmental considerations
8.1.h. Community acceptance
8.1.i. Methodology for Ranking Alternatives

8.2. Matrix of Potential CSO Reduction Alternatives To Close Performance Gap from Baseline
8.2.a. Other future Grey Infrastructure
8.2.a.1. ..... High Level Sewer Separation
8.2.a.2. ..... Sewer Enhancements
8.2.a.3. ..... Retention/Treatment Alternatives
8.2.b. Other future Green Infrastructure (various levels of penetration)
8.2.c. Hybrid Green/Grey Alternatives

8.3. CSO Reductions and Water Quality Impact of Retained Alternatives

8.4. Cost Estimates for Retained Alternatives

8.5. Cost-Attainment Curves for Retained Alternatives

8.6. Use Attainability Analysis
8.6.a. Use Attainability Analysis Elements
8.6.b. Fishable/Swimmable Waters
8.6.c. Assessment of Highest Attainable Use

8.7. Water Quality Goals

8.8. Recommended LTCP Elements to meet Water Quality Goals

9. LONG-TERM CSO CONTROL PLAN IMPLEMENTATION

9.1. Adaptive Management (Phased Implementation)

9.2. Implementation Schedule

9.3. Operational Plan / O&M

9.4. Projected Water Quality Improvements

9.5. Post Construction Monitoring Plan and Program Reassessment

9.6. Consistency with Federal CSO Policy

9.7. Compliance with Water Quality Goals

10. REFERENCES

11. GLOSSARY