NYC Environmental Protection

**Vincent Sapienza, P.E.**
*Commissioner*

**James Mueller, P.E.**
*Acting Deputy Commissioner*

**Bureau of Engineering Design & Construction**
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January 8, 2018

Joseph DiMura, P.E.
Director, Bureau of Water Compliance
New York State Department of Environmental Conservation
625 Broadway, 4th Floor
Albany, New York 12233-3506

**Re: Order on Consent ("CSO Order"), DEC Case #CO2-20110512-25**
**Modification to DEC Case #CO2-20000107-8, Appendix A**
**VIII. Newtown Creek CSO, M. Submit Approvable Drainage Basin Specific LTCP for Newtown Creek**

Dear Mr. DiMura:

On June 30, 2017 the New York City Department of Environmental Protection (DEP) submitted the Newtown Creek Long Term Control Plan (LTCP) to the New York State Department of Environmental Conservation's (DEC). DEP received DEC's review comments on the LTCP on November 9, 2017. DEP and DEC technical staff discussed technical comments on December 19, 2017. DEP's responses to DEC's comments are included as an attachment to this letter. Some of the comments require additional evaluation and technical analysis. To respond to such comments, DEP will provide the requested information in an LTCP technical memo. Due to the time required for such additional evaluations, DEP proposes to submit the LTCP technical memo to DEC by April 30, 2018.

Please feel free to contact me at (718) 595-5972 or kmahoney@dep.nyc.gov should you have any questions regarding this submittal.

Sincerely,

Keith Mahoney

Keith Mahoney, P.E.
Acting LTCP Program Manager

**Copy to:**

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RESPONSES TO NOVEMBER 4, 2017 DEC COMMENTS ON THE NEWTOWN CREEK LTCP

1. **Floatables Control.** Evaluate the benefits and feasibility of floatables control on CSO outfalls other than the four largest outfalls to Newtown Creek, such as BB-009, NCQ-029, and BB-013. In addition, under the City-wide LTCP, DEP should evaluate installing floatables control technologies at the CSO regulators/outfalls on the East River that will experience increased overflows because of the Newtown Creek LTCP.

   **Response:** *The four largest outfalls to Newtown Creek (BB-026, NC-015, NC-077 and NC-083) contribute 1,055 MG (91%) of the baseline annual CSO volume to the Creek. The installation of bending weirs and underflow baffles at these outfalls was completed in November 2017, so floatables control is currently being provided for over 90% of the baseline volume. Outfalls BB-009, BB-013, and NCQ-029 together contribute only 7 % of the annual baseline volume. In addition, the Borden Avenue Pump Station expansion project recommended in the LTCP will reduce overflows at outfall BB-026, and is predicted to reduce the annual volume at outfall BB-009 by approximately 16 MG/yr.*

   *DEP is currently reviewing the configurations of the regulators associated with outfalls BB-009, BB-013, and NCQ-029 to assess the feasibility of installing the preferred option of floatables control, underflow baffles. Key considerations in the feasibility and cost-effectiveness of the baffles will be whether the baffles can be installed without adversely affecting the upstream hydraulic grade line, and without extensive structural modifications to the existing regulators. A recommendation for floatables control for outfalls BB-009, BB-013, and NCQ-029 will be presented in an LTCP technical memo to be submitted by the end of April 2018.*

   *Consistent with DEC's comment, in the Citywide LTCP, DEP will evaluate the feasibility and cost-effectiveness of installing floatables control at the East River outfalls that are predicted to experience increased overflow volumes as a result of the proposed Borden Avenue Pump Station expansion project.*

2. **Estimated Cost.** The costs savings from elimination of the Phase 4 of Enhanced Aeration should be factored into the cost estimates for the alternatives (it should decrease the cost estimated for the alternatives).

   **Response:** *The Engineer's estimated construction bid cost for Phase 4 of Enhanced Aeration was $30.8M. As described in Section 8 of the LTCP, as the water quality assessments indicated that the Class SD DO criterion is predicted to be met in Dutch Kills and the main trunk of Newtown Creek under Baseline Conditions, DEP recommended eliminating the previously proposed Phase 4 aeration system. For planning purposes, DEP believes it is important to present the actual estimated costs of the alternatives for Dutch Kills. In response to DEC's comment, DEP proposes to add a sentence identifying the projected cost estimates of the Phase 4 Aeration project in relation to the projected cost estimates for the alternatives in appropriate locations within the text of Section 8 and the Executive Summary where costs of alternatives for Dutch Kills are presented. These edits to the text will be presented in an LTCP technical memo.*

3. **Synergies within Bowery Bay Drainage.** During a January 26, 2016 CSO technical meeting, DEP proposed evaluating alternatives for the entire Bowery Bay drainage area holistically to identify synergies with currently approved LTCPs. Confirm if DEP will continue to evaluate alternatives for additional opportunities for CSO reduction from the Newtown drainage area using this approach under the City-wide LTCP and how the upgrade to the Borden Avenue PS fits into that analysis.

   **Response:** *DEP anticipates further investigating the hydraulic interrelationships among outfalls in the Bowery Bay and Newtown Creek WWTP service areas as part of the evaluation of alternatives for East River and Bowery Bay outfalls under the East River/Open Waters with Citywide LTCP. The evaluation of alternatives for the East River or Bowery Bay CSOs under the Citywide LTCP will consider the potential hydraulic impacts on the performance of the Borden Avenue Pump Station Expansion project. The evaluation may include assessing the impacts of pumping dry weather flow from the Bowery Bay system to the Newtown Creek WWTP via the proposed Borden Avenue Pump Station Expansion project.*

4. **Baseline CSO Volumes.** Include a table like Table 6.2 that includes the flows for the East River CSO outfalls that will be impacted by the Borden Avenue PS upgrades.

   **Response:** *Table 6-2a below lists the 2008 Baseline Conditions CSO Volumes and Activations for the East River CSOs associated with the Bowery Bay Low Level Interceptor and the Newtown Creek WWTP. Although not all the outfalls in this table will be affected by the proposed Borden Avenue Pump Station Expansion, listing all of the outfalls provides context for the outfalls where the volumes would increase. A similar table will be inserted into Section 8 to show the impact of the Borden Avenue Pump Station Expansion under the LTCP Recommended Plan, as presented below in response to Comment No. 14. This table will be incorporated in an LTCP technical memo.*

**Table6-2a. 2008 Baseline CSO Volume and Overflows per Year – East River CSOs Associated with Newtown Creek WWTP and Bowery Bay WWTP Systems**

| | | Volume | Annual Overflow Events |
|---|---|---|---|
| | | Total Discharge (MG/yr) | Total (No./yr) |
| | BB-016 | 1.8 | 17 |
| | BB-017 | 1.7 | 20 |
| | BB-018 | 1.1 | 17 |
| | BB-021 | 23.4 | 34 |
| | BB-022 | 1.0 | 12 |
| | BB-023 | 16.4 | 30 |
| | BB-024 | 36.4 | 28 |
| | BB-025 | 11.0 | 30 |
| | BB-027 | 6.1 | 27 |

**Table6-2a. 2008 Baseline CSO Volume and Overflows per Year – East River CSOs Associated with Newtown Creek WWTP and Bowery Bay WWTP Systems**

| | | Volume | Annual Overflow Events |
|---|---|---|---|
| | | Total Discharge (MG/yr) | Total (No./yr) |
| | BB-028 | 352 | 44 |
| | BB-029 | 105 | 32 |
| | BB-030 | 27.6 | 43 |
| | BB-031 | 3.9 | 18 |
| | BB-032 | 1.9 | 17 |
| | BB-033 | 6.1 | 28 |
| | BB-034 | 202 | 57 |
| | BB-035 | 3.9 | 32 |
| | BB-036 | 8.9 | 30 |
| | BB-037 | 0.6 | 8 |
| Steinway Creek/BBL | BB-041 | 84.2 | 61 |
| | BB-045 | 0.04 | 1 |
| | BB-046 | 7.0 | 33 |
| | BB-047 | 2.0 | 21 |
| **Subtotal BBL** | | **904** | **61 (max)** |
| | NC-003 | 0.4 | 10 |
| | NC-004 | 15.9 | 36 |
| | NC-006 | 92.2 | 42 |
| | NC-007 | 7.5 | 31 |
| | NC-008 | 21.6 | 32 |
| | NC-010 | 0.0 | 0 |
| | NC-012 | 30.8 | 15 |
| | NC-013 | 58.3 | 28 |
| Wallabout Channel/NCWWTP | NC-014 | 607 | 27 |
| | NC-024 | 0.0 | 0 |
| | NC-025 | 0.5 | 10 |
| | NC-026 | 0.3 | 7 |
| | NC-027 | 13.3 | 31 |
| | NC-082 | 0.6 | 10 |
| **Subtotal NCWWTP** | | **848** | **42 (max)** |
| **Total** | | **1,752** | **61 (max)** |

Notes:

(1) BBL = Bowery Bay Low Level Interceptor, to Bowery Bay WWTP

(2) NCWWTP = Newtown Creek WWTP system

5. **Initial Screening of Alternatives.** In section 8.1.i, the discussion under the Pumping Station Modification category focuses only on the pump stations for the Newtown Creek WWTP, but there are pump stations associated with the Bowery Bay WWTP that are also located within the Newtown Creek drainage basin

and these facilities should be considered for expansion or upgrading. As such, this section should mention the Borden Avenue PS as one facility that will be evaluated further.

**Response:** *A sentence will be added to the Pumping Station Modification category to identify that the expansion of the Borden Avenue Pump Station was identified for further evaluation and that there are no other sanitary pump stations within the Newtown Creek drainage area that discharge to the Bowery Bay WWTP system.*

6. **Green Infrastructure.** Though beyond the terms of the LTCP and CSO Order, the public has suggested and DEC supports that the DEP take steps to assess and provide detail on the potential for additional GI implementation in the highly industrial areas of the Newtown Creek watershed. Such an LTCP assessment could include creating an inventory of large private sites within drainage area outfalls not targeted for grey infrastructure investments and the development of an upper and lower bound estimate of potential future CSO volume reductions from those targeted outfalls. GI program annual reports could update the private property inventory and progress in DEP's efforts to advance retrofits in those drainage areas that can be counted towards the City-wide GI goals of the CSO Order.

**Response:** *DEP believes any assessment of GI or CSO volume reduction and an inventory of GI projects is best addressed in the Green Infrastucture Annual Report. To update DEC on this effort separate from the LTCP, please note that DEP has a Request for Proposals (RFP) under development to select a Program Administrator to administer a new Private Property Retrofit Incentive Program. The first phase of the Program will target privately owned properties in the combined sewer areas of the City that are categorized in two tiers. Tier 1 includes properties that are greater than 100,000 square feet (sf) in gross area. Tier 2 includes properties that are greater than 50,000 sf and less than 99,999 sf in gross area. The Program Administrator will be charged with retrofitting 200 Greened Acres (a Greened Acre is defined as one inch of stormwater managed over one acre) within Tier 1 and Tier 2 properties in the first phase of the Program. Key components of the Program Administrator's scope and ultimate success of the Program include effective targeted marketing of the* ***voluntary*** *retrofit Program and project bundling or aggregation to achieve cost and time efficiencies. DEP has preliminarily identified 130 Tier 1 and Tier 2 properties within the Newtown Creek watershed. Prior to execution of the contract with the Program Administrator and subsequent Program rollout, DEP will be engaging Tier 1 and Tier 2 property owners and stakeholders with ties to these property owners.*

*In addition, the Office of Green Infrastructure's ROW Program has active contracts in all CSO tributary areas to Newtown Creek including those not targeted for grey infrastructure controls, BB-009, BB-043, BB-014, BB-013, NCB-022, and NCQ-029. This is in addition to ROW projects in tributary areas that are targeted for grey infrastructure controls, BB-026, NCB-015, NCB-083, and NCQ-077. Contracts in the tributary areas not targeted for grey infrastructure controls are in various stages of design and construction and DEP will continue to report on them in the Green Infrastructure Annual Report.*

*DEP is also looking at public onsite opportunities in the entire Newtown Creek watershed, including outfalls not targeted for grey infrastructure controls. Active public onsite projects in Newtown Creek are in various stages of design and construction, with several more in planning stages pending the kick-off of three new public onsite design contracts. DEP will continue to report on the status of these projects in the Green Infrastructure Annual Report.*

7. **Table ES-2.** Some of the CSO outfalls have a Discharge Volume in Million Gallons per Year (MGY) of "0" but also indicate that there are overflow events, thus the table should either include a footnote explaining that discharges are less than 1 MGY or in insert >0 in the table.

**Response:** *Table ES-2 has been revised below to show volumes to one decimal point, thus eliminating the reference to outfalls with one or more activations and zero volume. The table has also been expanded to identify the waterbody and transport system associated with each outfall. This table (and a revised Table 6.2, which is the same table as ES-2) will be incorporated into the LTCP via an LTCP technical memo.*

**Table ES-2. 2008 Baseline CSO Volume and Overflows per Year – Newtown Creek CSOs**

| | | Volume | Annual Overflow Events |
|---|---|---|---|
| | | Total Discharge (MG/yr) | Total (No./yr) |
| | BB-004 | 0.1 | 1 |
| | BB-009 | 43.0 | 34 |
| | BB-010 | 0.5 | 7 |
| | BB-011 | 1.6 | 14 |
| | BB-012 | 0.1 | 1 |
| | BB-013 | 16.2 | 31 |
| | BB-014 | 1.8 | 18 |
| | BB-015 | 0.7 | 13 |
| | BB-026[3] | 120 | 37 |
| | BB-040 | 1.1 | 16 |
| | BB-042 | 1.5 | 22 |
| | BB-043 | 9.4 | 32 |
| English Kills/NCWWTP[2] | NCB-015[3] | 321 | 31 |
| | NCB-019 | 3.0 | 21 |
| | NCB-021 | 0.0 | 0 |
| | NCB-022 | 7.5 | 29 |
| | NCB-023 | 0.5 | 8 |
| | NCQ-029 | 18.7 | 40 |
| Maspeth Creek/NCWWTP | NCQ-077[3] | 300 | 41 |
| Newtown Creek/NCWWTP | NCB-083[3] | 314 | 42 |
| | NCB-002[4] | N/A | N/A |

**Table ES-2. 2008 Baseline CSO Volume and Overflows per Year – Newtown Creek CSOs**

| | | Volume | Annual Overflow Events |
|---|---|---|---|
| | | Total Discharge (MG/yr) | Total (No./yr) |
| Total | | 1,161 | 42 (max) |

Notes:

(1) BBL = Bowery Bay Low Level Interceptor, to Bowery Bay WWTP
(2) NCWWTP = Newtown Creek WWTP system
(3) NCB-015 + NCB-083 + NCQ-077 + BB-026 = 91% of Total Annual Volume.
(4) NCB-002 is the Newtown Creek WWTP high relief outfall that discharges to Whale Creek Canal. This flow is treated before discharge.

8. **Pages ES-7 and ES-9.** The LTCP states that the dry-weather geometric means for fecal coliform at Stations NC-4 to NC-14 are all above 200 cfu/100mL but attributes the elevated bacterial levels to a slow time to recovery following a wet weather event, as opposed to being caused by a dry-weather source of bacteria in the creek. While a slow recovery time is plausible, the Department recommends that DEP conduct track-down in Newtown Creek to confirm if there are any illicit discharges. On Page 2-24, the LTCP states that there are over 150 non-CSO, non-MS4 pipes located along the banks of Newtown Creek, which could be a source of illicit discharges.

   **Response:** *BWT Shoreline staff has been doing periodic track downs in Newtown Creek over the last few years. They have abated multiple illicit connections and have reported other ongoing discharges to DEC Region 2.*

   *With regard to the non-CSO and non-MS4 pipes mentioned in the LTCP, if BWT Shoreline sees a dry weather discharge, it is reported to DEC. However, BWT Shoreline has not observed anything in the past year. Many of the outfalls are submerged most of the time. The area around NCQ-077 has private sewers and most of the area has no sewer fronting the building.*

9. **Page ES-27.** Section "Estimated Costs of Retained Alternatives and Selection of the Preferred Alternative", the expansion of BAPS is listed as a 24 MGD expansion whereas the Table ES-11 listed it as 26 MGD. Please reconcile this discrepancy.

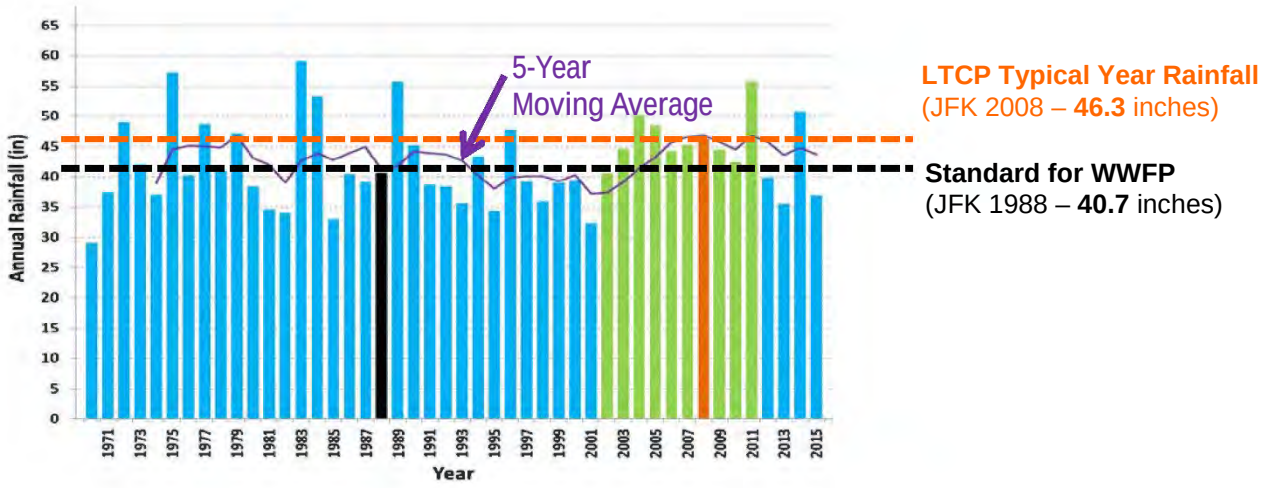
   **Response:** *The total capacity of the expanded Borden Avenue Pump Station should be indicated as 26 MGD. The text on page ES-27 will be revised to clarify, and the text on page 8-55 will be similarly revised. The revised text will be incorporated in an LTCP technical memo.*

10. **Table 2-14.** Confirm that there are no endangered or threatened species within the Newtown Creek waterbody.

**Response:** *The criteria for including a waterbody on the New York State Department of State's (DOS) list of Significant Coastal Fish and Wildlife Habitats include whether the waterbody supports populations of species which are endangered, threatened or of special concern. Specifically, the species would have to be resident in the ecosystem or the ecosystem contributes significantly to the survival of the rare species in New York. Newtown Creek is not listed on the DOS website (https://www.dos.ny.gov/opd/programs/consistency/scfwhabitats.html) as a Significant Coastal Fish and Wildlife Habitat. This source provides the basis of the finding presented in Table 2-14.*

11. **Page 2-16.** On Figure 2-8, adjust purple leader depicting the "5-Year Rolling Average".

**Response:** *The revised figure below will be incorporated into the LTCP technical memo.*




12. **Page 2-17.** Table 2-4 listed the "Other" acreage contributing to Newtown Creek at 923 acres; clarify what "Other" means.

**Response:** *The "Other" acreage includes cemeteries and the Sunnyside rail yard. A footnote will be added to the table and will be incorporated in an LTCP technical memo.*

13. **Page 2-22.** The LTCP states that the Glendale PS is a stormwater station that discharges into the combined sewer system. Confirm if the DEP considered discharging the stormwater directly to the waterbody.

**Response:** *Routing of the flow from the Glendale Pumping Station directly to Newtown Creek was initially considered as part of preliminary evaluations. However, the small contribution from this 1.2 MGD peak capacity stormwater pumping station to the combined sewer system and the approximately three miles of new force main construction required to reach Newtown Creek led to an early dismissal of this concept as a viable or cost-effective option.*

*Figure 1 shows the location of the Glendale Pumping Station relative to Newtown Creek. The pump station is located on Cooper Avenue west of 76th Street. No high-level storm sewers are located in the vicinity of the Glendale Pumping Station.*

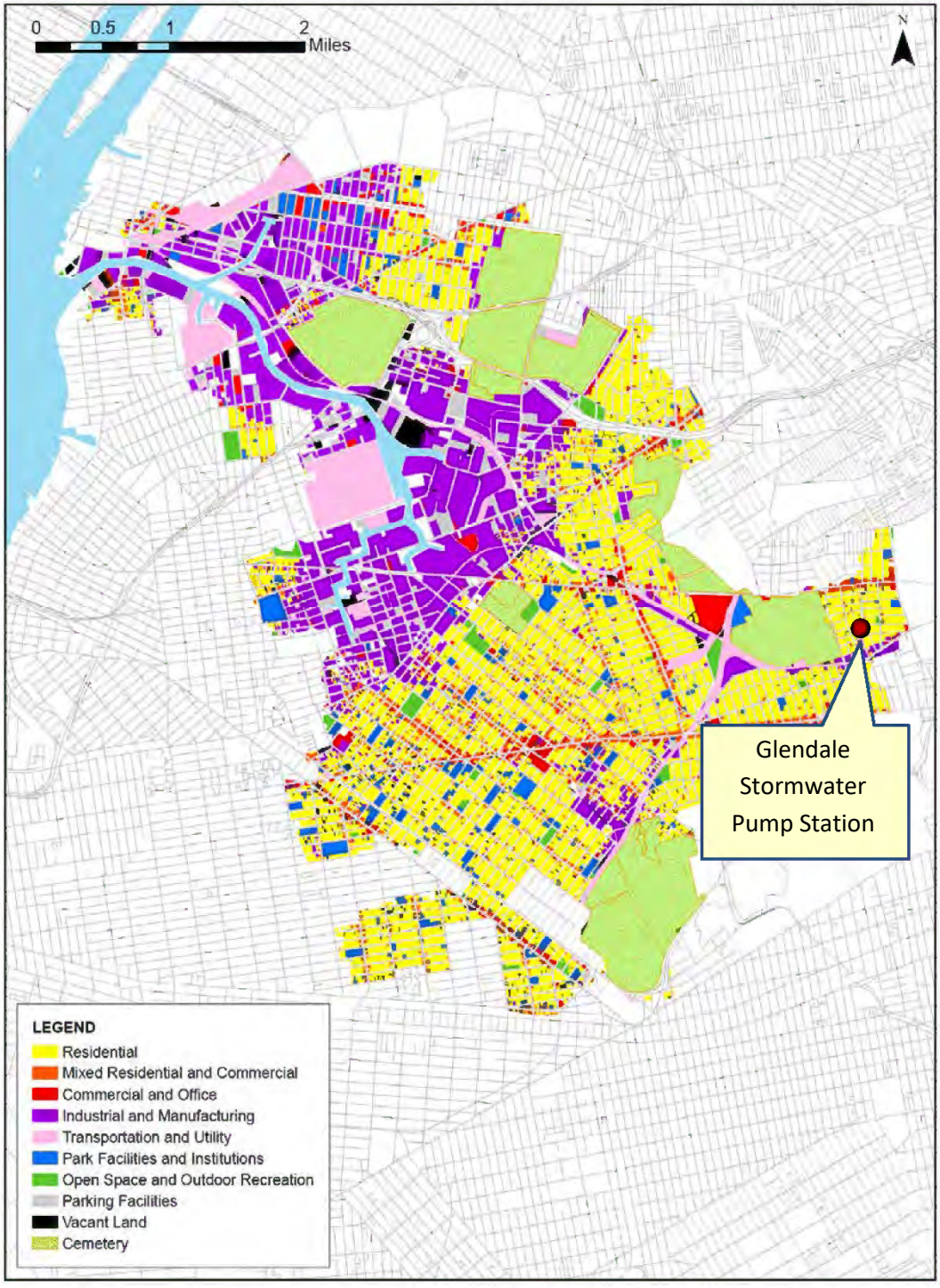



**Figure 1. Location of Glendale Stormwater Pump Station**

14. Somewhere in Section 8, include a table that provides the CSO volumes for each outfall for baseline condition and selected alternative and include outfalls along East River impacted by the Borden Avenue PS.

**Response:** *Tables 8-27a and 8-27b below present the baseline and recommended plan annual overflow volumes and frequencies for 2008, for the Newtown Creek and East River CSOs associated with the Bowery Bay and Newtown Creek WWTPs. These tables will be incorporated in an LTCP technical memo.*

**Table 8-27a. 2008 Baseline and Recommended Plan CSO Volume and Overflows per Year – Newtown Creek CSOs**

| | | 2008 Baseline | | Recommended Plan | |
|---|---|---|---|---|---|
| | | Volume | Annual Overflow Events | Volume | Annual Overflow Events |
| | | Total Discharge (MG/yr) | Total (No./yr) | Total Discharge (MG/yr) | Total (No./yr) |
| | BB-004 | 0.1 | 1 | 0.0 | 0 |
| | BB-009 | 43.0 | 34 | 27.4 | 27 |
| | BB-010 | 0.5 | 7 | 0.8 | 11 |
| | BB-011 | 1.6 | 14 | 2.3 | 16 |
| | BB-012 | 0.1 | 1 | 0.1 | 1 |
| | BB-013 | 16.2 | 31 | 15.3 | 30 |
| | BB-014 | 1.8 | 18 | 1.7 | 18 |
| | BB-015 | 0.7 | 13 | 0.7 | 13 |
| | BB-026[3] | 120 | 37 | 29.3 | 25 |
| | BB-040 | 1.1 | 16 | 0.9 | 12 |
| | BB-042 | 1.5 | 22 | 1.2 | 17 |
| | BB-043 | 9.4 | 32 | 8.6 | 33 |
| English Kills/NCWWTP[2] | NCB-015[3] | 321 | 31 | 119 | 13 |
| | NCB-019 | 3.0 | 21 | 2.9 | 20 |
| | NCB-021 | 0.0 | 0 | 0.0 | 0 |
| | NCB-022 | 7.5 | 29 | 8.3 | 28 |
| | NCB-023 | 0.5 | 8 | 0.6 | 9 |
| | NCQ-029 | 18.7 | 40 | 18.7 | 40 |
| Maspeth Creek/NCWWTP | NCQ-077[3] | 300 | 41 | 100 | 18 |
| Newtown Creek/NCWWTP | NCB-083[3] | 314 | 42 | 112 | 22 |
| | NCB-002[4] | N/A | N/A | N/A | N/A |
| Total | | 1,161 | 42 (max) | 450 | 40 (max) |

Notes:

**Table 8-27a. 2008 Baseline and Recommended Plan CSO Volume and Overflows per Year – Newtown Creek CSOs**

| | | 2008 Baseline | | Recommended Plan | |
|---|---|---|---|---|---|
| | | Volume | Annual Overflow Events | Volume | Annual Overflow Events |
| | | Total Discharge (MG/yr) | Total (No./yr) | Total Discharge (MG/yr) | Total (No./yr) |

(1) BBL = Bowery Bay Low Level Interceptor, to Bowery Bay WWTP
(2) NCWWTP = Newtown Creek WWTP system
(3) NCB-015 + NCB-083 + NCQ-077 + BB-026 = 91% of Total Annual Volume.
(4) NCB-002 is the Newtown Creek WWTP effluent outfall that discharges to Whale Creek Canal during peak flow and high tide conditions. This flow is treated before discharge.

**Table 8-27b. 2008 Baseline and Recommended Plan CSO Volume and Overflows per Year – East River CSOs Associated with Newtown Creek WWTP and Bowery Bay WWTP Systems**

| | | 2008 Baseline | | Recommended Plan | |
|---|---|---|---|---|---|
| | | Volume | Annual Overflow Events | Volume | Annual Overflow Events |
| | | Total Discharge (MG/yr) | Total (No./yr) | Total Discharge (MG/yr) | Total (No./yr) |
| | BB-016 | 1.8 | 17 | 1.7 | 16 |
| | BB-017 | 1.7 | 20 | 1.6 | 20 |
| | BB-018 | 1.1 | 17 | 1.1 | 16 |
| | BB-021 | 23.4 | 34 | 22.5 | 34 |
| | BB-022 | 1.0 | 12 | 1.0 | 11 |
| | BB-023 | 16.4 | 30 | 16.1 | 28 |
| | BB-024 | 36.4 | 28 | 35.9 | 28 |
| | BB-025 | 11.0 | 30 | 10.9 | 29 |
| | BB-027 | 6.1 | 27 | 6.1 | 27 |
| | BB-028 | 352 | 44 | 349 | 43 |
| | BB-029 | 105 | 32 | 105 | 32 |
| | BB-030 | 27.6 | 43 | 27.5 | 43 |
| | BB-031 | 3.9 | 18 | 3.9 | 18 |
| | BB-032 | 1.9 | 17 | 1.9 | 17 |
| | BB-033 | 6.1 | 28 | 6.1 | 29 |
| | BB-034 | 202 | 57 | 202 | 57 |
| | BB-035 | 3.9 | 32 | 3.9 | 32 |
| | BB-036 | 8.9 | 30 | 8.9 | 29 |
| | BB-037 | 0.6 | 8 | 0.6 | 8 |

**Table 8-27b. 2008 Baseline and Recommended Plan CSO Volume and Overflows per Year – East River CSOs Associated with Newtown Creek WWTP and Bowery Bay WWTP Systems**

| | | 2008 Baseline | | Recommended Plan | |
|---|---|---|---|---|---|
| | | Volume | Annual Overflow Events | Volume | Annual Overflow Events |
| | | Total Discharge (MG/yr) | Total (No./yr) | Total Discharge (MG/yr) | Total (No./yr) |
| Steinway Creek/BBL | BB-041 | 84.2 | 61 | 84.2 | 61 |
| | BB-045 | 0.04 | 1 | 0.04 | 1 |
| | BB-046 | 7.0 | 33 | 7.0 | 33 |
| | BB-047 | 2.0 | 21 | 2.0 | 20 |
| **Subtotal BBL** | | **904** | **61 (max)** | **899** | **61 (max)** |
| | NC-003 | 0.4 | 10 | 0.4 | 10 |
| | NC-004 | 15.9 | 36 | 17.0 | 36 |
| | NC-006 | 92.2 | 42 | 104.5 | 42 |
| | NC-007 | 7.5 | 31 | 8.0 | 31 |
| | NC-008 | 21.6 | 32 | 24.4 | 31 |
| | NC-010 | 0.0 | 0 | 0.0 | 1 |
| | NC-012 | 30.8 | 15 | 36.7 | 18 |
| | NC-013 | 58.3 | 28 | 72.9 | 27 |
| Wallabout Channel/NCWWTP | NC-014 | 607 | 27 | 646.5 | 29 |
| | NC-024 | 0.0 | 0 | 0.0 | 0 |
| | NC-025 | 0.5 | 10 | 0.5 | 11 |
| | NC-026 | 0.3 | 7 | 0.3 | 10 |
| | NC-027 | 13.3 | 31 | 16.1 | 30 |
| | NC-082 | 0.6 | 10 | 0.6 | 10 |
| **Subtotal NCWWTP** | | **848** | **42 (max)** | **929** | **42 (max)** |
| **Total** | | **1,752** | **61 (max)** | **1,828** | **61 (max)** |

Notes:

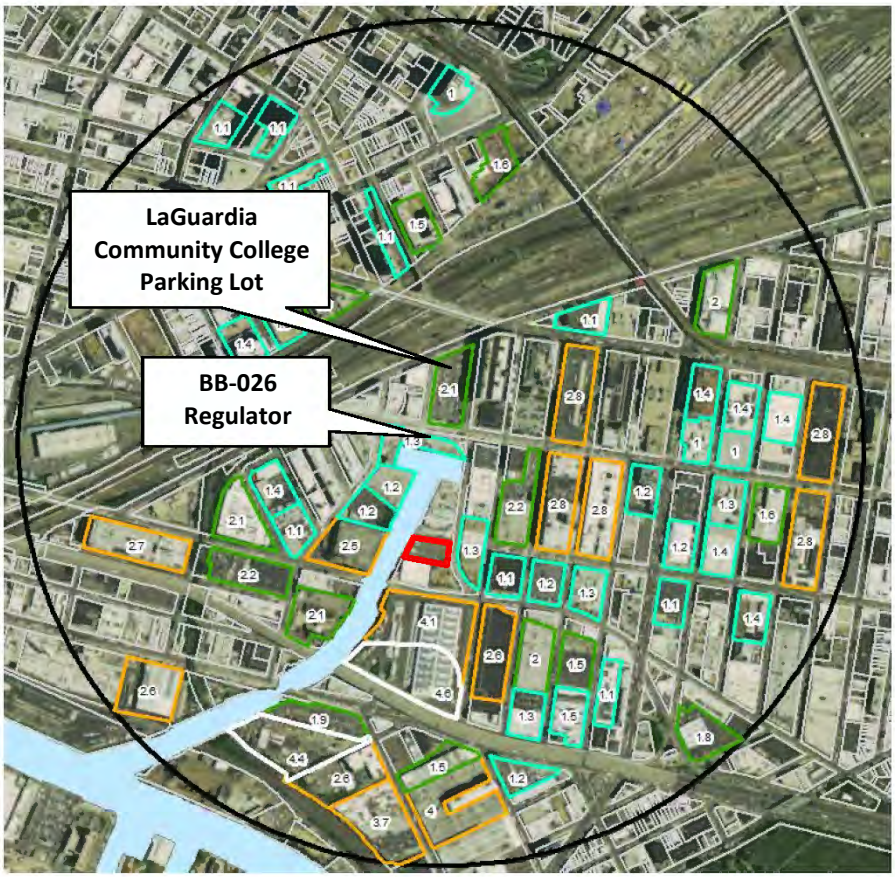
(1) BBL = Bowery Bay Low Level Interceptor, to Bowery Bay WWTP

(2) NCWWTP = Newtown Creek WWTP system

15. **Section 8.2.** The DEP should evaluate the benefits and costs of a storage tank for BB-026, and compare those benefits and costs to those for the upgrade to the Borden Avenue PS. This evaluation should also include the technical feasibility and limitations of operating a tank at BB-026 detailing pump back requirements and any capacity restraints at Newtown Creek WWTP and/or Bowery Bay WWTP given the pump back requirements of the proposed future storage tunnels for Newtown Creek and Flushing Bay.

**Response:** *Storage for outfall BB-026 was evaluated in the LTCP. As described in Section 8 of the LTCP, a review of existing parcels in the vicinity of Outfall BB-026 was performed to identify potential sites for retention/treatment facilities. The siting review looked at parcels within a half-mile radius of the CSO regulator associated with the outfall. The initial siting assessment looked for unoccupied sites that did not have existing buildings, while cemeteries, schoolyards and rail yards were excluded as potential sites. The sizes of the unoccupied sites were then compared against the space needed for either a storage tank or a flow-through retention/treatment basin (RTB) to provide 25, 50, 75, or 100 percent CSO control. For Outfall BB-026, the results of this analysis were that one site was identified that could provide 25 percent control for a storage tank, or 50 percent control for an RTB. This site was an open lot located along the east side of Dutch Kills.*

*Based on the limited number of unoccupied sites identified, the siting assessment was expanded to look at all parcels within a half-mile radius of the CSO regulator, regardless of whether the parcel was occupied by an existing building (Figure 2; note this figure had been developed as part of the alternatives development process, but was not included in the LTCP). Cemeteries, schoolyards and rail yards remained excluded as potential sites. While this approach identified more potential parcels of sizes sufficient to accommodate storage tanks or RTBs at higher levels of CSO control, the challenges of obtaining these sites for CSO storage tanks or RTBs were clearly recognized.*




| Storage Tank | | |
|---|---|---|
| % Annual Control | Required Area(1) (acres) | # of Identified Parcels(2) |
| 25 | 1.0 | 32 |
| 50 | 1.5 | 16 |
| 75 | 2.3 | 13 |
| 100 | 4.3 | 2 |

1) Includes 50 ft. setback.
2) Cemeteries, schools and rail yards not included

Only sites not at least partially occupied by buildings were the 1-acre site indicated in red along the east shore of Dutch Kills, and the parking lot for LaGuardia Community College just north of Dutch Kills.

***Figure 2. Siting Evaluation for BB-026 Storage***

*As further noted in Section 8, a CSO storage tank alternative to provide an equivalent level of control to the recommended Borden Avenue Pump Station Expansion (75% control) would require property acquisition through either negotiated acquisition or eminent domain acquisition of developed parcels. The LaGuardia Community College parking lot would have been big enough to site a storage tank that would provide more than 50% but less than 75% control of outfall BB-026. However, construction of a storage tank on that site would have had a significantly negative impact on the community college, as it is the only parking lot for the college identified on the college's website. The construction cost of a tank on the community college parking lot would have been on the order of five to six times the estimated construction cost of the Borden Avenue Pump Station Expansion alternative, and the storage tank would not have provided as high of a reduction in the CSO volume to Newtown Creek. For these reasons, expansion of the BAPS was the only control measure further considered throughout the LTCP for developing alternatives up to 75 percent level of control at Outfall BB-026. For 100 percent control, reduction of the discharges from BB-026 would be realized by conveying the flows to a CSO storage tunnel that would also capture CSO from the three large upstream Outfalls NC-077, NC-083 and NC-015 and this alternative would be substantially more expensive then the recommended alternative with no projected improvements in water quality.*

16. **Page 8-13, Section 8.1.i,** Sewer Separation states that High Level Sewer Separation for cemeteries could reduce CSOs by 12 percent area-wide. Given the magnitude of the potential reduction, this alternative should be retained for further analysis in the LTCP.

    **Response:** *The 12% reduction in CSO volume associated with separation of the cemeteries was computed as a percentage of the Baseline Conditions annual volume, and equated to an approximately 140 MG reduction in CSO volume to Newtown Creek. This predicted volume reduction would have occurred at outfalls NC-015, NC-077 and NC-083. None of the other CSOs to Newtown Creek were predicted to be affected by the separation of the cemeteries. Under the LTCP Recommended Plan, the proposed storage tunnel will capture 62.5% of the overflow volume from outfalls NC-015, NC-077 and NC-083. If the cemeteries were to be separated in addition to implementing the storage tunnel, the total additional volume reduction associated with the sewer separation from those outfalls would be approximately 81 MG, distributed as follows:*

    - *NC-015: 20 MG reduction*
    - *NC-077: 24 MG reduction*
    - *NC-083: 37 MG reduction*

    The 81 MG would represent an additional 7% reduction from the Baseline Conditions annual volume to Newtown Creek. However, these sewer separation projects are typically very expensive and have very long implementation periods. Such a project may not even be viable in this drainage area due to all the underground utilities and infrastructure. Due to the high cost and complexity of the sewer separation projects, it was considered to be not cost effective and it wasn't retained as a recommended alternative.

17. The LTCP should provide some additional detail on DEP's effort to coordinate the ongoing EPA Superfund and CSO programs. Describe where and how DEP believes there are program synergies and any potential conflicts that may impede LTCP implementation process.

**Response:** *As stated in the LTCP at ES-4, the data show that CSO discharges are not a significant source of hazardous substances in Newtown Creek. Nevertheless, the City expects the CSO control alternative selected in the LTCP would be sufficient to address any CSO discharge controls that EPA may require under Superfund. The FS, which is currently being undertaken will evaluate potential remedies for Newtown Creek based on both data collected during the RI and on additional sampling and studies. EPA expects to issue a Record of Decision (ROD) in 2022, which will set forth EPA's selected remedy for Newtown Creek.*

*DEP has been coordinating with DEC and EPA on integrating the LTCP and Superfund processes, and has attended several meetings on this subject both before and since the submittal of the LTCP. As both CWA and CERCLA approvals are required to ensure the LTCP project can proceed without interruption, DEP is continuing to develop a path forward with DEC and EPA. The next meeting with EPA on this topic is scheduled for late January 2018. Refer to Attachment A for a summary of the potential impacts of the Superfund project on the various elements of the LTCP Recommended Plan for Newtown Creek. DEP will provide updated information on this process, if such is available, with submittal of the LTCP technical memo.*

18. **Section 9.2.** The Department requests that the DEP examine ways to accelerate the schedule for the Borden Avenue PS upgrade for completion within 10 years. DEC appreciates the complexity of developing a schedule for the proposed CSO storage tunnel. DEC will work with DEP throughout the planning, design and construction phases to find opportunities to advance the project timetable.

**Response:** *The schedule for the Borden Avenue PS upgrade is based on DEP experience on similar projects. Based on this experience it is expected to take approximately 10 years to complete the upgrade. However, the DEP will attempt to expedite this project where feasible and will keep DEC updated on its progress.*

## ATTACHMENT A

## Potential Impacts of the future Superfund Record of Decision on the Newtown Creek Recommended Long Term Control Plan

### Introduction

The recommended plan in the Long Term Control Plan (Plan) for Newtown Creek includes the following elements:

- Expansion of the Borden Avenue Pumping Station (BAPS) from its current 3.9 MGD to a wet weather capacity of up to 26 MGD, with a new diversion structure and gravity pipe from Outfall BB-026, and a new force main to the Kent Avenue Gate Structure. This element will reduce the Baseline annual CSO volume at Outfall BB-026 by 75%.
- A 39 MG CSO storage tunnel that will capture 62.5 percent of the annual CSO volume from Outfalls NC-015, NC-083 and NC-077. The proposed tunnel includes drop shafts to divert CSO flows to the tunnel, near-surface connecting conduits and structures, and a dewatering pumping station. The final route to be determined during subsequent planning and design activities.
- Elimination of the in-stream mechanical aeration for Dutch Kills as contained in the 2012 CSO Order.

This memorandum identifies the potential impacts that the ROD, to be issued in 2023 (current projection), could have on the Plan. The potential impacts could be driven by the ROD's requirements for:

- The level of CSO control ;
- The depth and extend of dredging; and
- The extent of bulkhead restoration

### Borden Avenue Pumping Station Upgrade/Expansion

Table 1 summarizes the potential impacts of the future ROD to the critical design elements of the BAPS upgrade/expansion project.

**Table 1. Summary of Potential Impacts of ROD on Critical Design Factors for the BAPS Expansion**

| Project Element/Issue | Current Arrangement per LTCP Recommended Plan | Potential Impact of ROD |
|---|---|---|
| Diversion Structure at Outfall BB-026 | • A new diversion chamber with tide gate constructed on the existing BB-026 outfall downstream of the existing regulator. | • If a higher level of CSO control is required by the ROD, a larger diversion structure may be needed to accommodate a larger conveyance conduit to BAPS.<br>• If bulkhead restoration is conducted near outfall BB-026 as part of the ROD, it could affect construction of the diversion structure. |
| Conveyance Conduit from Diversion Structure to BAPS | • Approximately 2,500 LF of 3.5-ft. diameter gravity conveyance piping from the new diversion structure to the BAPS. | • If a higher level of CSO control is required by the ROD, a larger diameter conveyance conduit to BAPS may be required.<br>• If bulkhead restoration is conducted near outfall BB-026 as part of the ROD, it could affect the route of the conveyance conduit in the vicinity of the diversion structure. |
| BAPS | • Expansion of the BAPS to 26 MGD, within the footprint of the existing BAPS. | • If a higher level of CSO control is required by the ROD, the proposed capacity of BAPS would need to be increased.<br>• The increase in capacity may require expansion of BAPS beyond the existing footprint, and if so, could require acquisition of property to site the expansion of the pump station. |

**Table 1. Summary of Potential Impacts of ROD on Critical Design Factors for the BAPS Expansion**

| Project Element/Issue | Current Arrangement per LTCP Recommended Plan | Potential Impact of ROD |
|---|---|---|
| | | • If the required level of control were to approach 100 percent, the pumping capacity would be over 100 MGD, which would require a new stand-alone pumping station, significantly increase the volume of overflow to the East River, and potentially have had adverse impacts on the hydraulic grade line in the Kent Avenue system.<br>• If this higher level of control is required under Superfund, the pumping station expansion would likely be not feasible and an alternate technology would be needed and would cost an additional $90M and require a much longer construction schedule.<br>• If the ROD does not accept PS expansion as an acceptable action, any funding spent on the PS would be wasted; alternate controls would be much more expensive. The design is currently estimated to cost approximately $10 million. |
| Force Main to Kent Avenue Gate | • Approximately 4,350 LF of 3-ft. diameter force main from the BAPS to a location just upstream of the Kent Avenue Gate Structure. | • If a higher level of CSO control is required by the ROD, a larger diameter force main may be required<br>• If dredging is conducted as part of the ROD where the force main will cross the |

**Table 1. Summary of Potential Impacts of ROD on Critical Design Factors for the BAPS Expansion**

| Project Element/Issue | Current Arrangement per LTCP Recommended Plan | Potential Impact of ROD |
|---|---|---|
| | | creek, the depth of dredging could affect the depth of the force main<br><br>• If bulkhead restoration is conducted as part of the ROD where the force main will cross the creek, it could affect the force main design |
| Impact to East River CSOs | • The additional flow at the Newtown Creek WWTP will displace approximately 80 MGY of CSO into the East River | • If a larger pump station is required by the ROD, a further increase in CSO volume would be displaced to the East River, potentially affecting water quality and mitigation measures such as floatables control for affected outfalls. The NC WWTP doesn't have wet weather capacity for these higher flow rates to capture 100% of storm events during a typical year. |

Figure 1 presents the P80 implementation schedule for the BAPS expansion alternative, with the addition of a row at the bottom indicating the current schedule for issuance of the Superfund ROD (2023, although the timing within 2023 is not known). As shown in Figure 1, the ROD is expected to be issued, at least a full year after the initiation of planning for the BAPS expansion, assuming DEC approval of the Newtown Creek LTCP in June 2018. With this schedule, procurement of the planning/design consultant for the BAPS expansion as well as design work under that contract would occur before the ROD is issued. If the ROD requires a substantially different project from the currently-recommended BAPS expansion, then re-procurement of the planning/design consultant would be required, as well as re-design, because the basis for selecting the planning/design consultant would be different (a consultant selected for expertise in pump station expansion would not necessarily be the same consultant selected for expertise in, for example, CSO storage tank design) and because the scope of the planning/design contract would need to be substantially modified. Finally, such a material change in scope would likely require a new procurement under the City's procurement rules. A "substantially different project" would include increasing the capacity of the BAPS beyond the point where expansion of the pump station could still occur on the existing BAPS site, or providing a different approach to CSO control, such as storage. Elements of the ROD not related specifically to CSO control (such as the scope of bulkhead improvements and dredging) would not be expected to significantly affect planning-phase activities. These details would, however, be needed for comencement of design activities.

If the ROD substantially changes the project, the costs for procurement and up to 3 to 4 years of activity by the planning/design consultant would likely be wasted. Similarly, because the ROD will be issued after 2020, any planning or design activities for the BAPS initiated prior to issuance of the ROD would be at risk, as the final scope of the project would not be known with certainty until the ROD is issued. Changing course during the planning or design process could result in millions of dollars in wasted ratepayer resources and delay the project by several years.

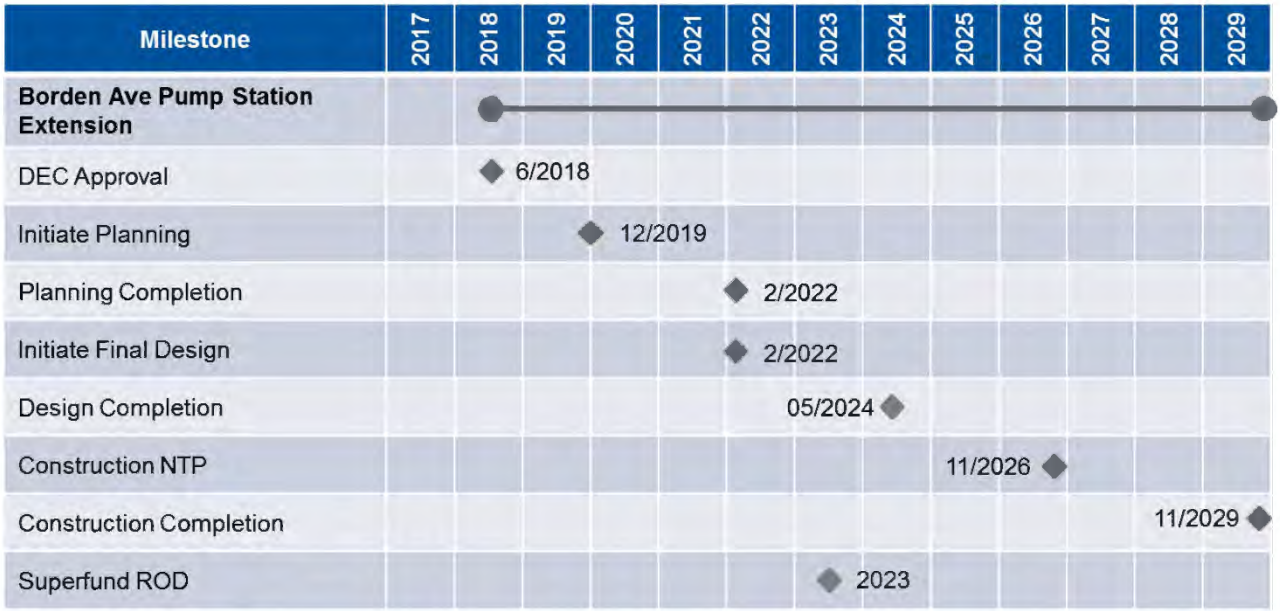



**Figure 1. Borden Avenue Pumping Station P80 Implementation Schedule**

**CSO storage tunnel for Outfalls NC-015, NC-083 and NC-077**

Table 2 summarizes the potential impacts of the ROD to the critical design elements of the CSO storage tunnel project.

**Table 2. Summary of Potential Impacts of ROD on Critical Design Factors for the Storage Tunnel for Outfalls NC-015, NC-083, and NC-077**

| Project Element/Issue | Current Arrangement per LTCP Recommended Plan | Potential Impact of ROD |
|---|---|---|
| 39 MG Storage Tunnel | • The length and diameter of the storage tunnel will depend on the location of the mining shaft, and on the final route of the tunnel. The tunnel volume is sized to provide 62.5 percent capture of the annual volume from outfalls NC-015, NC-083, and NC-077. | • If a higher level of CSO control is required by the ROD, the diameter of the tunnel would need to be increased for each of the mining shaft location/tunnel route options. An additional leg of the tunnel may be required if the ROD requires storage at outfall BB-026.<br>• Increasing the tunnel diameter could force the invert of the tunnel to be lower, resulting in the need for deeper mining and drop shafts, and a deeper TDPS.<br>• If the required level of control approaches 100 percent, the shorter tunnel route option, with the mining shaft at the DEP-owned site near outfall NC-077, may become infeasible due to the diameter of the tunnel required. Typical CSO rock tunnel diameters range from 12 ft to 40 ft. |
| Tunnel mining shaft/screenings and grit removal shaft | • A 35 to 46-foot diameter mining shaft would be required, depending on the mining shaft location/tunnel route option. Upon completion of the tunnel mining operations, the mining shaft would be converted to a screenings and grit removal shaft. | • If a higher level of CSO control is required by the ROD, the mining shaft diameter may need to be increased to accommodate the TBM needed for the larger tunnel diameter for each of the mining shaft location/tunnel route options thus limiting properties available to construct drop shafts. |

**Table 2. Summary of Potential Impacts of ROD on Critical Design Factors for the Storage Tunnel for Outfalls NC-015, NC-083, and NC-077**

| Project Element/Issue | Current Arrangement per LTCP Recommended Plan | Potential Impact of ROD |
|---|---|---|
| | | • Increasing the tunnel diameter could force the invert of the tunnel to be lower, resulting in the need for a deeper mining shaft. |
| Drop shafts for flows from outfalls NC-015, NC-083, and NC-077 | • Drop shafts will be required at outfalls NC-015 and NC-077. Depending on the tunnel route selected, a shaft may be required at outfall NC-083, or the flows from outfall NC-083 may be conveyed to the drop shaft at outfall NC-015. | • If a higher level of CSO control is required by the ROD, the size of the drop shafts may need to be increased to accommodate the higher flows captured.<br>• If bulkhead restoration is required by the ROD near outfall NC-015, it could affect the construction of the drop shaft at outfall NC-015.<br>• If the ROD requires that the tunnel capture CSO from outfalls other than NC-015, NC-083, and NC-077, then additional drop shafts could be required. |
| Diversion structures for outfalls NC-015, NC-083, and NC-077 | • New diversion chambers with tide gates will be constructed on the existing NC-015, NC-083 and NC-077 outfalls downstream of the existing regulators. | • If a higher level of CSO control is required by the ROD, larger diversion structures and conveyance conduits will be needed to accommodate larger conveyance conduits to the drop shafts.<br>• If bulkhead restoration is required by the ROD near outfall NC-015, it could affect the construction of the diversion structure at that location. |

**Table 2. Summary of Potential Impacts of ROD on Critical Design Factors for the Storage Tunnel for Outfalls NC-015, NC-083, and NC-077**

| Project Element/Issue | Current Arrangement per LTCP Recommended Plan | Potential Impact of ROD |
|---|---|---|
| | | • If the ROD requires that the tunnel capture CSO from outfalls other than NC-015, NC-083, and NC-077, then additional diversion structures would be required. |
| Near-surface connecting conduits from diversion structures to drop shafts | • Near surface conveyance piping will be required between the diversion structures and the tunnel drop shafts. The length of the conveyance piping will depend on the tunnel route selected. | • If a higher level of CSO control is required by the ROD, larger-diameter conveyance conduits may be needed to accommodate the higher flows captured.<br>• If the ROD requires that the tunnel capture CSO from outfalls other than NC-015, NC-083, and NC-077, then additional near-surface conveyance conduits would be required.<br>• If bulkhead restoration is required by the ROD near outfall NC-015, it could affect the construction of the conveyance conduit at that location. |
| 39 MGD tunnel dewatering pump station (TDPS) | • A 39 MGD TDPS would be constructed in a rock cavern adjacent to the tunnel mining shaft. The capacity of the TDPS would allow for dewatering of the tunnel within 24 hours. | • If a higher level of CSO control is required by the ROD, the capacity of the TDPS would need to be greater than 39 MGD in order to dewater the tunnel in 24 hours. |

**Table 2. Summary of Potential Impacts of ROD on Critical Design Factors for the Storage Tunnel for Outfalls NC-015, NC-083, and NC-077**

| Project Element/Issue | Current Arrangement per LTCP Recommended Plan | Potential Impact of ROD |
|---|---|---|
| | | • As described in Section 8 of the LTCP, based on considerations of loadings to the Newtown Creek WWTP, the maximum tunnel dewatering rate would be 40 MGD. Dewatering rates greater than 40 MGD would require an additional retention/treatment basin (RTB) for treatment of the additional dewatering flow. A site would need to be identified and acquired for this RTB |
| TDPS force main | • A 3.5-foot diameter TDPS force main would be required. The length and route of the force main would depend on the location of the mining shaft/TDPS (site near Newtown Creek WWTP or DEP-owned site near outfall NC-077). | • If a higher level of CSO control is required by the ROD, the size of the force main may need to be increased to accommodate the higher capacity of the TDPS.<br>• If the TDPS is located at the DEP-owned site near outfall NC-077, the force main may need to cross Newtown Creek to tie into the Morgan Avenue Interceptor. In this case, the depth of the force main may be affected if dredging is conducted in that reach of the creek as part of the ROD. |

**Table 2. Summary of Potential Impacts of ROD on Critical Design Factors for the Storage Tunnel for Outfalls NC-015, NC-083, and NC-077**

| Project Element/Issue | Current Arrangement per LTCP Recommended Plan | Potential Impact of ROD |
|---|---|---|
| NC WWTP / Satellite Treatment Facility | • During dry weather the CSO volume retained in the tunnel will be pumped back to the NC WWTP for full secondary treatment. The target pump back will be 39 MGD, in order to dewater the tunnel in less than 24 hours. | • A larger CSO capture will require much higher pump out flow rates sand the existing Newtown Creek WWTP is a high rate Step Feed treatment system and DEP is concerned that pumping additional flow beyond this 39 MGD may jeopardize plant performance. Therefore, if a larger CSO capture was required then the tunnel alternative would also require some type satellite treatment facility to treat the retained CSO flow before discharging it back into the receiving waters.<br>• A satellite treatment facility will require additional land acquisition, may impact the route of the tunnel, and require additional contractual resources. This will significantly impact the project implementation schedule. |

Figure 2 presents the P80 implementation schedule for the Newtown Creek CSO Storage Tunnel alternative, with the addition of a row at the bottom indicating the current schedule for issuance of the Superfund ROD (2023, although the timing within 2023 is not known). As shown in Figure 2, the current timing of the ROD falls well after significant resources have been expended on planning for the CSO Storage Tunnel, assuming DEC approval of the Newtown Creek LTCP in June 2018. With this schedule, procurement of the planning/design consultant for the CSO Storage Tunnel would have to be conducted prior to issuance of the ROD. If the ROD requires a substantially higher level of control than the currently-recommended 62.5-percent CSO Storage Tunnel, it is very likely that a storage tunnel would still be a major component of the project. However, the scope of the project would likely increase to include a treatment facility for the dewatering flow, a larger-diameter and/or longer tunnel, and potentially more near-surface conduits and drop shafts.

Initial planning activities related to the major shaft locations and tunnel routes based on the current recommended plan would still be useful if the size of the tunnel were to significantly increase. However, the planning scope would need to expand to cover the dewatering treatment facility siting/sizing/layout, as well as other new components of the project associated with the change in design capacity of the tunnel. This expansion of the planning scope will require an extension of the time needed for planning completion and site acquistion activities. It is also not clear that the planning/design team selected for a CSO storage tunnel/dewatering pump station project would be the same team that would be selected if a wet weather treatment facility were part of the project scope. Adding the wet weather treatment facility could potentially require an additional consultant and contractor procurement step.

Even if the ROD does not require a substantially different level of CSO control for the CSO Storage Tunnel (for example, if the diameter increases slightly, but not to the extent that would require a dewatering treatment facility), the potential of a 3 to 4 year gap between initiation of planning and issuance of the ROD in 2023 will likely affect the overall planning schedule. Elements of the ROD not related specifically to CSO control (such as the scope of bulkhead improvements and dredging) would not be expected to significantly affect planning-phase activities. These details would, however, be needed for comencement of design activities.

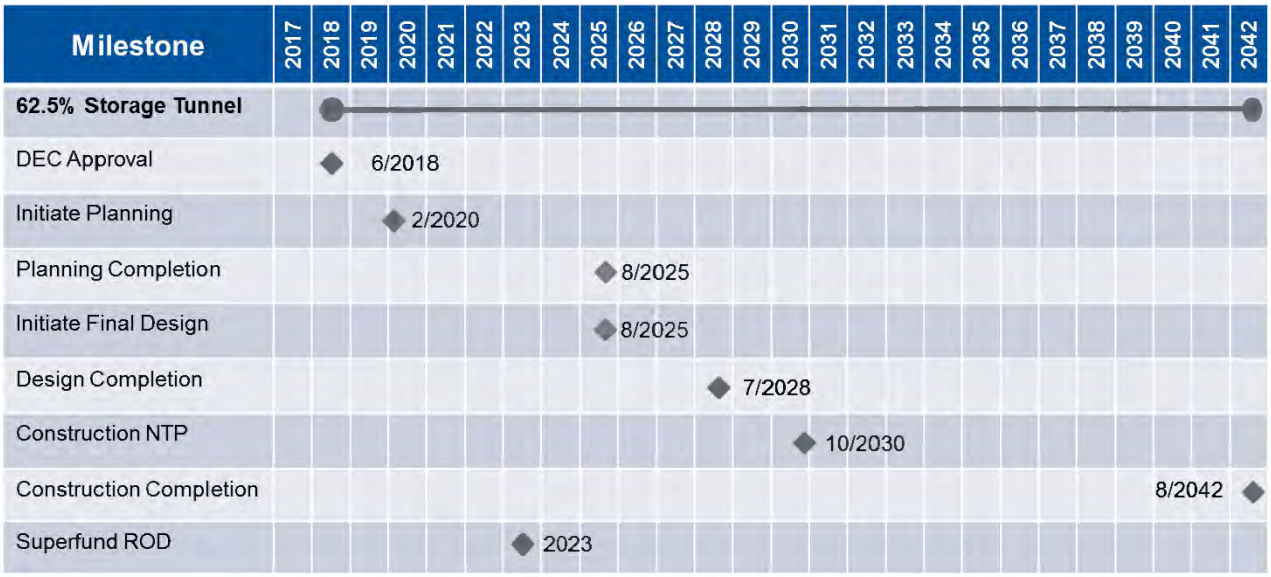



**Figure 2. Newtown Creek CSO Storage Tunnel P80 Implementation Schedule**

Because the ROD  is currently projected for 2023 a significant amount of planning activities for the CSO Storage Tunnel initiated prior to issuance of the ROD would likely be at risk, or at a minimum need to be updated, depending on how much the scope of the project changed as a result of the ROD.  The current cost estimate for design is $120M; signficant changes in the scope could result in millions of dollars in wasted ratepayer resources.