CITYWIDE/OPEN WATERS LTCP
PUBLIC COMMENT RESPONSE SUMMARY
JANUARY 27, 2020

PUBLIC COMMENTS RECEIVED

1. John Abbatangelo of GHD, October 3, 2019. Citywide/Open Waters public meeting follow up questions.
2. Van Cortlandt Park Alliance (VCPA), November 25th, 2019. Re: Comments on NYC DEP's Fall Update to the Citywide/Open Water Long Term Control Plan (Citywide LTCP)
3. NYC H2O, November 29, 2019. RE: Comments on Department of Environmental Protection's Retained Alternatives Summary for the Citywide/Open Waters CSO Long Term Control Plan
4. Bronx Council for Environmental Quality (BCEQ), December 2, 2019. Re: Comments on the 2019 Citywide LTCP
5. Newtown Creek Alliance (NCA), December 2, 2019. RE: Comments on Department of Environmental Protection's Retained Alternatives Summary for the Citywide/Open Waters CSO Long Term Control Plan
6. Guardians of Flushing Bay (GoFB), December 2, 2019. RE: Comments on Department of Environmental Protection's Retained Alternatives Summary for the Citywide/Open Waters CSO Long Term Control Plan
7. New York City Water Trail Association, December 2, 2019. Re: Comments on the Retained Alternatives Summary for the Citywide/Open Waters Combined Sewer Overflow LongTerm Control Plan
8. Stormwater Infrastructure Matters ("SWIM") Coalition, December 2, 2019. RE: Comments on Department of Environmental Protection's Retained Alternatives Summary for the Citywide/Open Waters CSO Long Term Control Plan
9. Bronx Community Board 8, December 2, 2019. LTCP Letter December 2019
10. Gregory O'Mullan of Queens College, December 2, 2019. Re: Open Water CSO Long Term Control Plan public comment
11. Linda Cohen (lindashoob@aol.com)
12. John Doyle (doylejc1@gmail.com)
13. Roy Fischman (ropaf@aol.com)
14. Janet McKee (McKee@sullcrom.com)
15. Coalition for the Daylighting of Tibbetts Brook
16. Stormwater Infrastructure Matters ("SWIM") Coalition, December 16, 2019. RE: Addendum to Comments on Department of Environmental Protection's Retained Alternatives Summary for the Citywide/Open Waters CSO Long Term Control Plan
17. NYC Department of Parks and Recreation (DPR), December 12, 2019. RE: Comments on Citywide/Open Water LTCP Retained Alternatives Summary submitted via email to ltcp@dep.ny.gov*
    **Due to ongoing coordination between DPR and DEP, responses to this letter will be included in the Final LTCP submittal in March 2020*

WATER QUALITY

Comment #1: The retained alternatives summary does not seek full compliance with the relevant water quality standards. (Letters: SWIM, GoFB, NYC H2O, John Doyle, NCA, Gregory O'Mullan)

1a: DEP considers compliance with water quality criteria necessary only 95% of the time.

Response #1a: The standard of 95% attainment or greater of applicable water quality criteria for determining compliance with existing water quality standards was established consistent with guidance from the New York State Department of Environmental Conservation (DEC) at the time of the first LTCP submittal (Alley Creek, 2013) and is a widely utilized and accepted statistical methodology for analyzing

large data sets. For consistency, this same standard was applied to all of the submitted and approved LTCPs and the same metric will also be applied for determining water quality attainment under the Citywide/Open Waters LTCP.

1b: It appears that DEP relies on meeting water quality standards only in model cells corresponding to the sampling stations within the open waters.

Response #1b: The receiving water model calculates the percent attainment within each model cell. The report tables present the model predicted water quality attainment at the cells corresponding to the monitoring stations. Since it is not feasible to present the attainment in every model cell in a tabular format, the graphical mosaics present a visual representation of water quality within each of the receiving water model cells, from shoreline to shoreline.

1c: DEP seems to assume that the water quality in embayments and shoreline areas is the same as in the main stem of the waters.

Response #1c: The open waters model is used to assess water quality throughout the open waters including embayments and shoreline areas. The model grids used in the open waters model were made finer to help better represent many of these embayments and near shore locations. The previous open waters model consisted of about 40,000 grid cells and the updated model includes about 260,000 grid cells. The modeled attainment results for the open waters will include mosaics that show attainment across all of the model cells against the applicable standard.

1d: DEP must assess locations with water-contact recreation as "sensitive areas" under the CSO policy.

Response #1d: The USEPA CSO Policy defines "sensitive areas" as "…designated Outstanding National Resource Waters, National Marine Sanctuaries, waters with threatened and endangered species and their habitat, waters with primary contact recreation, public drinking water intakes or their designated protection areas, and shellfish beds." The Citywide/Open Waters CSO LTCP included the consideration of "sensitive areas" as defined under the CSO Policy and also considers boat launches, marinas and other secondary contact recreational uses along the waterbodies as part of the evaluation conducted for this LTCP. The Retained Alternatives Summary includes figures that identify the location of waterfront access points.

Collection system optimization evaluations prioritized alternatives that reduced CSO discharges in the vicinity of CSO Policy defined sensitive areas and areas of secondary contact uses. The retained alternatives include cost-effective alternatives that provided CSO reductions without adversely impacting hydraulics of the collections system such as increasing the risk of basement backups or upstream flooding.

1e: DEP should explain how it used citizen data in the model calibration process

Response #1e: The DEP reviewed citizen-collected data from sampling locations along the Citywide/Open Waters waterbodies that were available to the public at the Riverkeeper website: http://www.riverkeeper.org/. The data was compared to data collected at the closest Harbor Survey Monitoring and/or LTCP Sampling Program sampling location and were found to be generally consistent in dry and wet weather and this data was used for model validation.

Comment #2: The retained alternatives summary is inappropriately focused only on evaluating compliance with water quality standards for bacteria and dissolved oxygen, ignoring other pollutants subject to impairment, as well as ignoring the legal requirement to provide the maximum pollution reduction benefits reasonably attainable for all pollutants. (Letters: SWIM, GoFB, NYC H2O, John Doyle, NCA)

2a: LTCP must analyze the effectiveness of selected CSO control alternatives on reducing loadings for the full range of CSO pollutants causing adverse impacts on receiving water quality, including floatables and nitrogen.

Response #2a: Similar to past LTCPs, Section 8 of the Citywide Open Waters CSO LTCP will provide a detailed summary of the evaluation of alternatives falling in the following categories: source controls, system optimization, CSO relocation, water quality/ecological enhancement, treatment, and storage. In particular, the DEP's system-wide, programmatic approach to floatables control will be presented in more detail in the LTCP. Regarding nitrogen, data developed by DEP has shown that the portion of the total nitrogen load to the Open Waters waterbodies attributable to CSOs is negligible, so reductions in the nitrogen loading from CSOs would not have a measurable impact on receiving water quality.

2b: The LTCP doesn't consider whether CSO control alternatives will provide the maximum pollution reduction benefits reasonably attainable with respect to all pollutants, including those for which the receiving waters are not currently deemed to be impaired.

Response #2b: The CSO control alternatives evaluated under the LTCP range from floatables control and system optimization to storage tanks/tunnels and treatment facilities. Source controls, system optimization and storage technologies improve collection system performance during wet weather conditions resulting in additional flow treated at the WRRFs. Treatment technologies address a wide range of pollutants in addition to providing pathogen control. Recommended alternatives are selected based upon cost-benefit considerations with priority on achieving water quality standards and supporting designated uses.

2c: The majority of street litter entering city waters is uncontrolled.

Response #2c: As demonstrated in the bar chart on page 24 of the Retained Alternatives Summary the vast majority (96%) of litter that lands on the streets is captured, and that only 4% reaches the waterbodies. The City's system-wide, programmatic approach to floatables control is focused on further reducing that 4%. Because of the diffuse nature of street litter, a programmatic approach aimed at reducing litter and increasing capture before litter enters the sewer system is more cost-effective than constructing end-of-pipe floatables control installations at multiple locations throughout the city. For more information on the City's floatables program please see the Annual CSO BMP Report or the NYC Stormwater Management Program Plan at nyc.gov/dep.

Comment #3: DEP's modeling methodologies may have produced skewed results and underrepresented the pollutant levels in receiving waters. (Letters: SWIM, GoFB, NYC H2O, John Doyle, NCA)

3a: Without explanation, DEP employed a one-year model for InfoWorks but a 10-year model for its East River Tributary Model

Response #3a: The DEP performs both 10-year InfoWorks and water quality model runs to assess bacterial attainment under baseline conditions and 100% CSO reduction as part of the gap analysis in Section 6 and also includes the same 10 year bacterial attainment assessment for the recommend plan as part of Section 8. The 1-year analysis is only done as part of the alternative evaluation and for the dissolved oxygen

attainment because the dissolved oxygen water modeling is much more complicated than bacterial water quality modeling and dissolved oxygen attainment is much less sensitive to intermittent wet weather discharges. The results of the 10-year model runs will be included in Sections 6 and 8 of the LTCP.

3b: DEP may have used depth averaging to skew its dissolved oxygen modeling.

Response #3b: Consistent with DEC approved methodology and previously submitted and approved LTCPs, DO model results are depth averaged. Attainment is calculated in the 10 equal vertical layers of the model, and then the attainment of all 10 layers is averaged.

3c: DEP failed to sample waters during key late summer and late fall months and likely none at night. The samples taken fail to fully depict the levels of dissolved oxygen in open waters.

Response #3c: Over the course of the sampling effort for the LTCP, DEP performed an extremely extensive sampling program that targeted wet weather and collected samples for four consecutive days after a significant storm event during both low tide and high tide conditions and collected a total of 1886 LTCP ambient water quality samples were collected. This data was also supplemented with harbor survey data and used to calibrate/validate existing water quality models. These models were then used to project attainment both diurnally and seasonally both bacteria and dissolved oxygen including these warmer late summer and early fall months when dissolved oxygen levels tend to be at their lowest.

3d: DEP mixed its seasonal LTCP sampling data with year-round Harbor Survey Monitoring data, resulting in over-representation for months when DEP performed LTCP sampling.

Response #3d: The model calibration process looked at specific sampling data collected on specific days and compared that data to the model predictions for those locations on those days. The bar charts of the Harbor Survey Monitoring, Sentinel Monitoring and LTCP Sampling Program data are presented to provide a general sense of water quality conditions and show that the data correlated to one another. The projected attainment with Water Quality Standards was based on a calibrated/validated water quality model and as previously mentioned both baseline and recommended plan attainment was done using a comprehensive 10-year period including some higher than average wet periods.

Comment #4: The LTCP's baseline factors rely on pollution controls that have not yet been implemented and inexplicably ignore climate change. (Letters: SWIM, GoFB, NYC H2O, John Doyle, NCA)

Response #4: The baseline conditions are based on projected 2040 flow and loads in conjunction with committed projects, many of which have been completed and others that are still underway with enforceable milestones under an existing consent order with the DEC.

4a. There is no regulatory mechanism to force DEP to complete Tibbetts Brook and the demand management projects, so there should be an enforceable milestone schedule.

Response #4a: Since the Tibbetts Brook Daylighting Project and demand management projects are included as GI projects under the Baseline Conditions for the LTCP; DEP is committed to completing them.

4b. Previously recommended LTCP projects may change during implementation. DEP and DEC must have a mechanism to reevaluate the Citywide LTCP if the previous LTCP projects change.

Response #4b: The recommended projects in approved LTCPs are incorporated into the CSO Consent Order and include post construction monitoring plans. Any material changes to the scope of any of the approved LTCP projects and the results of post construction monitoring are subject to review and approval by DEC.

4c. The LTCP does not account for future increased precipitation and should utilize the expected additional rainfall as determined by the New York City Panel on Climate Change.

Response #4c: The Citywide/Open Waters sampling program was conducted in 2016, 2017, and 2018. Harbor Survey Monitoring data is considered in the model calibration/validation. The typical rainfall year used for modeling is the 2008 JFK rainfall, which remains a good representation of current average rainfall conditions. DEP selected the 2008 JFK rainfall as the typical year based on a statistical review of 30 years of rainfall records from four different gages around the city. The average annual rainfall depth from 2010 to 2018 was less than the total annual rainfall from the 2008 JFK typical year rainfall. The LTCPs also evaluate performance over a 10-year rainfall period of 2002 to 2011, allowing for assessment over a range of rainfall conditions for both baseline conditions and for the recommended plan.

4d. DEP should model how sea level rise will impact the ability of wastewater treatment plants and CSO outfalls to continue functioning properly.

Response #4d: DEP coordinates closely with the Mayor's Offices of Resiliency to assess the impacts from climate change on the City's stormwater management systems. Modeling is currently underway to evaluate current and planned infrastructure response to a variety of conditions including increasing precipitation and sea level rise. The results of this study will be made publicly available in 2020 per Local Law 172 of 2018.

Comment #5: Dissolved oxygen issues (Letters: SWIM, Gregory O'Mullan)

5a: All waters should meet the minimum dissolved oxygen standard for Class I waters at 4.0 mg/L.

Response #5a: The waterbodies covered by the Citywide/Open Waters LTCP include Class SB, SD and I waters. The minimum DO criteria used for the evaluation of water quality standards attainment for each waterbody will be based upon the applicable water quality standards as determined by DEC based on the waterbody classification.

5b: Dissolved oxygen conditions are frequently unacceptable in the East River from July-September and the LTCP must address CSO sources contributing to these unacceptable summer conditions.

Response #5b: Based on the last 3 years of Harbor Survey Data, dissolved oxygen levels in the Open Waters (NY Bay, East River, Kills, Hudson River, & Harlem River) averaged about 7.2 mg/L with a percent attainment above 4 mg/L of about 90%. It should also be noted that this data has more data points during the recreation season because the Harbor Survey Monitoring samples are taken weekly during the recreation season and monthly during the non-recreation season.

5c: Water quality standards for dissolved oxygen create an unfortunate disconnect in level of protection across open waters.

Response #5c: DEP's sampling program revealed that overall water quality and dissolved oxygen levels throughout the open waters are good for LTCP baseline conditions and the recommended plan based on

existing water quality standards. Water quality standards are established by DEC based on the waterbody classification.

Comment #6: New York City tributaries serve as sewer pipes carrying pollution to Open Waters and must be factored into modeling. (Letters: SWIM, GoFB)

Response #6: The open waters model factors in all of the flow and loads that are discharged directly into the open waters or are introduced via the tributaries. DEP has spent and committed nearly $10B in funding for CSO reduction projects in the tributaries and these committed LTCP tributary projects are also included in the open waters modeling assessment under baseline conditions.

Comment #7: The LTCP should show modeling results for *Enterococci* for all waterbodies. (Letters: SWIM)

Response #7: DEC recently enacted changes to New York State water quality criteria in response to the 2012 USEPA Recreational Water Quality Criteria. As these changes only apply to Class SB coastal primary recreational waterbodies, Enterococci has been evaluated as the applicable water quality standard for only the Class SB coastal primary recreational portions of New York Bay.

Comment #8: Prior LTCPs that fall short of achieving water quality standards in linked waterways should be re-considered. (Letters: Gregory O'Mullan)

Response #8: The approved LTCPs evaluated the impacts of CSO control options on achieving applicable water quality standards of the receiving waterbody and DEC has incorporated approved LTCP projects into the CSO Order The Citywide/Open Waters CSO LTCP evaluation of alternatives considers impacts on tributary waterbodies addressed under prior LTCPs. Upon implementation of the recommended projects in the approved LTCPs, DEP will perform post-construction monitoring (PCM) to evaluate performance of the recommended plans in achieving the projected CSO control.

GREEN INFRASTRUCTURE

Comment #9: DEP should provide in the LTCP a detailed alternatives analysis of how green infrastructure can be deployed specifically in the Citywide drainage areas, on public and private property. (Letters: SWIM)

Response #9: The green infrastructure section of the Citywide/Open Waters LTCP will include details of the green infrastructure goals in the Citywide/Open Waters drainage areas. Green infrastructure implementation is underway in the public right-of-way and on public and private properties within the Citywide/Open Waters drainage areas, with an up-to-date map available on DEP's website: www.nyc.gov/dep/greeninfrastructure. In addition, DEP plans to develop a unified rule that will result in additional CSO reduction benefits in the city-wide drainage areas.

Comment #10: DEP has not explained how the Green Infrastructure Performance Metrics approved by DEC have factored into the modeling of baseline conditions. (Letters: SWIM)

Response #10: As outlined in the NYC Green Infrastructure 2018 Annual Report, DEP is ultimately working toward a reduction of 1.67 billion gallons a year (BGY) by 2030 through green infrastructure implementation across the city. Through the Green Infrastructure Performance Metrics report, DEP quantified the anticipated annual reduction in CSO volume due to green infrastructure implemented to date and planned

green infrastructure. The baseline conditions models were updated to include the implemented and planned green infrastructure practices that will result in the anticipated annual reduction at each relevant outfall so that the baseline conditions models accurately reflect the current and projected benefits of green infrastructure.

Comment #11: Have you considered combining two important GI best practices; (1) mulching is one of the strongest supports for infiltration/porosity development; and (2) a full-time professional workforce program to ensure GI facilities work at peak performance standards? (Letters: BCEQ)

Response #11: DEP will be releasing a Request for Information (RFI) for strategies for green infrastructure maintenance and workforce development in early 2020. The goal of this RFI is to learn from interested parties how DEP can structure a maintenance program that would both leverage the expertise and skillsets of potential external maintenance partners and maximize the efficiency of DEP's current in-house green infrastructure maintenance regime. DEP is looking forward to working with BCEQ to identify respondents to the RFI.

Comment #12: The open water LTCP should use additional large-scale GI projects to meet the required elimination of CSO discharge. (Letters: BCEQ, Bronx Community Board 8, Gregory O'Mullan)

Response #12: Large scale GI projects are continuously being evaluated for feasibility on public and private properties to meet the 2030 green infrastructure commitments. DEP also formed an in-house design team who strategically targets building Green Infrastructure in large medians that are owned by Department of Transportation or Department of Parks. A list of planned projects for all watersheds is included annually in the NYC Green Infrastructure Annual Report.

RETAINED ALTERNATIVES SUMMARY

Comment #13: The retained alternatives summary misrepresents the water quality in open waters. (Letters: SWIM)

13a: How can DEP claim that the Harlem River and other waterbodies with intermittent poor conditions will be in compliance with water quality standards under baseline conditions?

Response #13a: The applicable water quality standards for pathogens are based upon either a monthly geometric mean (for fecal coliform), or a running 30-day geometric mean (for Enterococcus, where applicable) and account for fluctuations in bacteria concentrations during dry and wet weather conditions that occur over the specified periods. The chronic standard for dissolved oxygen is based upon a daily average which accounts for daily and seasonal fluctuations in DO concentrations resulting from respiration of aquatic vegetation, temperature, tidal fluctuations and other factors. The acute standard for DO, where applicable, is based upon a formula that allows for DO concentrations to fall below the standard for a limited number of days. As a result, each standard allows for intermittent periods when water quality conditions may not fall within the metrics established for pathogens or dissolved oxygen. Both open waters modeling outputs and data collected during the sampling period verify the water quality attainment.

13b: DEP's sampling data show multiple violations of applicable dissolved oxygen criteria in multiple waterbodies. The Retained Alternatives Summary must be revised to indicate what percentage of time the waters will be out of compliance due to low dissolved oxygen.

Response #13b: As addressed in the response to Comment 13a, the applicable water quality criteria account for short-term variations in water quality conditions where the WQS metric may not be achieved. Since the water quality criteria are based upon multiple samples, compliance with water quality cannot be

determined based upon a single sample. The open waters model (and all past water quality models utilized in prior LTCPs) have been calibrated using the LTCP, Harbor Survey Monitoring and Sentinel Sampling Program data and were formulated to calculate pollutant concentrations in the waterbodies and project attainment based upon the applicable water quality standards for each waterbody. The models were developed consistent with industry standards and have undergone a through peer review process. The Regional LTCP water quality model provides a robust tool for assessing water quality attainment within the Open Waters for Baseline Conditions and a wide range of CSO control.

13c: There is a significant amount of water quality data missing from the Retained Alternatives Summary and Kickoff presentations, for example projected percent attainment for the Harlem River pathogens, and projected percent attainment for dissolved oxygen in all waterbodies.

Response #13c: The table entitled "Summary of WQ Standards Compliance" in Section 7 of the Retained Alternatives Summary Document presents projected water quality attainment for Baseline Conditions and for 100% CSO Control for each of the Open Waters, for applicable bacteria and DO criteria. The Harlem River is projected to comply with the applicable pathogen and DO standards under Baseline Conditions. The LTCP will have more specific information summarizing the water quality sampling data in each waterbody, as well as the levels of water quality standards attainment.

Comment #14: Tables on pages 21 and 38 of the Retained Alternatives Summary incorrectly show enterococcus criteria as "not applicable" to the Class SB portion of the Hudson River. Recent changes to state water quality standards make those criteria applicable to Class SB waters. (Letters: SWIM)

Response #14: In accordance with DEC regulations enacted in 2019, the Enterococci criteria apply to Class SA and SB coastal primary contact recreational waters. The Hudson River north of the Harlem River is not a coastal Class SB water.

Comment #15: On page 44 of the Retained Alternatives Summary, DEP "notes" below the second table state that some of the East River alternatives under consideration would increase CSO discharges to the Bronx River and Westchester Creek, and that some would reduce CSO discharges to Flushing Creek. DEP must explain these statements, including an explanation of why it would consider alternatives that results in increased CSO discharges to other waterbodies. (Letters: SWIM, GoFB)

Response #15: The CSO reductions presented throughout the Retained Alternative Summary are net reductions in the total model predicted CSO volume for the 2008 typical year. As collection systems are linear in nature, modifications at one regulator often impact the performance at other regulators throughout the system due to the hydraulic balancing that takes place during wet weather periods when the interceptor is flowing full. Upon directing more wet weather flow into the interceptor at one regulator, the capacity available to receive flow from other regulators will be reduced. This can result in additional overflow at other regulators despite the reduction in CSO at the modified regulator. Due to the complex nature of the collection system, a proprietary software was used to evaluate optimization of the collection system. A more detailed engineering analysis was then performed for the retained alternatives to verify performance for the typical year, verify constructability and assess other potential concerns.

It should be noted that although these were retained alternatives, they are not being considered as recommended projects because of concerns with the diversion of a portion of the CSO discharges to a tributary waterbody. DEP has identified additional alternatives that result in an overall net CSO reduction without diverting additional flow into the tributaries.

Comment #16: DEP states that, under the modeled baseline conditions prior to any further reductions that might result from the Citywide LTCP, "CSO discharge to open waters is about 11 [billion gallons per year]." In contrast, in the 2011 CSO Order White Paper, DEP reported that, absent any further CSO reductions from projects that might be included in LTCPs, the modeled baseline condition is 13.5 billion gallons per year of CSO to open waters. What new modeling methods or assumptions have resulted in this new, lower total? (Letters: SWIM)

Response #16: The InfoWorks models used to cover the various waterbodies included in the Citywide/Open Waters LTCP underwent recalibration in 2012. This recalibration included an updated assessment of impervious areas, as well as extensive flow monitoring. This recalibration work is described in the *InfoWorks Citywide Recalibration Report, Updates to and Recalibration of the October 2007 Landside Models*, New York City, Department of Environmental Protection, June 2012. In addition, the current LTCP program is using a different "Typical Year" of rainfall than was used prior to 2012. As part of the current LTCP program, each of these InfoWorks models were updated based upon field investigations to verify configurations of sewer and regulator structures and to include satellite impervious cover data. The models were also recalibrated/validated using recently collected comprehensive flow metering. In addition to the recalibration of the InfoWorks Models; the LTCP baseline conditions include baseline green ($1.6B) and grey ($2.7B) projects along with recently completed storm sewer buildout projects that has resulted in an overall decrease in CSO volumes. Specific updates to the various models are described in Section 2.0 of the previously submitted LTCPs and will be summarized in Section 2.0 of the Citywide/Open Waters LTCP.

Comment #17: The Retained Alternatives Summary does not analyze the feasibility and benefit of capturing and treating 4.67 billion gallons of yearly CSO discharges. (Letters: GoFB)

Response #17: The Retained Alternatives Summary includes tunnel storage alternatives to provide modeled 50, 75, and 100 percent levels of CSO control for the Open Waters waterbodies. The total CSO volume captured by these alternatives ranges from approximately 5 BG for 50% CSO control, up to approximately 11 BG for 100% CSO control. The impact to water quality of these CSO control scenarios was also analyzed.

Comment #18: The methodology used to assess alternatives is not appropriately defined. (Letters: SWIM, NYC H2O, John Doyle, NCA)

18a: DEP should not use binary approach to optimize water quality (i.e. whether the alternative will wholly cure the water quality impairment or not) and include useability criteria similar to previous LTCPs.

Response #18a: The vast majority of the open waters are in compliance with existing water quality standards and the existing use category. DEP continues to evaluate additional controls to further reduce CSO volume as part of the LTCP and in consultation with DEC.

18b: DEP should provide more detail in the full LTCP regarding the screening and elimination of alternatives.

Response #18b: Similar to prior LTCPs, Section 8 will detail the screening, evaluation and selection of the alternatives that make up the recommended plan.

Comment #19: The proposed LTCP fails to address specific waterways and launch locations in the harbor where sewage and stormwater pollution make recreational boating and swimming problematic. Instead, it lumps them together as a part of one all-encompassing waterbody (the 'East River and Open Waters') whose overall, 'averaged' water quality is proclaimed to be acceptable. Locations should be individually assessed and site-specific plans developed to eliminate or reduce CSO pollution. The assessment should include a thorough, year-round regimen of pathogens testing at near-shore sampling sites, not the handful of tests that have been proffered. (Letters: NYC Water Trail Association)

Response #19: As described in the response to Comment No. 1c above, the open waters model is used to assess water quality throughout the open waters. While the water quality monitoring stations used for validation and calibration of the model are located at various points throughout the open waters, the model computational grid spans from the shoreline to shoreline, including embayments. Under this LTCP, the density of the grid cells was increased near the CSO outfalls further enhancing the model resolution along the shoreline. The open waters model calculates water quality attainment for each grid cell. As described in Comment No. 3d above, the water quality model calibration process looked at specific sampling data collected on specific days and compared that data to the model predictions for those locations on those days. The bar charts of the Harbor Survey Monitoring, Sentinel Monitoring and LTCP Sampling Program data are presented to provide a general sense of water quality conditions, but assessments of attainment with Water Quality Standards are based on the calibrated water quality model.

Comment #20: The proposed LTCP fails to outline a strategy for better and more detailed CSO monitoring and notification, so that all interested residents can be promptly informed of the precise locations, times and amounts of sewage and stormwater releases. The LTCP should mandate installation of real time flow monitors at all its major outfalls, and create a robust modeling program to predict overflow times and amounts at all other outfalls.(Letters: NYC Water Trail Association)

Response #20: New York City maintains multiple websites that are good resources for members of the public who may have concerns about wet weather impacts on water quality. DEP's waterbody advisory system is based on a statistical correlation between historical rainfall volumes and corresponding water quality model outputs. The derived correlations are then used to issue water quality advisories based on real-time rainfall data.

The LTCP recommended alternatives will be selected based upon cost-benefit considerations with priority on achieving water quality standards and supporting designated uses.

Beach advisories may be accessed using the following web-link:
https://www1.nyc.gov/site/doh/health/health-topics/beach-homepage.page
Waterbody advisories for waterways other than beaches can be accessed using the following web-link: https://www1.nyc.gov/site/dep/water/waterbody-advisories.page
To sign-up for waterbody alerts use the following web-mink: https://a858-nycnotify.nyc.gov/notifynyc

Comment #21: This Citywide/Open waters LTCP is supposed to include Lower New York Bay. However, page 16 of the LTCP retained alternatives summary states "The Oakwood Beach WRRF serves a separate sanitary system with no CSOs and is therefore not addressed in this LTCP." (https://www1.nyc.gov/assets/dep/downloads/pdf/water/nyc-waterways/citywide-east-river-open-water/citywide-open-waters-retained-alternatives-summary.pdf) Plans for this area should be part of this LTCP. (Letters: Linda Cohen)

Response #21: The LTCP has been developed consistent with USEPAs CSO Control Policy. The assessment of water quality impacts related to CSOs includes all of New York Bay and the waters around Staten Island. The intent of the statement regarding the Oakwood Beach WRRF is that since the WRRF serves a separate sanitary system, with no CSO outfalls, there are no CSO control alternatives that can be developed for that system.

PUBLIC PARTICIPATION

Comment #22: DEP must publish a final draft of the Citywide Long Term Control Plan prior to submission to DEC to achieve meaningful public participation. (Letters: SWIM, GoFB, NYC H2O, John Doyle, NCA)

Response #22: Public participation for the Long Term Control Plans has evolved since the first kick-off meeting in 2012. Over the years DEP has worked to incorporate public feedback as it relates to venue locations, presentation content, educational materials, and meeting advertising. DEP has also worked to incorporate public feedback as it relates to public comments on the Recommended Plan. For the LTCPs submitted between 2013 and 2017, DEP conducted two public meetings per LTCP before the final LTCP was submitted to DEC: a kick-off meeting and an alternatives meeting. A third final meeting on the recommended plan would not occur until after it had already been submitted to DEC. The public submitted multiple comments asking for the opportunity to review and provide feedback on the final recommendations before the LTCP was submitted to DEC. In response, DEP worked with DEC to develop a compromise for the Jamaica Bay and Citywide & East River/Open Waters LTCP that would give the public an opportunity to review the substance of the recommendation (proposed projects, costs, benefits) without further delaying LTCP submittal deadlines. In addition, DEP held additional public meetings and offered additional public comment response opportunities.

Comment #23: Public communication and incorporation of prior feedback should be improved. (Letters: Gregory O'Mullan)

Response #23: As stated in Comment #22, DEP has worked to improve the public participation process throughout the evolution of the Long Term Control Plans. For the Citywide & East River/Open Waters LTCP, rather than holding only three public meetings and providing no opportunity for the public to review the final recommendation, DEP sought approval from DEC to expand the process. Under the Citywide & East River/Open Waters LTCP, DEP held three kick-off meetings, three alternatives meetings, and one recommended plan meeting. Public comments received throughout the process are addressed in the Response to Comments Summary and available at nyc.gov/dep/ltcp.

WATERBODY/LOCATION SPECIFIC

Comment #24: The Citywide LTCP should consider the benefit of a new wastewater treatment plant on Rikers Island. (Letters: SWIM, GoFB)

Response #24: The City Council's Environmental Protection Committee has introduced two pieces of legislation that relate to the concept of the DEP obtaining Rikers Island to develop a new Wastewater Resource Recovery Facility (WRRF). As of January 2020, DEP and the City of New York are currently reviewing that legislation and are supportive of the goals of conducting a feasibility study. It is too early to consider potential benefits of such an effort in the Citywide/Open Waters LTCP.

Comment #25: According to the NYC consent order with New York State, the city is required to reduce combined sewer overflows. If this consent decree is being followed by the city, why hasn't there been remediation of the sewage that floats onto Great Kills beach? (Letters: Roy Fischman)

Response #25: No CSOs are located directly adjacent to Great Kills Beach, so the specific source of materials that may be deposited on Great Kills Beach is not known. However, the Retained Alternatives Summary Document described optimization alternatives that would reduce CSOs from the Port Richmond and Red Hook WRRF systems that discharge to New York Bay. An additional alternative has also been identified that would reduce CSO from the Owls Head WRRF system to New York Bay. This alternative will be described in the LTCP Summary Document to be released in January 2020.

Comment #26: Will the Port Richmond Treatment Plant be upgraded or replaced? (Letters: Roy Fischman, Linda Cohen)

Response #26: In 2015, DEP completed $30 million in upgrades to reduce greenhouse gas emissions by more than 28,000 metric tons through the installation of rooftop solar panels, new boilers and an exhaust capture system. DEP has a comprehensive preliminary and corrective maintenance program. At this time, DEP has not identified a need to replace or upgrade the treatment capacity of the Port Richmond WRRF.

Comment #27: Tibbetts Brook (Letters: VCPA, BCEQ John Abbatangelo)

27a: For the Daylighting of Tibbets Brook, is it possible to include a Living Shoreline Design, such as the one created by Dr. Paul Mankiewicz of Bronx Council for Environmental Quality? The Living Shoreline would help reduce the amount of sedimentation and pollution entering Van Cortlandt Lake as a result of runoff from the Major Deegan Expressway.

Response #27a: As currently planned, the Tibbetts Brook daylighting project will utilize a portion of the railroad right-of-way at that location. Restrictions on the use of the railroad right of way may limit the design options for this project.

27b: The Tibbetts Brook open channel should be designed with as many natural features as feasible in accordance with engineering analysis and agreements with CSX. Banks in the figure should be colored green or brown to avoid looking like concrete. The figure should show a meandering channel with a note indicating that it is concept only and that channel configuration would be developed during the design process. Channel complexity could provide opportunity for nutrient removal, improve aesthetics, and generate aquatic habitat.

Response #27b: As discussed above, restrictions on the use of railroad right-of-way may limit the design options for this project. DEP believes the current planned design is the best and most cost-effective option given the restrictions on the use of railroad rights of way.

27c: Retained Alternatives Summary Page 31-32: Daylighting of Tibbetts Brook is not included in the retained alternatives?

Response #27c: Tibbetts Brook is included in the Baseline Conditions as outlined on Pages 19 and 20 of Section 6 Baseline Conditions for LTCP Models.

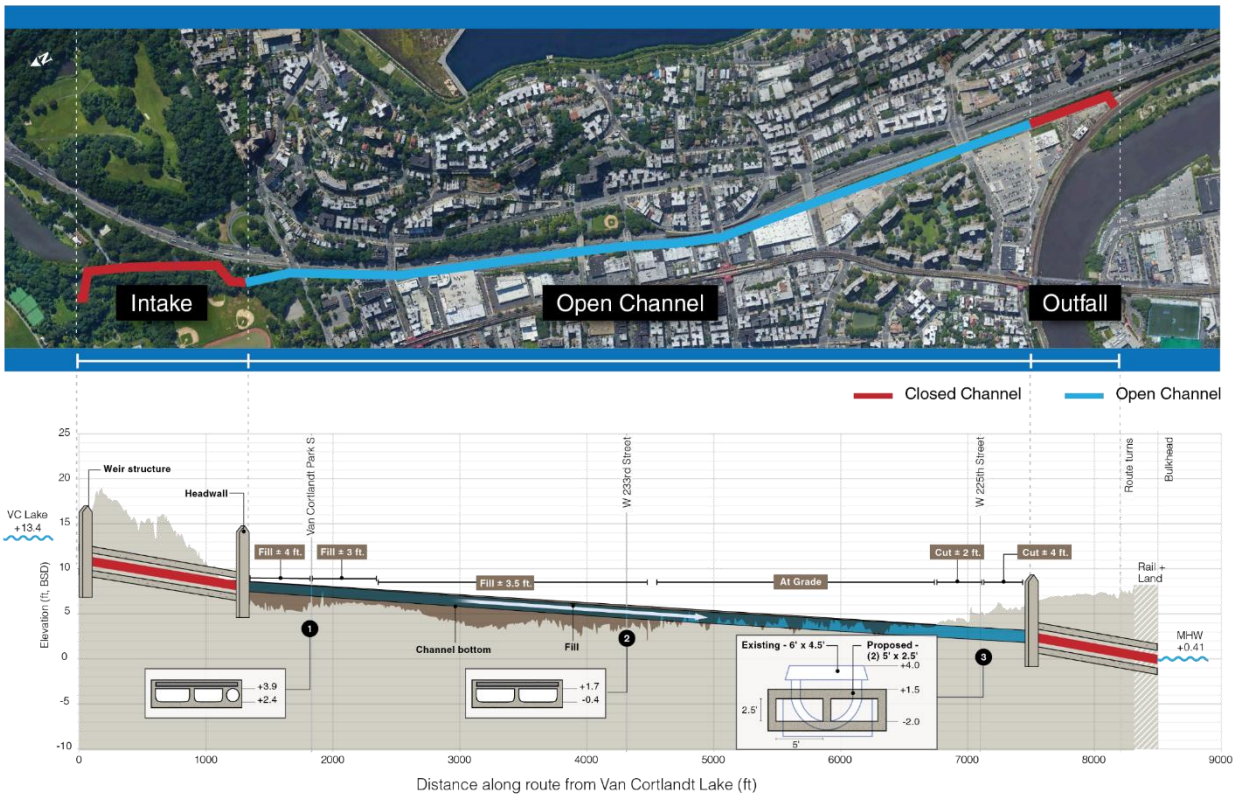
27d: To maximize the effectiveness of Option 2, the Environment and Sanitation Committee recommends that DEP look closely at all available options at 230th Street to remove Tibbetts Brook's water from the sewer system and reduce the burden on W056, a Tier 1 outfall site in the

City of New York. These options include routing water from Van Cortlandt Lake and Tibbetts Brook into the Harlem River and innovative water reuse operations, such as recycling, irrigation, and ground source heat generation at the site, which is contiguous to NYCHA's Marble Hill Houses and other high density residential buildings.

Response #27d: DEP is evaluating each of these options for reducing stormwater contributions to the combined sewer system and CSOs at CSO WI-056. Currently, daylighting of Tibbetts Brook, Central Park Demand Management for the Harlem Meer and Prospect Park Lake Demand Management have been incorporated into the Baseline Conditions for the Citywide/Open Water LTCP.

27e: Open channel for Tibbets Brook: What are the material (clay, brick, cement, etc.) and age (date constructed) for each of the sewer pipe crossings beneath the CSX land? What is their diameter or cross-sectional dimensions? What is their invert depth below grade? Does the public have access to as-built drawings for these? What type of sewers are they? I.e. gravity, force main, siphon, etc. Will the proposed open channel for Tibbetts Brook be constructed from concrete (i.e. sealed) invert or will engineered soil be used (i.e. channel can interact with groundwater)?

Response #27e: As discussed above, restrictions on the use of railroad rights-of-way will inform the design options for this project. As shown in the profile below, each crossing consists of multiple rectangular and circular concrete pipe barrels. The sewers flow by gravity. Limited field surveys were performed under the conceptual design to verify constructability. The survey data indicates that fill will need to be placed at the Crossings 1 and 2, while the channel can pass over Crossing 3 at grade. Additional survey work will be performed under the design phase of the project.



27f: In the tie-in diagram on slide 19 of the presentation, is the connection with the "new sewer" cast above or below the existing pipe connecting to the interceptor? (Letters: John Abbatangelo)

Response #27f: The "new sewer" connection will pass over the existing branch interceptor.

Comment #27g: At the meeting someone in the audience did mention that channeling the sewer into the existing WI-056 will not actually reduce CSO's and will make detecting CSO's at that location more challenging. It should be noted that this will create a reduction of 5-6 MGD of lake water entering Wards Island WWTP (which did not need to be treated at all, initially).

Response #27g: Re-connecting the open channel discharge back into the existing outfall is being considered to avoid an additional railroad crossing. This connection will not impact the projected CSO reductions but will result in stormwater being re-combined with the CSO discharges.

Comment #28: Commenter has experienced pollution at South Beach, Staten Island. Please do whatever is necessary to protect our waters from sewage pollution. (Letters: J. McKee)

Response #28: See response to Comment No. 25 above.

Comment #29: Supports green infrastructure as preferred alternative in Bronx. DEP should take advantage of local expertise and national benchmarks and invest in practices that will ensure effectiveness of its green infrastructure program.

Response #29: DEP will continue to seek to maximize effective and feasible GI implementation throughout the Citywide/Open Waters drainage areas. The Green Infrastructure Program toolbox has evolved over the years to incorporate new green infrastructure typologies, such as infiltration basins, rain gardens with different inlet configurations, and porous pavements, to overcome siting challenges and increase performance. Much of this evolution has come from lessons learned in the field within the NYC communities DEP has been working in, feedback from research and development, and from ongoing conversations with experts in peer green infrastructure programs, such as those being implemented in Philadelphia, D.C., San Francisco and other cities. DEP also participates annually in national conversations on green infrastructure best practices with industry and other municipal experts and uses that information to inform local practices.

REQUESTS FOR LINKS/RESOURCES

Comment #30: Can you please document the number of bypasses reported by the Oakwood treatment plant in 2017 and 2018? (The link would be appreciated as well) (Letters: Linda Cohen)

Response #30: There were no bypasses events from the Oakwood Beach Wastewater Resource Recovery Facility in 2017 and 2018. Please note that there were four sewer bypass events in the Oakwood Beach drainage area in 2017 due to blockages in the sanitary sewer. Each bypass was reported to DEC through the NY-Alert notification system within two hours of confirmation of the discharge. Additional details are provided in the 2017 Combined Sewer Overflows Best Management Practices Annual Report.

Comment #31: Please provide the link for the Floatable Data Sheet annual composite reports (Volunteer Beach Floatable Program). The link that I received from a comment on the Stormwater Management Plan did not work. The message I received was "Page not Available" when I attempted

to reach http://www.nyc.gov/html/dep/html/harborwater/trash-freewaters-city.shtml." (Letters: Linda Cohen)

Response #31: Data received from volunteers through the NYC Beach Floatables Survey Program are included in the Floatables Monitoring Program Progress Report. The most recent Floatables Monitoring Program Progress Reports can be downloaded at https://www1.nyc.gov/site/dep/water/how-nyc-is-keeping-our-waterways-trash-free.page.