



DEC Case# CO2-20110512-25, Modification to CO2-20000107-8

CSO Order on Consent
Quarterly Progress Report
Third Quarter 2016
(July 1st – September 30th)

October 30, 2016

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1. Executive Summary

The City of New York (the “City”), the New York City Department of Environmental Protection (DEP), and the New York State Department of Environmental Conservation (DEC) entered into the Combined Sewer Overflow Order on Consent (DEC Case # CO2-20000107-8) on January 14, 2005, which was modified April 14, 2008, September 3, 2009, March 8, 2012, and March 26, 2015 (collectively, the “CSO Order”). Pursuant to the Order, the City is required to submit quarterly status reports to DEC (“Quarterly Reports”) describing actions taken toward achieving compliance with the Order during the prior three-month period.

This Quarterly Report reports on DEP’s actions and activities between **July 1, 2016** and **September 30, 2016** toward complying with the Order’s milestones. DEP continued to make progress in the planning, design and construction of its CSO facilities during this quarter, as documented in this report. As required by the Order, DEP and DEC held a Quarterly Progress Meeting on **October 05, 2016** at **DEP Kingston Offices in Kingston, NY**, to discuss issues related to the Order and review milestones met during the second quarter of 2016.

Critical Events This Quarter

	Date	Location	Event Description
1	Jul 14, 2016	Westchester Creek	IX.F.2 Pugsley Creek Parallel Interceptor – Final Design Completion; DEP responded to DEC’s comments.
2	Jul 6, 2014	Spring Creek	DEC acknowledges receipt of notification of commencement of Spring Creek Disinfection Pilot Project
3	Jul 28, 2014	Jamaica Tributaries	VI.I.4 DEC accepts DEP’s certification of construction completion.
4	Jul 14, 2016	Flushing Bay	V.D.3 DEP submitted Notice to Proceed for Dredging of Flushing Bay.
5	Aug 17, 2016	Jamaica Bay	XII.K.9 26 th Ward – Construction Completion Preliminary Treatment Reliability Improvements to PSTs #1 to 4 and Construction of PST #5. DEP submitted a Notice of Force Majeure, due to an unexpected sludge line rupture.

	Date	Location	Event Description
6	Aug 29, 2016	Newtown Creek	VIII.J.3 and VIII.J.4 - Enhanced Aeration in Dutch Kills and Lower Newtown Creek 3. NTP to Construction 4. Construction Completion; DEC approves modification request for milestone VIII.J.3 from December 2016 to December 2017 and for VIII.J.4 from December 2019 to December 2020.
7	Aug 29, 2016	Wards Island	XIV.A.2 Wards Island Improvements – Reconstruction of MSP – Construction Completion. DEC acknowledges the vandalism force majeure and requests an estimate of schedule impacts.
8	Sep 7, 2016	Inner Harbor	III.F.2 Flushing Tunnel Modernization Construction Completion & III.G Gowanus Pump Station Reconstruction; DEC requests DEP to confirm the chosen alternative from the Gowanus Flushing Tunnel Froth Mitigation Study.
9	Sep 16, 2016	Coney Island Creek	VII.A Coney Island Creek LTCP – DEP responded to DEC’s comments to the Coney Island Creek sent August 17, 2016.
10	Sep 20, 2016	Jamaica Bay & Tributaries	DEP submitted the Jamaica Bay and Tributaries sampling data for the LTCP
11	Sep 23, 2016	Westchester Creek	IX.F.2 Pugsley Creek Parallel Interceptor – Final Design Completion. DEP submitted final design drawings with revisions for Pugsley Creek Parallel Interceptor.

Major Actions This Quarter

Location	Item Description	Milestone Date	Action Required	Status

Major Actions Next Quarter

Location	Item Description	Milestone Date	Action Required	Status
Flushing Bay	Low Lying Sewers / Raise Weir at BB-R02	Dec 2016	Construction Completion	Modification and force majeure letter(s) to be submitted
Flushing Bay	Submit Approvable LTCP	Dec 2016	Submit Report	On Schedule – DEC approved modification of milestone
Westchester Creek	Pugsley Creek Parallel Interceptor	Dec 2016	Construction NTP	On Schedule

Outstanding Modification Requests and Force Majeure Notices

Location	Item Description	Action(s)	Reason for Action(s)	Milestone Date	Status
Jamaica Tributaries	VI.H Parallel 48" Siphon / Interceptor	Notice of Force Majeure Oct 13, 2015	Work embargo by National Grid during low temperatures <25 degrees F	Feb 2017	Construction ongoing
Newtown Creek	VIII.K.4 Bending Weir / Floatables Control	Notice of Force Majeure Oct 9, 2015	Subsurface obstructions at Q-1 regulator site that were not identified during design phase	Dec 2017	Construction ongoing
Jamaica Bay	XII.K.8 26 th Ward WWTP Preliminary Treatment Reliability Improvements	Notice of Force Majeure on Dec 30, 2015	Discovery of a void in a portion of an abandoned outfall structure	Jul 2018	Construction ongoing
Newtown Creek	VIII.J.3 & VIII.J.4 NC Enhanced Aeration in Dutch Kills and Lower Newtown Creek (3.Notice to Proceed to Construction & 4.Construction Completion)	Modification Request sent on Mar 31, 2016. DEC approved on Apr 1, 2016.	Requested extension so that results from water quality sampling and analysis done for the Newtown Creek LTCP can be used to inform the design of the enhanced aeration system.	VIII.J.3 Dec 2017 & VIII.J.4 Dec 2020	Construction Ongoing

Jamaica Bay	XII.K.9 26 th Ward Preliminary Reliability Improvements, Construction Completion for PSTs #1 to #4 and construction of PST #5	Notice of Force Majeure sent Aug 17, 2016	Unexpected rupture of sludge line during a routine operation	XII.K.9 Jul 2020	Construction Ongoing
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2. Construction Contracts

The CSO Order contains milestones and schedules governing the planning, design and construction of DEP's Citywide CSO Program. Numerous CSO-related facilities will be constructed to reduce combined sewage discharges to the receiving waters surrounding the City. The table below identifies, by percentage, the estimated amount of construction that has been performed on projects that are in progress.

Location	Item Description	Notice to Proceed	Construction Completion	Projected Completion	% of Time Elapsed	% of Construction Completed ⁽¹⁾
Flushing Bay	Flushing Interceptor	TBD	TBD	-	-	-
	Divert Low-Lying Sewers/Raise BB-R02	Dec 2014	Dec 2016	Dec 2016	60%	25%
	Regulator Modifications	Dec 2015	Jun 2018	Jun 2018	33%	28%
	Flushing Bay Dredging	Sep 2016	Mar 2018	Mar 2018	-	-
Jamaica Tributaries	Parallel 48-Inch Interceptor	Aug 2014	Feb 2017	Feb 2017	88%	80%
	Bending Weirs	Dec 2014	Jun 2016	Jun 2016	100%	100%
Newtown Creek	Enhanced Aeration East Branch, Upper	Oct 2015	Jun 2018	Jun 2018	60%	30%
	Enhanced Aeration Dutch Kills, Lower	Dec 2016	Dec 2019	Dec 2019	-	-
	Bending Weirs/Floatables Control	May 2015	Dec 2017	Dec 2017	55%	50%
Westchester Creek	Modifications to CSO-29 & 29A	Dec 2015	Dec 2019	Dec 2019	9%	0%
	Pugsley Creek Parallel Interceptor	Dec 2016	Dec 2019	Dec 2019	-	-
Jamaica	26 th Ward HLSS Phase 1	Mar 2016	Dec 2018	Dec 2018	15%	10%

Location	Item Description	Notice to Proceed	Construction Completion	Projected Completion	% of Time Elapsed	% of Construction Completed ⁽¹⁾
Bay	26 th Ward HLSS Phase 2	Mar 2018	Dec 2020	Dec 2020	-	-
	26 th Ward HLSS Phase 3	Mar 2020	Dec 2022	Dec 2022	-	-
	26 th Ward Low Level MSPs	Aug 2012	Apr 2015 ⁽²⁾	Apr 2015	97%	100%
	26 th Ward High Level MSP	Jun 2015 ⁽²⁾	Jul 2018 ⁽²⁾	Jan 2018	50%	41%
	26 th Ward PSTs 1-5	Jan 2016 ⁽²⁾	Jul 19, 2020⁽²⁾	Aug 2020	16%	14%
	Rockaway WWTP Conveyance		Dec 2017	Dec 2017	-	-
WI WWTP	MSP Replacement	Mar 2015	Dec 2017	Jan 2018	48%	41%
	Bar Screen	Dec 2014	Jun 2018	Jun 2018		

(1) Percentage Construction Completion is tracked based on cost incurred.

(2) Modifications to the CSO Order related to the Wards Island and 26th Ward WWTPs are memorialized in a Consent Order effective March 26, 2015.



3. Flushing Bay CSO

The Flushing Bay CSO Facility Planning area includes the portions of the Tallman Island WWTP and the High Level Interceptor of the Bowery Bay WWTP drainage areas, associated sewers, and pumping stations that discharge to Flushing Bay and Flushing Creek in Queens.

Construction Contracts

	Tallman Island Flushing Interceptor	Divert Low-Lying Sewers / Raise Weir BB-R02	Regulator Modifications	Environmental Dredging
<i>Contract ID</i>	TBD	CS-FB-LLD	CS-FB-BWR	CSO-DRDG DRG-FB
<i>Plan Elements</i>	Address Flushing Interceptor sag in Ulmer Street if periodic monitoring indicates necessity	Divert Low Lying sewers in the vicinity of Bowery Bay WWTP. Raise weir at regulator BB -02	Bowery Bay High Level Interceptor regulator modifications at 10 regulators	Environmental Dredging of Flushing Bay
<i>Location</i>	From MH 45 at Whitestone Expressway to MH 29 at Ulmer Street and 25 th Avenue	Regulator BB-02. Berrian Blvd and 19 th Ave between 43 rd St. and 45 th St.	Five of ten regulators along 108 th street, Ditmars Blvd and the LaGuardia Airport site	Proximate to CSO Outfalls BB006 and BB008
<i>Actions</i>	TOC (PW-088-03) issued for potential design activities	DDC contract registered Jan 2015	Contractor mobilized at four of the five sites	Dredge bottom sediments to final depth of 4 ft. below MLLW
<i>Cost</i>	TBD	\$5,610,000	\$28,820,000	\$34,720,000
<i>Status</i>	No activity	Modification to be requested because of force majeure event related to unanticipated	In Construction	NTP issued

additional dewatering.

Design Activity Summary

	This Quarter	Next Quarter
Tallman Island Flushing Interceptor	<ul style="list-style-type: none"> No activity 	<ul style="list-style-type: none"> A CCTV/Sonar inspection to be performed in late 2017 to monitor structural integrity of pipe.
Divert Low-Lying Sewers / Raise Weir BB-R02	<ul style="list-style-type: none"> DEC comments on design received via July 19, 2016 email 	<ul style="list-style-type: none"> Respond to DEC design comments Design services during construction (DSDC) to continue at DDC.
Regulator Modifications	<ul style="list-style-type: none"> Design services during construction (DSDC). 	<ul style="list-style-type: none"> Continue with design services during construction (DSDC).
Environmental Dredging	<ul style="list-style-type: none"> NTP Issued Pre-construction activities initiated 	<ul style="list-style-type: none"> Dredging initiation

Construction Activity Summary

	This Quarter	Next Quarter
Tallman Island Flushing Interceptor	<ul style="list-style-type: none"> No activity 	<ul style="list-style-type: none"> No activity
Divert Low-Lying Sewers / Raise Weir BB-R02	<ul style="list-style-type: none"> Despite pre-construction investigation, the contractor encountered an unexpected amount of groundwater. Because of unexpected amounts of water underground, contractor installed additional wells until sufficient dewatering was achieved to allow excavation to continue 	<ul style="list-style-type: none"> Contractor to continue excavation operations, fabrication of pre-cast manholes is complete. Work to raise weir to proceed upon completion of sewer diversion
Regulator Modifications	<ul style="list-style-type: none"> Contractor completing relocation of existing utilities at BB-R09 and BB-R10. Completed excavations for access vaults at BB-R04 and BB-R06. 	<ul style="list-style-type: none"> Complete utility relocations. Complete installation of floors, walls and stairs to access vaults at BB-R04 and BB-R06. Installation of Secant Piles at BB-R09. Complete piles, install sheeting and temporary roadway decking for excavation work at BB-R10. Complete field measurements for

all 5 sites and begin fabrication of stop logs and access hatches.		
.Environmental Dredging	<ul style="list-style-type: none"> • Continued with pre-construction activities, including permitting. 	<ul style="list-style-type: none"> • Start of Construction

4. Jamaica Tributaries CSO

The Jamaica Tributaries CSO Facility Planning area includes the drainage area of the Jamaica WWTP and its associated sewers and pumping stations. The receiving waters of the study area are Bergen, Thurston, Shellbank, and Hawtree Basins, which are located along the eastern shore of Jamaica Bay on either side of JFK International Airport.

Construction Contracts

	Parallel 48-inch Siphon / Interceptor	Bending Weirs
<i>Contract ID</i>	CS-JA-BBS	CS-JA-BWR
<i>Plan Elements</i>	Parallel 48-inch Sewer	Bending Weirs
<i>Location</i>	Belt Parkway Queens	Regulator J6 on the East Interceptor and regulators J3 and J14 on the West Interceptor
<i>Actions</i>	Design and construct system upgrades	Design and construct system upgrades
<i>Construction Cost</i>	\$20,256,909	\$6,853,955
<i>Status</i>	Construction	Completed
<i>Other Issues</i>	Downstream sewer issue. Construction of interceptor anticipated to be complete on time but will run at partial capacity. Potential resolutions to achieve full capacity are under review and will be discussed with DEC.	Force Majeure accepted November 2015.

Design Activity Summary

	This Quarter	Next Quarter
Parallel 48-inch Siphon/Interceptor	<ul style="list-style-type: none"> Continued design services during construction (DSDC) 	<ul style="list-style-type: none"> Continue DSDC
Bending Weirs	<ul style="list-style-type: none"> Continued DSDC 	<ul style="list-style-type: none"> Continue DSDC

Construction Activity Summary

	This Quarter	Next Quarter
Parallel 48-inch Siphon/Interceptor	<ul style="list-style-type: none"> Completed the construction of the Launching Pit and the South Receiving Pit Continued construction of the South Receiver Pit Began demobilization from the North side and started preparing for landscaping work 	<ul style="list-style-type: none"> Complete restoration work of the North and South sections of the project site Activate the new sewer lines as noted above in "issues" Begin working on punch-list work
Bending Weirs	<ul style="list-style-type: none"> Completed regulator modification work at JA-3, JA-14, and JA-6 Currently all bending weirs at all three regulators are in operation and have been inspected as of June 8, 2016 and verified by the NYSDEC representative 	<ul style="list-style-type: none"> Complete punch-list work



5. Newtown Creek CSO

The Newtown Creek CSO Facility Planning area includes the portions of the Newtown Creek WWTP and the Low Level Interceptor of the Bowery Bay WWTP drainage areas that discharge to Newtown Creek, English Kills, Dutch Kills, Whale Creek, Maspeth Creek and the East Branch along the Brooklyn-Queens border.

Construction Contracts

	Enhanced Aeration 2	Enhanced Aeration 3	Bending Weirs / Floatables Control
<i>Contract ID</i>	CSO-NC-3	CSO-NC-4	CS-NC-REG & FLO
<i>Plan Elements</i>	Enhanced Aeration	Enhanced Aeration	Floatables Controls and Overflow Reduction
<i>Location</i>	East Branch and Upper Newtown Creek	Dutch Kills and Lower Newtown Creek	Dutch Kills, Maspeth Creek, English Kills and East Branch
<i>Actions</i>	Contract in construction phase. Expected to complete on time.		Design of bending weirs and baffles to reduce overflows and floatables
<i>Construction Cost</i>	\$15,433,600 (G+E+H Contract amounts together)	\$31,695,425	\$41,900,419
<i>Status</i>	Construction	Procurement	Construction
<i>Other Issues</i>	Coordination with Superfund-related water sampling and LTCP		

Design Activity Summary

	This Quarter	Next Quarter
Enhanced Aeration 2	<ul style="list-style-type: none"> Continued to provide DSDC 	<ul style="list-style-type: none"> Continue providing DSDC
Enhanced Aeration 3	<ul style="list-style-type: none"> CSO NC-4 was advertised for bid on March 17, 2016 and subsequently cancelled. The milestone for NTP has been modified to December 2017. 	<ul style="list-style-type: none"> Continue procurement of the construction contract.
Bending Weirs / Floatables Control	<ul style="list-style-type: none"> Continued to provide DSDC 	<ul style="list-style-type: none"> Continue to provide DSDC

Construction Activity Summary

	This Quarter	Next Quarter
Enhanced Aeration 2	<ul style="list-style-type: none"> Completed the removal of the existing soil stockpile Began the installation of the aeration piping Continued concrete placement for aeration piping ballast blocks Completed pile driving and began the placement of pile caps 	<ul style="list-style-type: none"> Complete the installation of Production Piles and Pile Caps Complete the installation of Aeration Piping Complete casting of concrete ballasts for Aeration Piping. Begin the construction of the blower building and the storage shed
Enhanced Aeration 3	<ul style="list-style-type: none"> No activity 	<ul style="list-style-type: none"> No activity
Bending Weirs / Floatables Control	<ul style="list-style-type: none"> Continued structural modifications at NC-015, NC-77 and BB-26 Began structural modifications at NC-083 Began installation of bending weirs at NC-015 	<ul style="list-style-type: none"> Continue structural modifications and bending weir installations at all four sites



6. Westchester Creek CSO

The Westchester Creek CSO Facility Planning area includes a portion of the Hunts Point WWTP drainage area, its associated sewers, and pumping stations that discharge to Westchester Creek and Pugsley Creek in the Bronx.

Construction Contracts

	Modifications to CSO-29 and CSO-29A	Pugsley Creek Parallel Interceptor Start from CSO-24
<i>Contract ID</i>	CS-ER-WCM	CS-ER-WCP
<i>Plan Elements</i>	Improve flow control structures in sewers to convey more flow to the Hunts Point WWTP	Reduce CSO discharges to Pugsley Creek, which would otherwise <i>increase</i> as a result of the conveyance improvements in Eastchester Road
<i>Location</i>	Eastchester Road, Bronx	Classon Point, Bronx
<i>Actions</i>	Design	Continue Design at DDC
<i>Construction Cost</i>	\$14.5 Million	\$81.5 Million
<i>Status</i>	In Construction	Final Design completed and contract is in award process
<i>Other Issues</i>		

Design Activity Summary

	This Quarter	Next Quarter
Modifications to CSO-29 and CSO-29A	<ul style="list-style-type: none"> Final design is complete 	<ul style="list-style-type: none"> Provide DSDC services. Begin mobilization to start construction activities at CSO-29A
Pugsley Creek Parallel Interceptor Start from CSO-24	<ul style="list-style-type: none"> Final design is complete 	<ul style="list-style-type: none"> Provide DSDC services

Construction Activity Summary

	This Quarter	Next Quarter
Modifications to CSO-29 and CSO-29A	<ul style="list-style-type: none"> Construction activities Potential delay associated with traffic control plan 	<ul style="list-style-type: none"> Continue construction activities
Pugsley Creek Parallel Interceptor Start from CSO-24	<ul style="list-style-type: none"> In Procurement 	<ul style="list-style-type: none"> Award and issue NTP



7. Jamaica Bay CSO

The Jamaica Bay CSO Facility Planning area includes the drainage areas of the 26th Ward, Coney Island, and Rockaway WWTPs and their associated sewers and pumping stations. The receiving waters of the study area include Fresh Creek, Hendrix Creek, Spring Creek, and the open waters of Jamaica Bay.

Construction Contracts

	Rockaway WWTP Conveyance Improvements	26 th Ward High Level Sewer Separation	26 th Ward Wet Weather Stabilization
<i>Contract ID</i>	Project not yet initiated	CS-FC-SEW	26W-12(CO 128) 26W-21, 26W-20
<i>Plan Elements</i>	Improve collection system and WWTP capacity to achieve 2DDWF	Remove storm water contribution from 443 acres from the combined sewer system	Low Level MSPs High Level MSPs PST#5 PST1-4 Stabilization
<i>Location</i>	Rockaway WWTP, Queens	Fresh Creek, Brooklyn	26 th Ward WWTP, Brooklyn
<i>Actions</i>	None	None	-
<i>Construction Cost</i>	TBD	\$57 million for Phases 1a \$71 million for Phases 2a and 2b (estimated). \$63 million for Phases 3a and 3b (estimated)	LLMSP \$7.6 million 26W-21 \$15.7 million 26W-20 \$134.4 million
<i>Status</i>	Project not initiated	CPIs for all 3 phases have been sent to DDC. Phase 1 is in construction	Complete (LLMSPs) In Construction (26W-21) In Construction (26W-20)
<i>Other Issues</i>		Utility Relocation	

Design Activity Summary

	This Quarter	Next Quarter
26th Ward High Level Sewer Separation	<ul style="list-style-type: none"> Design is commencing for the phase 2 contracts 	<ul style="list-style-type: none"> Preliminary Design to continue for Phases 2 and 3 contracts
26th Ward Preliminary Treatment Reliability Improvements	<ul style="list-style-type: none"> PST work (26W-20) NTP given on January 11, 2016 HLMSP work (26W-21) NTP on June 01, 2015 	<ul style="list-style-type: none"> Provide design services during construction (DSDC)

Construction Activity Summary

	This Quarter	Next Quarter
26th Ward High Level Sewer Separation	<ul style="list-style-type: none"> Phase I construction is progressing and contractor is installing water mains 	<ul style="list-style-type: none"> Water main installation to continue
26th Ward Preliminary Treatment Reliability Improvements	<ul style="list-style-type: none"> PST work (26W-20): – Completed demolition of the Ammonia Building and continued to demolish the slab. Ongoing demolition in the Pump and Blower Building to make room for new blowers and personnel areas. Contractor removed Blower No. 2 including concrete pads and piping. Transformer Room floor slab, pads, and wall in the basement were poured in anticipation of installing Transformers 3 and 4 associated with the Blowers. Completed structural and masonry repair in the Degritting Wing. Continued installation of dewatering system in preparation for PST-5 excavation. Completed Glycerol Tanks demolition in the BNR Building. HLMSP work (26W-21): Began installation of electrical conduits between the switchgear, pumps and the 	<ul style="list-style-type: none"> PST work (26W-20): Complete demolition of Ammonia Building slab and installation of dewatering system. Drive piles for PST-5 and begin excavation. Install beams in basement under Transformer Room floor slab and install Transformers. Install Blowers No. 1 through 4. HLMSP work (26W-21): Continue to run conduit and wire in preparation for Main Sewage Pumps replacement. Install seal water system.

**Secondary Resistor Controls.
Began installation of seal water
system conduit. Installed
concrete pads for seal water
system.**



8. Wards Island WWTP Headworks Wet Weather Improvements

The Wards Island WWTP Headworks Wet Weather Improvements consist of work done at the WWTP to increase its wet weather handling capacity. The projects described in this section 3.7 were added to the 2012 CSO Order through a modification effective March 26, 2015 (DEC Case No. CO2-20140314-01).

Construction Contracts

	Main Sewage Pump Reconstruction	Bar Screen Replacement
<i>Contract ID</i>	WI - 288(R)	WI - 280
<i>Plan Elements</i>	Reconstruction of Six (6) Main Sewage Pumps	Replace Bar Screens at Bronx and Manhattan Grit Chambers
<i>Location</i>	Wards Island WWTP	Wards Island WWTP
<i>Status</i>	Certification of Notice to Proceed to Construction sent on March 31, 2015	Certification of Notice to Proceed to Construction sent on December 23, 2014
<i>Construction Cost</i>	\$3,689,000	\$13,229,000
<i>Actions</i>	The second pump has been commissioned	Shop witness schedule first week of July 2015 for one screen for each chamber
<i>Other Issues</i>	The second MSP motor that experienced issues during start-up returned from the motor shop where further repairs were performed and the motor was installed	Potential additional cost to installed BGC bar screen

Design Activity Summary

	This Quarter	Next Quarter
Main Sewage Pump Replacement	<ul style="list-style-type: none"> • Complete 	<ul style="list-style-type: none"> • Complete
Bar Screen Replacement	<ul style="list-style-type: none"> • Continued to provide DSDC 	<ul style="list-style-type: none"> • Continue to provide DSDC

Construction Activity Summary

	This Quarter	Next Quarter
Main Sewage Pump Replacement	<ul style="list-style-type: none"> • Complete the commissioning of second pump and put into service 	<ul style="list-style-type: none"> • Commence installation of third pump
Bar Screen Replacement	<ul style="list-style-type: none"> • 3 of 4 screens in each chamber have been completed 	<ul style="list-style-type: none"> • Last pair of screens to be installed



9. Environmental Benefit Projects

DEP has undertaken these projects in connection with the settlement of an enforcement action taken by New York State and DEC for violations of New York State law and DEC regulations. The Environmental Benefit Projects (EBPs) are funded by DEP and are designed to abate CSOs and/or address wet weather water quality impacts from CSOs and to benefit the waters in and around New York City.

The 2008 Modification to the CSO Consent Order requires not less than \$4 million worth of DEP-funded Environmental Benefit Projects (EBPs) designed to abate CSOs and/or address wet weather water quality impacts from CSOs and to benefit the waters in and around New York City. In addition to the EBPs summarized below, the 2012 Order requires that \$2 million in EBP funding be allocated toward the Hutchinson River and Newtown Creek Neighborhood Demonstration Areas. The funding commitment has been met and the Demonstration Area projects are now complete.

➤ **New York Hospital Green Roof**

Manhattan College

\$660,440 for the installation of a 14,666 sq. ft. modular green roof project. It will be designed to control runoff from a 1 to 1.5-inch rainfall on a half-acre roof.

Status: Year 3 of three-year monitoring period

Invoiced to Date: **\$503,269.**



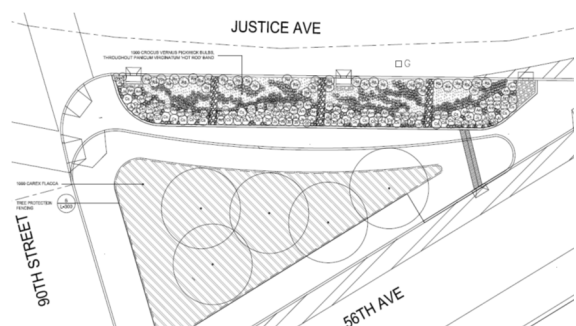
➤ **Rego Park Green Streets**

NYC Audubon Society

\$580,245 for Green Street stormwater capture system that will retrofit an impervious surface and replace it with permeable pavement and vegetation to capture runoff from 7,753 sq. ft. tributary area.

Status: Construction Bidding

Invoiced to Date: \$128,414



➤ **Two Sponge Park™ Bioretention Basins**

Regional Plan Association

\$600,000 for bioretention basins under the Long Island Expressway near the Van Wyck Expressway. One basin has the capacity to treat 1,280 gallons of runoff from a tributary area of 1,800 sq. ft. during a 1.2 inch rainstorm, and the second basin has the capacity to treat 2,460 gallons of runoff from 3,465 sq. ft. impervious area.

Status: Year 2 of three year monitoring period

Invoiced-to-Date: \$464,212



➤ **6th Street Green Corridor Project**

Gowanus Canal Conservancy

\$583,470 to build 11 curbside swales ranging from 400 to 1,200 sf along 6th Street from 2nd Avenue to 4th Avenue in Brooklyn. The project will capture one-inch storm runoff generated within the eleven-swale area, which is over 35,400 sf of street and sidewalk surfaces.

Status: Year 1 of three-year monitoring period

Invoiced-to-Date: **\$431,401**



➤ **Treatment Wetland and Rain Garden**

City Parks Foundation

\$504,340 for treatment wetlands and rain gardens for treating stormwater entering Meadow Lake. This project will construct a 10,000 sf treatment wetland that will receive runoff from two one-acre portions of a parking area in Flushing Meadows Corona Park. The treatment wetland is designed to capture over 76,000 gallons of water generated by each 1.2 -inch rainstorm.

Status: Year 1 of 3 year monitoring period

Invoiced to Date: \$436,327



➤ **Green Infrastructure**

Drexel University

\$893,493 to design, construct, monitor, evaluate, report on and maintain a variety of green infrastructure stormwater capture technologies that also promote ecosystem services in the Bronx River watershed. Projects will be constructed at Bronx High School of Science and Flushing International High School.

Status: Under Construction

Invoiced to Date: \$343,756





10. Green Infrastructure Program

The 2012 CSO Consent Order sets forth schedule and stormwater capture targets, and other requirements for the program to reduce runoff and CSO through the use of green infrastructure.

Program Implementation

DEP has identified Priority Areas based on several criteria, such as annual CSO volume, frequency of CSO events, as well as projected benefits of projects constructed through DEP's Waterbody/Watershed Facility Plans or other system improvements planned for the future. DEP also notes outfalls in close proximity to existing and future public access locations. **DEP continues to review and expand the Priority Areas to ensure sufficient green infrastructure implementation to meet the 2030 goal set forth in the Order.**

The identification of Priority Areas has enabled DEP to focus resources on specific CSO tributary areas, to analyze all potential opportunities, to saturate these areas with green infrastructure as much as possible, and to achieve efficiencies in design and construction.

DEP has initially focused primarily on the Area-wide right-of-way contracts building Right-of-way Bioswales, Right-of-way Rain Gardens, Stormwater Greenstreets, and porous paving. DEP's standardized designs and procedures have been critical to supporting the systematic implementation of green infrastructure at a



Right-of-Way Bioswales



Right-of-Way Rain Gardens

wide scale. DEP expects to continue green infrastructure implementation using an expanding array of tools. As right-of-way implementation continues and reaches its fullest extent over the long term, DEP will increasingly rely on other, more site-specific opportunities on public and private property. Over time, the proportion of program resources devoted to implementation will shift from right-of-way to public property retrofits and other types of green infrastructure tools.

During the **Third Quarter of 2016, planning**, design and construction work continued in three Green Infrastructure (GI) Program initiatives and are generally summarized below.

- Ongoing area-wide GI contracts design and build thousands of Right-of-way Bioswales, Right-of-way Rain Gardens and Stormwater Greenstreets. Design and construction contracts are being implemented in multiple phases.
- Ongoing siting, design and construction of public property retrofits in coordination with City agency and non-profit partners.
- Ongoing design and construction of GI Grant Program projects on private property.



Stormwater Greenstreets



Porous Pavement

Status of Green Infrastructure Practices and Impervious Area Managed

CSO Tributary Drainage Area	Total Green Infrastructure Practices	Total Impervious Area Managed (acres)
Bronx River	89	25
East River / Open Waters	96	46
Flushing Bay	1,006	113
Flushing Creek	78	9
Gowanus Canal	111	9
Hutchinson River	205	26
Jamaica Bay	927	100
Newtown Creek	1,311	110
Paerdegat Basin	4	0
Westchester Creek	3	0
Total	3,830	437*

* The 437 acres represent 0.6% of the total impervious are in combined sewer areas to be managed. This table is cumulative and updated each quarter.



11. Community Relations

*DEP's Public Participation Plan was released to the public on **June 26, 2012** and describes the multipronged tools and activities DEP will utilize to inform and involve diverse stakeholders and the broader public throughout the LTCP process. The Plan provides a framework for communicating with and soliciting input from interested stakeholders on water quality and the challenges and opportunities for CSO controls.*

DEP will report quarterly to DEC on completed public participation activities outlined in the public participation plan as part of this and all future CSO Quarterly Reports. All updates to the Public Participation Plan implemented as a result of public comments received and quarterly reviews of public participation activities by DEC will be posted annually to DEP's website.

Green Infrastructure Meetings

Date	Community Member(s)	Type of Outreach	Attendees
July			
5	SWIM	Meeting	6
8	Chinese Business Delegation	Presentation	15
25	Senator Tony Avella	Meeting	5
27	J.H.S. 185Q Staff and Students	Playground Opening	200
August			
1	Council Member Andy King	Meeting	5
4	Bioswale Stewardship Roundtable	Meeting	20
8	Hudson Estuary Program Citizen Advisory Committee	Presentation	25
September			
7	Assembly Member Edward Braunstein	Meeting	5
8	Assembly Member Michael Simanowitz	Meeting	5
19	HEP Innovative Approaches to Managing Stormwater: Lessons from NJ, NY and Rotterdam	Presentation	25

20	Council Member Rosie Mendez, PS 15 M Staff and Students	Playground Opening	150
22	NYS&WCD Green Infrastructure Bus Tour	Tour	50
23	Cloudburst Copenhagen Delegation	Tour	15
26	Bioswale Meeting with Senator Avella, Assembly Member Simanowitz and Northeast Queens Civic Associations	Meeting	50
Multiple	Queens FY 2018 Budget Consultation	Presentation	Varied
Multiple	Next Generation NYCHA Sustainability Kick-Off Meetings with Staff and Tenant Association members	Site Visits	Varied

LTCP Public Meetings

Date	CSO Watershed	Meeting Topic	Attendees
September			
22	Jamaica Bay	LTCP Kick-off	11

Community Outreach Email Correspondence this Quarter

	July	August	September	Sub-Totals
RSVP to LTCP Meeting	0	0	32	32
Request to be Added	0	1	2	7
Request to be Deleted	0	0	0	0
Press Inquiries	0	0	0	0
Public Comment	0	0	0	0
General Information	1	1	2	4
Sub-Totals	1	2	36	43

Other LTCP Education and Outreach Activities

- **July 5, 2016:** DEP staff met with the SWIM Coalition to discuss the CSO Program and affordability analyses.
- **July 11, 2016:** DEP staff presented at the Manhattan Community Board 1 Planning Committee and presented on the CSO Program.
- **July 13, 2016:** DEP staff attended the Newtown Creek CAG meeting and announced that the Newtown Creek Public Kickoff meeting will be held in fall 2016.
- **July 20, 2016:** DEP staff joined members of the Newtown Creek Alliance and the North Brooklyn Boat Club for a canoe ride and tour of Newtown Creek.

- **July 27, 2016:** DEP staff joined the Guardians of Flushing Bay and the Empire Dragon Boat Team for a dragon boat practice and tour of Flushing Bay.
- **August 11, 2016:** DEP staff presented at the Hudson Estuary Program's Citizen Advisory Committee. The presentation consisted of an updated on the CSO Program including LTCP submittal status, the MS4 Program, and the Green Infrastructure Program.



12. Key DEP Personnel

Planning Area	Project	DEP Responsible Personnel		
		Bureau	Chief	APM
Inner Harbor	CSO-DRDG: Gowanus Dredging	BEDC	Tysvaer	Chao
	CSO-GC: Flushing Tunnel	BEDC	Clarke	Joseph
	CSO-GC: Gowanus PS	BEDC	Clarke	Joseph
Flushing Bay	CSO-DRDG: Dredging	BEDC	Tysvaer	Chao
	PW-088 Assn. 2B: Flushing Interceptor	BWT	TBD	TBD
	CS-FB-LLD: Low-Lying Sewers	BWSO	DeLillo	Gordon
	CS-FB-LLD R2 Weir	BWT	TBD	TBD
	CS-FB-BWR: Regulators	BEDC	Tysvaer	Gordon
	TI-WW-1: Whitestone Interceptor	BEDC	Solimando	Sadat
Jamaica Tributaries	CS-JA-BWR: Bending Weirs	BEDC	Tysvaer	Novotny
	CS-JA-BBS: 48-Inch Sewer	BEDC	Tysvaer	Meshkati
Newtown Creek	CSO-NC-4: Dutch Kills, Lower Newtown	BEDC	Tysvaer	Meshkati
	CSO-NC-3: East Branch, Upper Newtown	BEDC	Tysvaer	Meshkati
	CSO-NC-2: Enhanced Aeration Lower English Kills	BEDC	Tysvaer	Adabi
	CS-NC-REG&FLO: Regulators / Floatables Control	BEDC	Tysvaer	Chao
Westchester Creek	CS-ER-WCM: Modifications to CSO-29 / 29A	BEDC	Tysvaer	Chao
	CS-ER-WCP: Pugsley Creek Parallel Interceptor	BWSO	DeLillo	Garin
Jamaica Bay	CSO-HC: Hendrix Creek Dredging	BEDC	Tysvaer	N. Shah
	CS-FB-SEW: 26th Ward / Fresh Creek HLSS	BWSO	DeLillo	Gordon
	CO 26W-128: Low Level Main Sewage Pumps	BEDC	Solimando	Kharivala
	26W-20: 26th Ward Wet Weather Stabilization	BEDC	Solimando	Heim
	26W-21: 26th Ward High Level Main Sewage Pumps	BEDC	Solimando	Heim
Wards Island	Reconstruction of Main Sewage Pumps (MSP)	BWT	Lochan	A. Parada
	Bar Screen Replacement	BEDC	Moriarty	N. Shah



13. Other Issues

Action Items from October 5, 2016 CSO Quarterly Progress Meeting

Planning Area	Responsible Party	Required Action	Status
Flushing Bay	DEP	<ul style="list-style-type: none"> DEP to submit force majeure on low lying sewers for groundwater issue, include CPM, boring logs, dewatering logs, and discussion of steps contractor took to characterize dewatering requirements 	In Progress
	DEP	<ul style="list-style-type: none"> DEP to review letter on EBP in Flushing Meadows recently sent to DEC 	In Progress
Westchester Creek	DEP	<ul style="list-style-type: none"> DEP to respond to DEC's final comments on Pugsley Creek Interceptor Final Design 	In Progress
	DEC	<ul style="list-style-type: none"> DEC to provide clarification on comments on Pugsley Creek interceptor final design 	Complete
Wards Island	DEP	<ul style="list-style-type: none"> DEP to provide police report on MSP vandalism force majeure 	Complete
Jamaica Bay / Tributaries	DEP	<ul style="list-style-type: none"> DEP to discuss potential proposal(s) to resolve issue of 10-inch sewer line connection to new Bergen Basin parallel interceptors 	In Progress
	DEP	<ul style="list-style-type: none"> DEP to provide updated schedule for interim limits for 26th Ward WWTP PST construction project 	In Progress
	DEP	<ul style="list-style-type: none"> DEP confirm status of NTP for 26th Ward HLSS Phase 1 DEP to provide time impacts for 26th Ward WWTP sludge line rupture on PST work 	In Progress
	DEP	<ul style="list-style-type: none"> DEP to provide time impacts for 26th Ward WWTP sludge line rupture on PST work 	In Progress
LTCPs	DEC	<ul style="list-style-type: none"> DEC to have Gowanus Canal and Bronx River LTCP's undergo further review by their upper management 	In Progress
Misc	DEP	<ul style="list-style-type: none"> Provide flow monitoring and influent sampling data from LTCP sampling efforts (ongoing) 	In Progress



14. Overview of LTCP Program

The goal of each Long-Term Control Plan (LTCP) is to identify appropriate CSO controls necessary to achieve waterbody-specific quality standards, consistent with EPA's 1994 CSO Policy and subsequent guidance.

LTCP Milestones

	CSO Watershed	LTCP Milestone
1	Alley Creek	June 2013
2	Westchester Creek ¹	June 2014
3	Hutchinson River	September 2014
4	Flushing Creek	December 2014
5	Bronx River	June 2015
6	Gowanus Canal	June 2015
7	Coney Island Creek ¹	June 2016
8	Flushing Bay ^{2,3}	December 2016
9	Jamaica Tributaries & Bay ²	June 2017
10	Newtown Creek	June 2017
11	Harlem River ⁴	December 2017
12	Citywide ⁴	December 2018

1) Final approval from DEC to swap Westchester Creek LTCP to June 30, 2014 and Coney Island Creek LTCP to June 30, 2016 received on April 11, 2014.

2) Final approval from DEC to swap Flushing Bay LTCP to June 30, 2016 and Jamaica Tributaries & Bay LTCP to June 30, 2017 received on February 23, 2015.

3) A Modification Request to extend Flushing Bay LTCP to December 31, 2016 was approved by DEC May 17, 2016.

4) Extension of Citywide LTCP Milestone to December 31, 2018 and the addition of the Harlem River LTCP due December 31, 2017 included in Draft Consent Order.

New York City CSO Watersheds





15. Status of LTCP Development

The status of all Long-Term Control Plan development is described below. Where only the planning area and a LTCP due date are shown, work has not yet been initiated as of the reporting quarter. All Waterbody/Watershed Facility Plans (WWFPs) have been approved

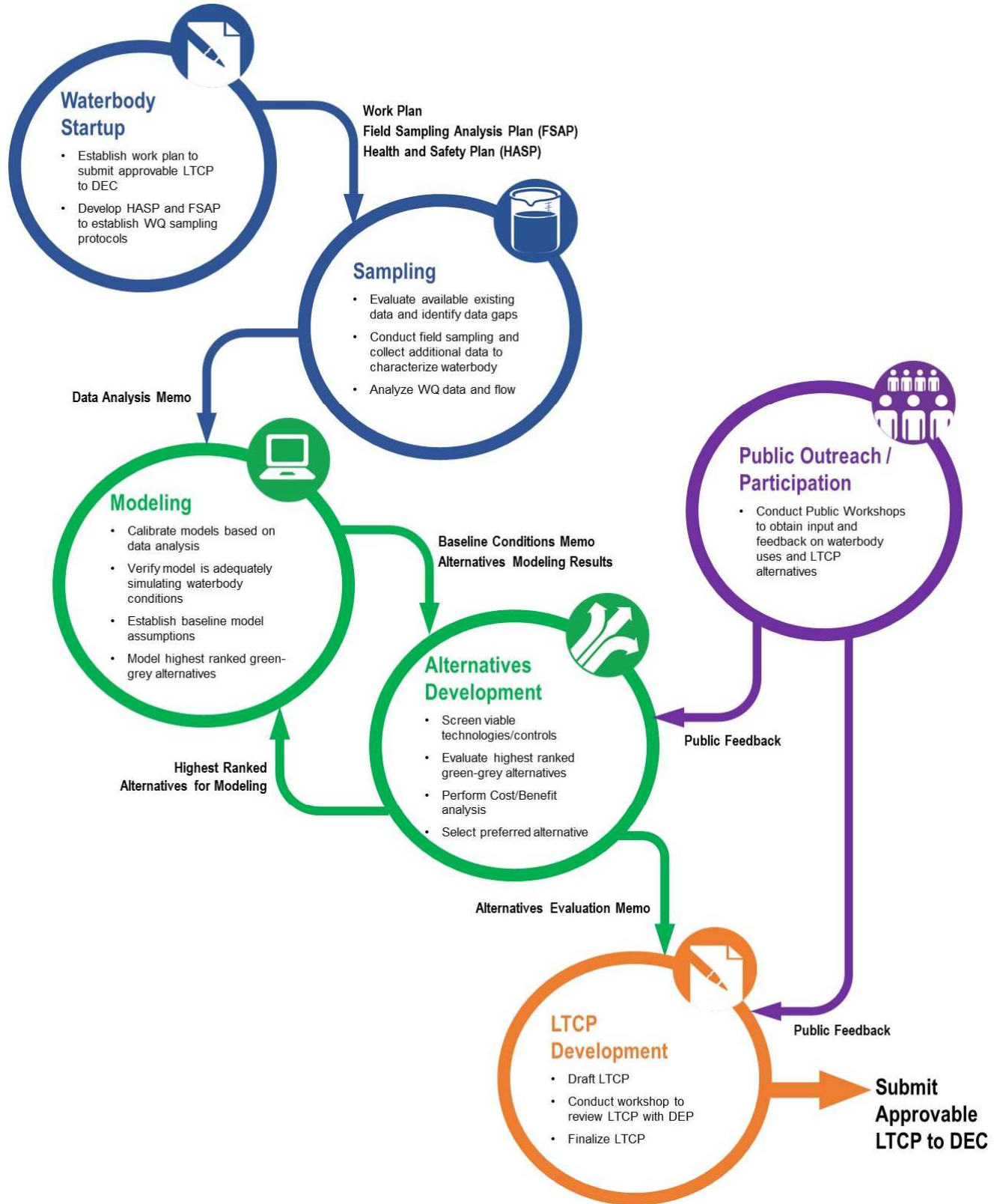
LTCP Activity Status

CSO Watershed	Alley Creek ¹	Westchester Creek ²	Hutchinson River ³	Flushing Creek ⁴	Bronx River ⁵	Gowanus Canal ⁶	Flushing Bay	Coney Island	Jamaica Bay	Newtown Creek	Harlem River	Citywide
LTCP Due Date	June 2013	Jun 2014	Sept 2014	Dec 2014	Jun 2015	Jun 2015	Dec 2016	Jun 2016	Jun 2017	Jun 2017	Dec 2017	Dec 2018
Waterbody Startup	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sampling	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	●	●
Modeling	✓	✓	✓	✓	✓	✓	●	✓	●	●		
Alternatives Development	✓	✓	✓	✓	✓	✓	●	✓	●	●		
LTCP Development	✓	✓	✓	✓	✓	✓	●	✓				
Public Participation ⁷	✓	✓	✓	✓	✓	✓	●	✓				●

LEGEND: = Completed = In Progress = Not Initiated

¹Final Alley Creek LTCP previously submitted to DEC June 30, 2013. Received DEC Determination Letter in December 12, 2013. DEP submitted Article 78 to DEC on February 21, 2014. Resubmitted to DEC on June 30, 2014. DEC Comments Letter received January 23, 2015. Supplemental Documentation submitted May 6, 2015.
²Final Westchester Creek LTCP submitted to DEC in June 30, 2014. DEC Comments Letter received January 14, 2015. Supplemental Documentation submitted April 14, 2015.
³Final Hutchinson River LTCP submitted to DEC in September 30, 2014. DEC Comments Letter received January 14, 2015. Supplemental Documentation submitted April 14, 2015.
⁴Final Flushing Creek LTCP submitted to DEC in December 30, 2014. DEC Comments Letter received January 23, 2015. Supplemental Documentation submitted May 22, 2015.
⁵Final Bronx River LTCP submitted to DEC in June 30, 2015. DEC Comments Letter received August 24, 2015. Supplemental Documentation submitted September 23, 2015.
⁶Final Gowanus Canal LTCP submitted to DEC in June 30, 2015. DEC Comments Letter received August 5, 2015. Supplemental Documentation submitted September 8, 2015.
⁷Considered complete after second meeting. Third meeting to be held upon DEC Acceptance of LTCP.

LTCP Work Plan Flow Chart





16. LTCP Progress Update

CSO Watershed	LTCP Milestone	Progress Update
1 Alley Creek	June 2013	<ul style="list-style-type: none"> ➤ DEP submitted LTCP on 7/2/2013. DEC provided comments on 9/12/13. ➤ A revised LTCP was submitted on 11/12/13. DEC disapproved LTCP on 12/12/13. ➤ DEP resubmitted the LTCP 6/30/14. ➤ DEC comments on LTCP received on 1/23/15. DEP submitted Supplemental Documentation & Responses to Comments on 5/6/15. ➤ 6/4/15 DEC sent comments regarding Spring Creek demo. DEP replied on 8/4/15. DEP submitted follow-up responses on 10/14/15.
2 Westchester Creek	June 2014	<ul style="list-style-type: none"> ➤ LTCP was submitted on 6/30/14. ➤ DEC comments received on 9/22/14. DEP responded on 11/24/14. ➤ Additional DEC comments received on 1/14/15. DEP submitted Supplemental Documentation & Response to Comments on 4/14/15.
3 Hutchinson River	September 2014	<ul style="list-style-type: none"> ➤ LTCP was submitted on 9/30/14. ➤ DEC comments received on 1/14/15. DEP submitted Supplemental Documentation & Response to Comments on 4/14/15. ➤ DEC sent additional comments on 6/10/15. DEP responded on 8/7/15.
4 Flushing Creek	December 2014	<ul style="list-style-type: none"> ➤ LTCP was submitted on 12/30/14. ➤ DEC comments received on 3/23/15. DEP submitted Supplemental Documentation & Response to Comments on 5/22/15. ➤ DEC sent additional comments on 6/10/15. DEP responded on 8/7/15.
5 Bronx River	June 2015	<ul style="list-style-type: none"> ➤ LTCP was submitted on 6/30/15. ➤ DEC comments received on 8/24/15. DEP responded on 9/23/15.
6 Gowanus Canal	June 2015	<ul style="list-style-type: none"> ➤ LTCP was submitted on 6/30/15. ➤ DEC comments received on 8/5/15. DEP submitted Supplemental Documentation & Response to Comments on 9/8/15. ➤ 1/6/16 DEP submitted Gowanus Canal LTCP and Superfund Modeling Peer Review Report.

	CSO Watershed	LTCP Milestone	Progress Update
7	Coney Island Creek	June 2016	<ul style="list-style-type: none"> ➤ DEP submitted LTCP on June 30, 2016. ➤ Comments from DEC was received on August 17, 2016 and responded to on September 16, 2016.
8	Flushing Bay	December 2016	<ul style="list-style-type: none"> ➤ DEP requested a modification for additional 6 months extension to December 2016. DEC approved on May 14, 2016. ➤ Field Sampling Program and Data Analysis completed. ➤ 2016 IW model calibration, baseline and control runs completed; revising LTCP model runs for 2012 version. ➤ WQ and DO model calibration, baseline conditions and performance gap analysis completed; updating results per 2012 IW runs. ➤ Completed site-scale field investigations and model sensitivity analysis. ➤ Further development, model runs and siting analysis for retained alternatives is ongoing. ➤ Continued technical meetings with DEC. ➤ Conducted kick-off and alternatives public meetings.
9	Jamaica Tributaries and Bay	June 2017	<ul style="list-style-type: none"> ➤ Field sampling program completed; Raw Data spreadsheet submitted to DEC on September 20, 2016; data analysis underway. ➤ IW model calibration, baseline conditions and control runs underway. ➤ WQ and DO model calibration, baseline conditions, and performance gap analysis underway. ➤ Initiated development of potential alternatives. ➤ Public kick-off meeting conducted on September 22, 2016.
10	Newtown Creek	June 2017	<ul style="list-style-type: none"> ➤ Field sampling program and data analysis underway. ➤ IW model calibration completed; baseline conditions and control runs underway. ➤ WQ and DO model calibration, baseline conditions and performance gap analysis not initiated; awaiting completion of sampling program. Preliminary performance gap completed. ➤ Continued development of potential alternatives; supporting model runs and siting analysis are ongoing. ➤ Public kick-off meeting scheduled for November 15, 2016.
11	Harlem River	December 2017	<ul style="list-style-type: none"> ➤ Consent Order Milestone to submit Harlem River LTCP in December 2017 included in Draft Consent Order. ➤ Continued Sampling Programs (continuous flow monitoring; field sampling paused until November).
12	Citywide	December 2018	<ul style="list-style-type: none"> ➤ Includes Open Waters and East River LTCPs. ➤ DEP requested a modification for additional 12 months extension to December 2018; Draft Consent Order indicates Milestone date of December 2018. ➤ Continued Phase I (Hudson River) Sampling Programs (continuous flow monitoring; field sampling paused until November). Phase II and III sampling Program to be initiated in March 2017.

