



SWIM Coalition

Stormwater Infrastructure Matters

December 2, 2019

Vincent Sapienza, P.E
Commissioner
NYC Department of Environmental Protection
59-17 Junction Boulevard
Flushing, NY 11373

Sent via email to ltcp@dep.nyc.gov

RE: Comments on Department of Environmental Protection's Retained Alternatives Summary for the Citywide/Open Waters CSO Long Term Control Plan

Dear Commissioner Sapienza:

We, the Steering Committee for Stormwater Infrastructure Matters ("SWIM") Coalition, write on behalf of our member organizations¹ to address the New York City Department of Environmental Protection's ("DEP") Retained Alternatives Summary for the Citywide & East River/Open Waters Combined Sewer Overflow ("CSO") Long Term Control Plan ("LTCP"),² published October 15, 2019.

SWIM Coalition represents over 70 organizations dedicated to ensuring swimmable and fishable waters around New York City through natural, sustainable stormwater management practices. Our members are a diverse group of community-based, citywide, regional and national organizations, water recreation user groups, institutions of higher education, and businesses.

New York City's local waterways are a true asset for our members and their communities across the boroughs. While many pioneering New Yorkers have already taken to the water to kayak, fish or otherwise enjoy, we are not yet able to realize the full potential of these important natural resources due to CSO discharges, the largest ongoing source of pollution in New York City's waterways.

The City has made important progress toward achieving clean water goals. Large-scale infrastructure solutions, like the Newtown Creek Wastewater Treatment Plant and the innovative installation of hundreds

¹ A full list of Stormwater Infrastructure Matters Coalition members can be found at <https://www.swimmablenyc.org/member-organizations>.

² N.Y. City Dep't of Env'tl. Protection, Combined Sewer Overflow Long Term Control Plan for Citywide/Open Waters Retained Alternatives Summary (2019) [hereinafter Retained Alternatives Summary], *available at* <https://www1.nyc.gov/assets/dep/downloads/pdf/water/nyc-waterways/citywide-east-river-open-water/citywide-open-waters-retained-alternatives-summary.pdf>.

of curbside rain gardens, are noteworthy examples. Yet, our shared city waters have a long way to go to meet the legal requirements of the Clean Water Act.

The plans for the waterbodies in the Citywide LTCP need to be fully understood by the people who will be living alongside these discharges for at least another generation. Based on the materials presented at the October 2019 Public Meeting and in the Summary of Retained Alternatives document, we have ongoing concerns with respect to DEP's methodology and its failure to address areas in the city where sewage and stormwater pollution will continue to violate state water quality standards for pathogens, dissolved oxygen, nitrogen, floatables, and other pollutants. Our concerns are outlined as follows and discussed in detail below:

- The Retained Alternatives Summary seeks only 95% compliance with the relevant water quality standards.
- 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.
- DEP's modeling methodologies may have produced skewed results and underrepresented the pollutant levels in receiving waters.
- The LTCP's baseline factors rely on pollution controls that have not yet been implemented and inexplicably ignore climate change.
- The methodology used to assess alternatives is not appropriately defined.
- The Retained Alternatives Summary misrepresents the water quality in open waters.
- All waters should meet the minimum dissolved oxygen standard for Class I waters at 4.0 mg/L.
- New York City tributaries serve as sewer pipes carrying pollution to open waters and must be factored into modeling.
- DEP should consider the potential sewage pollution reduction benefits of constructing a state of the art wastewater treatment plant on Rikers Island.
- DEP must publish a final draft of the Citywide Long Term Control Plan prior to submission to DEC to achieve meaningful public participation.

I. The Retained Alternatives Summary Seeks Only 95% Compliance with the Relevant Water Quality Standards.

The Retained Alternatives Summary as well as all of the prior LTCPs, on which the "baseline" scenario in the Citywide LTCP is based, measure water quality compliance against surrogate water quality criteria for bacteria and dissolved oxygen, not those required under the Clean Water Act and New York state law. Specifically, DEP considers compliance with water quality criteria necessary only 95% of the time,³ rather than all of the time, to attain water quality standards. In other words, on average, non-compliance for 18 days out of 365 days in a year would constitute compliance. Moreover, since DEP has modeled compliance on modeled on an hourly basis, not a daily basis, the number of days experiencing non-compliance with water quality standards, in the baseline scenario, is certainly far more than 18.

The distinction between 95% compliance and attainment of water quality standards is important due to the extremely large pollutant loads and highly dynamic nature of CSO discharges, which by their nature result

³ See, e.g., N.Y. Dep't of Env'tl. Protection, Presentation: East River Focused Kickoff Meeting, at slide 21, "East River & LIS Projected % Attainment" (2018), available at <https://www1.nyc.gov/assets/dep/downloads/pdf/water/nyc-waterways/citywide-east-river-open-water/cso-ltcp-east-river-kickoff.pdf>.

principally in acute, rather than chronic, adverse water quality impacts. New York State regulations do not allow compliance with fecal coliform or dissolved oxygen water quality criteria to be assessed as a percentage of time that a waterbody is in attainment with the applicable criteria. In using inappropriate surrogate water quality criteria, DEP is attempting to avoid water quality standards compliance.

Moreover, based on DEP's prior statements, it appears that DEP relies on meeting these surrogate water quality standards only in model cells corresponding to the sampling stations within the open waters, rather than compliance in locations throughout the water bodies. In its June 30, 2018 response to public comments on the Jamaica Bay LTCP (response #17), DEP stated that it used this approach in the Jamaica Bay LTCP.⁴ We have every reason to assume that DEP used the same approach here. This is a misleading approach that may mask predicted violations in water quality standards in certain areas of the waterbody. Water quality standards are applicable to the entire waterbody, and not just at individual points (i.e., sampling stations) within a waterbody. The models should accurately predict fecal coliform and dissolved oxygen concentrations across the entire water bodies. Attainment with applicable water quality standards should be evaluated in all of the model cells, not just in the cells that line up with the sampling stations.

This is particularly relevant to in embayments and inlets on the shoreline of the open waters, where waters are less likely to be flushed by tidal action and therefore more likely to become and stay contaminated. These include areas such as:

Bronx

Bronx Kill (East and West)

Manhattan

Inwood Park and Muscota Marsh

Sherman Creek

North Cove Yacht Harbor

Stuyvesant Cove

Seventy-Ninth Street Boat Basin

Queens

Luyster Creek

Hallets Cove

Anable Basin

Brooklyn

Bushwick Inlet

Wallabout Channel

Navy Yard Basin

Atlantic Basin

Erie Basin

Gowanus Bay

Staten Island

⁴ N.Y. Dep't of Env'tl. Protection, Jamaica Bay and Tributaries Long Term Control Plan Public Comment Response Summary 5 (2018) [hereinafter Jamaica Bay LTCP Response to Comments], *available at* <https://www1.nyc.gov/assets/dep/downloads/pdf/water/nyc-waterways/jamaica-bay/jamaica-ltcp-comment-summary-jun-30-2018.pdf>.

Mill Creek Basin
Sharrotts Shoreline Inlet
Port Richmond Inlet

In formulating its Retained Alternatives Summary, DEP seems to have assumed that the water quality in these shoreline areas is the same as that in the main stem of the waters. On the contrary, sampling performed by New York City Water Trail Association, incorporated herein by reference, shows that the water quality in these areas often exceeds parameters for enterococcus deemed safe for human contact by the Environmental Protection Agency's in its 2012 Recreational Water Quality Criteria.⁵ These also happen to be areas where workers and recreators frequently access and come into contact with the water. There is no exception from water quality standards for shoreline areas. Each of these areas must be examined separately for potential alternatives to alleviate ongoing impairments. Moreover, DEP must assess locations with water-contact recreation as "sensitive areas" under the CSO Policy.

We note that, in an Oct. 10, 2019 response to prior SWIM comments on the Citywide LTCP, DEP stated that "[c]itizen data were used to compare predicted Enterococcus concentrations versus measured Enterococcus concentrations at locations in the model corresponding to the citizen sampling locations, as part of the water quality modeling calibration process."⁶ DEP's response did not explain the results of this comparison, nor does it explain in what ways, if any, the exercise resulted in actual changes to the model or to model outputs. DEP should explain this fully, with respect to prior LTCPs as well as the Citywide LTCP. Further, DEP should explain how its model results predicting future compliance, in the absence of any new CSO controls that might be adopted in the Citywide LTCP, can be reconciled with the results of the citizen sampling.

II. 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.

DEP limits the number of CSO control alternatives included in the assessment by focusing only on bacteria and dissolved oxygen levels. As noted in summary document, the Harlem River, East River, Arthur Kill, Kill Van Kull and Newark Bay are impaired by floatable pollution. The map on page 2 of the Retained Alternatives Summary reflects that the western portion of Long Island Sound and portions of Gowanus Bay are also impaired by nitrogen. The LTCP must analyze the effectiveness of the selected CSO control alternatives on reducing loadings for the full range of CSO pollutants that cause adverse impacts on receiving water quality, not just pathogens and low dissolved oxygen. The summary document is defective because it fails to analyze the impact of the alternatives on compliance with water quality standards for floatables or nitrogen. It is also defective because it does not consider whether CSO control alternatives will

⁵ N.Y. City Water Trail Association, 2019 Citizens Water Quality Testing Program [hereinafter Water Trail 2019 Testing Program], *available at* <https://docs.google.com/spreadsheets/d/11UVnmQgSIZoOsvgz59GpHKNdBWnBRSkuQNjSQ05UtLo/edit?usp=sharing> (last accessed Nov. 25, 2019).

⁶ N.Y. City Dep't of Env'tl. Protection, Citywide/Open Waters LTCP Public Comment Response Summary Final (2019), *available at* <https://www1.nyc.gov/assets/dep/downloads/pdf/water/nyc-waterways/citywide-east-river-open-water/cso-ltcp-citywide-east-river-open-waters-comments-response-summary.pdf>.

“provide the maximum pollution reduction benefits reasonably attainable”⁷ with respect to all pollutants, including those for which the receiving waters are not currently deemed to be impaired.

With respect to floatables, DEP states in the Retained Alternatives Study that 96%⁸ of all street litter is captured by catch basin hooding, wastewater treatment plants or in-water booms. That leaves 4% of street litter discharged uncontrolled into waters, causing the ongoing impairment. It is notable that the Retained Alternatives Study States that only 3% of street litter is caught by in-water booms, which means that the *majority* of street litter entering city waters is uncontrolled.

Moreover, the Retained Alternatives Summary provides no indication that DEP has analyzed, or will analyze, whether CSO control alternatives under consideration will “provide the maximum pollution reduction benefits reasonably attainable.” As the New York State Department of Environmental Conservation (“DEC”) has explained in legal filings against DEP, the United States Environmental Protection Agency (“EPA”) CSO Policy and the 2012 CSO Consent Order require DEP’s LTCPs to meet this standard, separate and apart from meeting the obligation to comply with water quality standards.⁹

A business-as-usual approach will not fly for a new generation of New Yorkers seeking to utilize our waterways for industry and recreation. Alternatives must be examined to reduce these pollutants.

III. DEP’s Modeling Methodologies May Have Produced Skewed Results and Underrepresented the Pollutant Levels in Receiving Waters.

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

The Citywide LTCP will rely on the results of all existing LTCPs, but the analyses performed by DEP that underlie the conclusions of each plan have internal inconsistencies, such as the application of a mix of 10-year and one-year modeling periods that appears to have resulted in flawed analyses and biased results. It is not clear why DEP used one year of rainfall data (2008) for its InfoWorks modeling assessment and 10 years of rainfall data for the East River Tributaries Model assessment. While 2008 was selected as representing a typical year, the 10-year record includes 2008 and the longer record would better capture long-term averages and trends. Thus, a more robust and consistent approach would be to use the same 10 years of rainfall data in both models. At minimum, DEP should explain and justify the rationale for using the two different approaches.

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

DEP previously stated, in its June 30, 2018, response to public comments on the Jamaica Bay LTCP (response #17), that it calculates attainment with water quality standards for dissolved oxygen using a depth-averaged method.¹⁰ In other words, at least in the Jamaica Bay LTCP, dissolved oxygen attainment was calculated at each of multiple layers (assumed to mean multiple different depths in the water column) and then

⁷ See Combined Sewer Overflow Policy, 59 Fed. Reg. 18,688, 18,693 at § II(B)(4)(b)(iii), available at <https://www.epa.gov/sites/production/files/2015-10/documents/owm0111.pdf>.

⁸ Retained Alternatives Summary at 24.

⁹ See New York City Dep’t Env’tl. Protection v. Martens, Respondents’ Memorandum of Law in Opposition to the Amended Verified Petition and in Support of Respondents’ Counterclaims (N.Y. Cnty. Sup. Ct., No. 400236-2014) (June 30, 2014), available at https://www.dec.ny.gov/docs/water_pdf/acmol.pdf.

¹⁰ Jamaica Bay LTCP Response to Comments at

averaged. Depth-averaging the modeled concentrations of dissolved oxygen can mask violations of the applicable water quality criterion for dissolved oxygen. Low oxygen levels often occur in the bottom of the water column and affect organisms that live in the sediment. When such low levels are averaged with higher concentrations near the surface of a waterbody, the resulting average may produce a value in attainment with the applicable water quality criterion, even though some of the individual values (i.e., for lower depths) are not in attainment. The Citywide LTCP should evaluate each individual predicted value for dissolved oxygen (i.e., predicted at each of the depth layers) for attainment with water quality standards for dissolved oxygen. Is DEP using the same depth-averaged modeling method for the Citywide LTCP that it used for the Jamaica Bay LTCP? Did DEP use that same method for all of the other LTCPs that form part of the baseline scenario for the Citywide LTCP modeling?

- c. DEP failed to sample waters during key late summer and late fall months and likely none at night.

DEP's took water quality samples for the LTCP program only in the spring and early summer and mid fall.

- DEP took samples on the East River and western Long Island Sound from April 1 to June 23.
- DEP took samples on the Hudson River and Harlem River from April 27 to June 9 and November 16 to November 19.
- DEP took samples on the Lower East River, New York Bay, Arthur Kill, and Kill Van Kull From October 10 to December 9.

These samples likely failed to fully depict the levels of dissolved oxygen in open waters. Dissolved oxygen levels fluctuate greatly throughout the year and even throughout the day. Higher values are typically detected in colder waters during the spring and early summer and in the late fall, when DEP tested. Lower values, which can be dangerous or deadly for fish, are typically seen in late summer and early fall. The samples DEP collected during cold conditions are unlikely to capture the range of dissolved oxygen concentrations seen in the open waters year-round and particularly during the critical summer months. These data cannot be relied upon for a full depiction of dissolved oxygen conditions in open waterways. Moreover, as dissolved oxygen levels are lowest at night when plants are not undergoing photosynthesis, DEP's failure to perform testing at night most likely results in an overestimation of dissolved oxygen in these waters.

- d. DEP mixed its seasonal LTCP sampling data with year-round Harbor Survey Monitoring data.

Moreover, mixing these seasonal data from the LTCP sampling program with yearly data from the Harbor Survey Monitoring Program likely skewed the results even further. When improperly mixed together, the sampling data, while claiming to represent a whole year's sampling, would have overrepresented the months in which DEP performed LTCP sampling. DEP must redo its analysis or justify the duration of its seasonal sampling and decision to mix the datasets.

IV. The LTCP's Baseline Factors Rely on Pollution Controls That Have Not Yet Been Implemented and Inexplicably Ignore Climate Change.

DEP's use of the term "baseline conditions" in the Retained Alternatives Summary is misleading and does not refer to current baseline conditions. In the summary document, "baseline conditions" represents future speculative assumptions that may have implications on the outcome of the assessment for attainment of water quality standards. DEP assumes CSO discharges will be reduced by hundreds of millions of gallons

citywide, based on its prediction of future dry weather flows, future capacities at wastewater treatment plants and significant implementation of green infrastructure that may never come to pass.¹¹

DEP's "baseline" includes an expected 1.67 billion gallons per year in CSO reduction from green infrastructure alone. In fact, DEP is already far behind its green infrastructure targets and does not expect to achieve its 2030 milestones.¹² DEP missed a prior milestone to manage the equivalent of 1,181 impervious acres (a 1.5% green infrastructure application rate) in 2015, and, as of 2019, it still has managed only 591 acres (a 0.75% green infrastructure application rate) in 2019.¹³ DEP is most likely going to miss its 2030 milestone, which is the equivalent of 7,873 managed acres (a 10% green infrastructure application rate). Given the slow start to the Green Infrastructure program in New York City, DEP should not incorporate these projects into its baseline projections for the Citywide LTCP.

Moreover, DEP highlights the daylighting of Tibbetts Brook as well as two potable water demand projects in Central and Prospect Parks as some of its forthcoming projects. However, the agency does not yet own the property rights to complete the daylighting of Tibbetts Brook, and there is no existing regulatory mechanism by which DEP can be compelled to complete any of these three projects specifically. While SWIM appreciates the efforts of DEP and many others to transform Tibbetts Brook and to reduce the potable water demand at Central and Prospect Parks, neither these nor any other specific future potential project should be included for the sake of baseline analysis.

The Citywide LTCP also relies upon successful implementation of recommended plans from previously-submitted LTCPs for waters that are tributaries to "open waters." While we believe it is appropriate to incorporate the projects mandated under the LTCPs into the modeling for the Citywide LTCP, we note that, based on the history of New York City's sewage and stormwater control plans, these plans may change over the next two and a half decades during which they are supposed to be implemented. Many details of the plans have not been designed yet, especially major grey infrastructure projects such as sewage capture and chlorination infrastructure. The design work for disinfection at Alley Creek, Flushing Creek, and Hutchinson River is underway, but not yet very far along.¹⁴ While some sewage capture infrastructure is in similar stages of preliminary design, others, such as Newtown Creek's sewage capture tunnel, have not even begun this process. These technical details will come into focus in the coming years. If the requirements in the LTCPs need to be modified, DEP and DEC must have a mechanism by which the Citywide LTCP will be reevaluated and modified as appropriate.

While DEP includes uncertain potential future actions in its development of the LTCP, it fails to incorporate the recommendations of the New York City Panel on Climate Change to account for the impacts of increased precipitation, which have been repeatedly acknowledged by DEP, DEC, and EPA. Some of the proposed LTCPs will not be completed until 2035 (Flushing Bay) or 2042 (Newtown Creek). According to the New York City Panel on Climate Change ("NYPCC"), storms could grow significantly in frequency and intensity by 2050. "Mean annual precipitation increases projected by the [global climate models] are 4 to 11 percent by the

¹¹ Retained Alternatives Summary at 15.

¹² N.Y. City Dep't of Env'tl. Protection, Green Infrastructure Contingency Plan, (June 27, 2016), *available at* <https://www1.nyc.gov/assets/dep/downloads/pdf/water/stormwater/green-infrastructure/gi-contingency-plan-2016.pdf>.

¹³ Id.; N.Y. City Dep't of Env'tl. Protection, 2018 Green Infrastructure Annual Report 2 (2019), *available at*

¹⁴ N.Y. City Dep't of Env'tl. Protection, DEC Case# CO2-20110512-25, Modification to CO2-20000107-8; CSO Order on Consent Quarterly Progress Report, Third Quarter 2019, *available at* <https://www1.nyc.gov/assets/dep/downloads/pdf/water/nyc-waterways/citywide-ltcp/2019-q3-cso-quarterly-report.pdf>.

2050s and 5 to 13 percent by the 2080s.”¹⁵ Yet DEP continues to rely on backwards looking projections, using 2008 as a model year. DEP states in its October 10, 2019 response to comments on the Citywide LTCP: “[t]he typical rainfall year used for modeling is the 2008 JFK rainfall, which remains a good representation of *current average* rainfall conditions” through 2019 (Response 1 (emphasis added)). But even if the model continues to account for average rainfall through the past 10 years, these conditions are expected to grow significantly worse. While 2008 saw only 46.3 inches, 57.4 inches of precipitation fell at JFK airport in 2018.¹⁶ DEP can rely on NYPCC data and expect these higher precipitation rates to become the norm. In its 2019 report, NYPCC confirms its predictive precipitation modeling and recommends factoring it into decision making:

recent increasing trends in temperature and precipitation in Central Park are generally tracking the NPCC 2015 projections for the 2020s time period encompassing the years of 2010–2039. NPCC2 confirms the use of the NPCC2 2015 projections for decision making by the city and region.¹⁷

DEP should incorporate into its baseline analysis the expected additional rainfall as determined by NYPCC.

Meanwhile, sea level rise could grow between 8 and 30 inches by 2050, high enough as to inundate the low-lying wastewater infrastructure. For New York City:

[National Panel on Climate Change] (2015) projects a mid-range (25th-75th percentile) sea level rise of 11-21 in. (0.28-0.53 m) at the Battery by the 2050s. . . . High-end estimates (90th percentile) reach 30 in. (0.76 m).¹⁸

When relying on existing and future stormwater and sewage infrastructure, DEP should model how sea level rise will impact the ability of wastewater treatment plants and CSO outfalls to continue functioning properly.

V. The Methodology Used to Assess Alternatives Is Not Appropriately Defined.

It seems that DEP is using a binary criteria to assess the proposed LTCP alternatives: whether the alternative will wholly cure the water quality impairment or not. For Arthur Kill and Kill Van Kull, DEP states that full removal of CSOs by the city would not attain compliance with coliform standard due to “other bacterial sources,” which presumably include New Jersey sources as well as New York City’s own Municipal Separate Storm Sewer System (“MS4”) sources. That is a poor excuse not to maximize CSO reductions and to see what can be achieved in combination with reductions from other sources. For Arthur Kill and Kill Van Kull, especially, additional MS4 protections will need to be afforded, as required by the city’s MS4 permit. DEP should jettison this binary approach to optimize water quality in New York City.

¹⁵ N.Y. City Panel on Climate Change, 2015 Report Executive Summary (2015) [hereinafter NYPCC 2015 Report], available at <http://onlinelibrary.wiley.com/doi/10.1111/nyas.2015.1336.issue-1/issuetoc>.

¹⁶ Nat’l Weather Serv., John F. Kennedy Airport, NY Historical Data, <https://www.weather.gov/okx/KennedyHistorical> (last accessed Nov. 27, 2019).

¹⁷ N.Y. City Panel on Climate Change, 2019 Report: Conclusions and Recommendations (2019), available at <https://nyaspubs.onlinelibrary.wiley.com/doi/10.1111/nyas.14032>.

¹⁸ NYPCC 2015 Report.

In prior LTCPs, DEP focused on frequency and volume of discharge, pollutant loading, and “time to recover” following a CSO event. This type of analysis focused on usability is a practical way to increase the number of days residents can safely come into contact with the water. For waters that are purportedly already in compliance under baseline conditions, such as the Harlem River, the retained alternatives discussion doesn't describe what the retained alternatives are intended to accomplish in terms of water quality improvement, since the only water quality metric used is the binary compliance/non-compliance with water quality standards. Will DEP incorporate the usability criteria in selecting or rejecting those alternatives in the LTCP?

Some of the retained alternatives, as listed on page 22 of the Retained Alternatives Summary, are not discussed at all in the waterbody-specific sections later in the report. These include: CSO relocation via gravity flow tipping to other watersheds, high rate clarification and floatables control. Why were these alternatives excluded from analysis at the level of individual waterbodies?

For other alternatives that were expressly eliminated, the explanations are cursory. For example, page 23 of the Retained Alternatives Summary states that certain optimization options and treatment plant expansion were evaluated using “optimization software” and “collection system models” but that no “viable alternatives” or “substantial” CSO reduction were identified. DEP should provide a much more detailed, technical explanation in the full LTCP, to allow the state DEC and technical experts working with interested members of the public to independently evaluate the strength of DEP's conclusions.

As with prior LTCPs, green infrastructure alternatives receive only a cursory discussion, referencing the citywide green infrastructure program and stating that “[o]pportunities for GI continue to be evaluated through the various outreach and incentive programs offered by DEP.” At this stage of DEP's green infrastructure program, after years of implementation experience, DEP should be expected to provide in the LTCP a detailed alternatives analysis of how green infrastructure can be deployed specifically in the drainage areas covered by this LTCP, on both public and private property.

Also in regard to green infrastructure, DEP has not explained how the “Green Infrastructure Performance Metrics” that DEC approved in July 2017 have factored into the modeling of baseline conditions. When DEC finalized the 2012 CSO Order, it explained in response to comments that, since most of DEP's waterbody-specific LTCPs were developed before the green infrastructure performance metrics were either submitted (in June 2016) or approved by DEC (in July 2017), DEP would be required in the Citywide LTCP to reconcile the approved green infrastructure performance metrics with modeling assumptions made in the prior LTCPs, and to consider any implications for prior LTCPs and for the Citywide LTCP in its evaluation of alternatives. Specifically, DEC stated as follows (in Response 3.6), and DEP should perform and publicly release for comment the analysis that DEC directed:

When preparing the Citywide LTCP due in 2017, DEP will consider an assessment of [the green infrastructure] performance metrics in its evaluation of alternatives. Adjustments to waterbody-specific LTCPs submitted prior to the 2016 milestone will be considered in the Citywide LTCP based on the performance of GI demos and the performance metrics submitted in 2016. When DEC reviews the 2017 Citywide LTCP, DEC will consider whether DEP's

assessment of performance metrics and DEP's consideration of adjustments to waterbody-specific LTCPs was appropriate.¹⁹

VI. The Retained Alternatives Summary Misrepresents the Water Quality in Open Waters.

It is hard to understand how DEP can claim that the Harlem River and other waters with similar, intermittent poor conditions will be in compliance with water quality standards under “baseline conditions,” even though those waters are highly polluted by CSOs under current conditions and the “baseline conditions” do not appear to include any meaningful future reductions in CSO discharges. Sampling done by New York City Water Trail Association shows often recurring dangerous levels of fecal bacterial in the Harlem River and others.²⁰ DEP's analysis in its Citywide LTCP “Kickoff” public presentations, which, as stated above, attempt to undermine state water quality standards by creating surrogate 95% attainment standard, shows HUD-3 and NYB-4 will not even be in compliance for pathogens 95% of the time.²¹

Further, DEP's sampling data for this LTCP shows multiple violations of the applicable dissolved oxygen criteria in the East River, western portion of Long Island Sound, Arthur Kill, Kill Van Kull, and Harlem River.²² These are all violations of acute numerical water quality standards. The Retained Alternatives Summary must be revised to account for these water quality violations and indicate what percentage of time the waters will be out of compliance due to low dissolved oxygen. If the modeled “baseline” conditions predict improved water quality in the future, absent any reduction in CSO discharges to the East River and others, DEP should explain what accounts for this improvement.

There is a significant amount of water quality data missing from the Retained Alternative Summary and Kickoff presentations. DEP has omitted its “Projected % Attainment” slide for pathogens at individual sampling stations in the Harlem River, though such slides are produced for other waterways. It is also telling that DEP did not produce “Projected % Attainment” slides for dissolved oxygen at any of the sampling stations in the relevant waterways.

The Retained Alternatives Summary must be revised to account for ongoing water quality violations and indicate what percentage of time the waters—and each individual sampling station—will be out of compliance due to high levels of pathogens and low dissolved oxygen.

¹⁹ N.Y. State Dep't of Env'tl. Conservation, Responsiveness Summary for Comments Received During the Public Comment Period Associated with the 2012 Modified CSO Consent Order, *available at* https://www.dec.ny.gov/docs/water_pdf/csosum2012.pdf.

²⁰ Water Trail 2019 Testing Program.

²¹ N.Y. City Dep't of Env'tl. Protection, Presentation: Citywide/Open Waters CSO Long Term Control Plan Public Kickoff Meeting Lower East River, Kill van Kull, Arthur Kill, and New York Bay, at slide 24 (Mar. 27, 2018) [hereinafter Lower East River and New York Bay Kickoff Presentation], *available at* <https://www1.nyc.gov/assets/dep/downloads/pdf/water/nyc-waterways/citywide-east-river-open-water/cso-ltcp-ny-bay-kickoff.pdf>; N.Y. City Dep't of Env'tl. Protection, Presentation: Citywide/Open Waters CSO Long Term Control Plan Public Kickoff Meeting Hudson River and Harlem River, at slide 21 (Jan. 31, 2018) [Hudson River and Harlem River Kickoff Presentation, *available at* <https://www1.nyc.gov/assets/dep/downloads/pdf/water/nyc-waterways/citywide-east-river-open-water/harlem-hudson-river-kickoff-meeting-presentation.pdf>].

²² Lower East River and New York Bay Kickoff Presentation at 22; Hudson River and Harlem River Kickoff Presentation at 24; N.Y. City Dep't of Env'tl. Protection, Presentation: Citywide/Open Waters CSO Long Term Control Plan Public Kickoff Meeting East River and Long Island Sound, at slide 19 (May 10, 2018) [hereinafter East River and Long Island Sound Kickoff Presentation], *available at* <https://www1.nyc.gov/assets/dep/downloads/pdf/water/nyc-waterways/citywide-east-river-open-water/cso-ltcp-east-river-kickoff.pdf>.

VII. All Waters Should Meet the Minimum Dissolved Oxygen Standard for Class I waters at 4.0 mg/L.

It is an unfortunate reality of New York State Water Quality Standards that the acute minimum dissolved oxygen limit is more protective in Class I waters than in Class SA, SB and SD waters (4.0 mg/L for Class I and 3.0 mg/L for Classes SA, SB and SD, though there is a minimum daily average of 4.8 mg/L for Classes SA and SB). The western portion of Long Island Sound is classified as SB, but the East River is classified as I. Given that the pollution loading to the East River is higher than that of the Sound, it does not make sense that the Sound has a relaxed acute dissolved oxygen standard. Instead of dividing these waters into different groups, the waterways should be assessed as a single ecosystem, jointly providing aquatic habitat. Fish and other migratory species can be negatively impacted by leaving the East River for the western portion of the Long Island Sound which could, at times, contain less dissolved oxygen. This same predicament holds for migration from any class I water to any Class SA, SB or SC water. Therefore, DEP should evaluate its capability to meet the 4.0 mg/L parameter for dissolved oxygen in all open waters.

VIII. New York City Tributaries Serve as Sewer Pipes Carrying Pollution to Open Waters and Must Be Factored into Modeling.

TDEP states that the total CSO discharge to open waters is 11 billion gallons. This figure neglects to acknowledge that the total load to these waters citywide totals more than 21 billion gallons per year, discharged either directly to open waters or carried downstream from tributaries that receive large CSO loads, such as Gowanus Canal, Newtown Creek, Bronx River and Flushing Creek. These waterways act like sewer pipes causing and/or increasing the impairments of open waters. Their contributions to water quality violations are visible in pollution sampling data in gradients emanating from the mouths of the tributaries. Can DEP confirm that their pollutant load contribution has been factored into the modeling and analysis for the Citywide LTCP?

IX. The Citywide LTCP Should Consider the Benefit of a New Wastewater Treatment Plant on Rikers Island.

It has been suggested that the pending closure of the Rikers Island Correctional Facility offers an opportunity for New York City to construct a centrally-located, state of the art, and sea level rise-resilient wastewater treatment system. DEP should examine this possibility, including the potential cost of such a facility and the potential to capture and route combined sewer flows from other neighborhoods directly to such a new treatment plant. Given the enormous water quality challenges faced by the city today, and the certainty that climate change will put a growing burden on the city's sewer system in the coming decades, DEP should consider whether a new wastewater treatment plant may be a cost-effective way to bring the city closer to compliance with the Clean Water Act.

X. Other Comments on the Presentation of Information in the Retained Alternatives Summary

The tables in the document show modeled compliance with enterococcus criteria only for those waterbodies where such criteria currently apply under the state's water quality standards. Prior LTCPs showed modeling results for enterococcus compliance even for waterbodies where the state currently applies the fecal coliform standard. In light of ongoing legal and regulatory processes to determine the appropriate fecal indicator bacteria and numeric criteria, the LTCP should show modeling results for enterococcus for all waterbodies. Notably, in Kickoff presentations last year, DEP's slides showed enterococcus exceedances under modeled "baseline" conditions in many water bodies where the state currently applies the fecal

coliform standard.²³ This is critically important information for the public to understand, and DEP must account for it in evaluating the water quality benefits of alternative CSO controls.

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.

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.

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.²⁴ What new modeling methods or assumptions have resulted in this new, lower total?

XI. DEP Must Publish a Final Draft of the Citywide Long Term Control Plan Prior to Submission to DEC to Achieve Meaningful Public Participation.

It is unacceptable that DEP continues to undermine public participation under the guise of hosting public meetings and drafting “summary” documents. As DEP continues to withhold primary and background documents in developing the LTCPs, the public is still being denied an opportunity to meaningfully participate.

The lack of public participation continues even after the December 2017 City Council public hearing on Wastewater Infrastructure: Current and Future Plans, where Deputy Commissioner Licata promised (in response to City Council Member Donovan Richards’ question about why DEP was not sharing the final drafts of the City’s proposed CSO LTCPs with the public before they are submitted to the State) that, going forward, DEP would share the final proposed LTCPs with the public. We took this as a clear commitment to provide the public with the opportunity to review and comment on a full draft plan document, not a PowerPoint presentation or summary document. The public needs to be given an opportunity to review the full draft LTCP before it is sent to the State.

We again demand an opportunity for public review and comment on the complete draft of the LTCP prior to submission to DEC (including assumptions made, methodologies, modeling inputs and outputs, and references, as well as key milestones and metrics by which to measure them, timelines for program completion, as well as program monitoring and reporting schedules, and enforceability mechanisms, etc.). The draft should be released with sufficient time for members of the public to undertake a critical review of a long and technical document, and with sufficient time for DEP to genuinely respond to comments and, as appropriate, revise the draft based on those comments before submitting the LTCP to the state.

²³ East River and Long Island Sound Kickoff Presentation at 18, 20-21; Lower East River and New York Bay Presentation at 20, 23-24; Hudson River and Harlem River Kickoff Presentation at 19, 21, 23, 25.

²⁴ Letter from Vincent Sapienza, P.E., Dep. Comm’r, Bureau of Wastewater Treatment, N.Y. City Dep’t of Env’tl. Protection, to Joseph DiMura, P.E., Dir., Bureau of Water Compliance, Div. of Water, N.Y. State Dep’t of Env’tl. Conservation, at 6 (Oct. 19, 2011), available at https://www.dec.ny.gov/docs/water_pdf/csowp2011.pdf.

We note that on November 15, 2019, DEP released to Riverkeeper, via a Freedom of Information Law request, documents regarding the InfoWorks, Landside Modeling reports, and other information relevant to the development of the Citywide LTCP. We have not had sufficient opportunity to review and analyze these documents in preparation for submitting these comments.

* * *

Thank you for the opportunity to provide public comment on the Retained Alternatives Summary. We would be happy to meet with you and your staff to discuss our comments and concerns.

Respectfully,

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