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Via E-mail
June 17, 2021

Richard Wolff, Executive Director
North Hudson Sewerage Authority
1600 Adams Street
Hoboken, NJ 07030

Re: Review of Selection and Implementation of Alternatives of the Long Term Control Plan (LTCP)
North Hudson Sewerage Authority – Adams Street Wastewater Treatment Plant (WWTP)
NJPDES Permit No. NJ0026085

Dear Mr. Wolff:

Thank you for your submission dated June 2020 entitled: “Selection and Implementation of Alternatives” as submitted to the New Jersey Department of Environmental Protection as submitted to the New Jersey Department of Environmental Protection (the Department or NJDEP). This report was submitted in a timely manner and was prepared in accordance with Part IV.D.3.b.vi of the above referenced New Jersey Pollutant Discharge Elimination System (NJPDES) permit. This submission was issued in response to the Long-Term Control Plan (LTCP) submittal requirements as due on October 1, 2020.

The overall objective of the LTCP is to identify and select CSO control alternatives that meet the requirements of the Federal CSO Control Policy Section II.C.4, N.J.A.C. 7:14A-11, Appendix C, and the USEPA Combined Sewer Overflows Guidance for Long-Term Control Plan (EPA 832-B-95-002). The Federal CSO Policy establishes a framework for the coordination, planning, selection, and implementation of CSO controls required for permittee compliance with the Clean Water Act. This subject report builds on other previously submitted LTCP reports referenced in Part IV.D.3.b of the NJPDES permit, which includes an approved hydrologic, hydraulic and water quality model and other information in the July 1, 2018 “System Characterization Report” (approved by the Department on May 6, 2019); the July 1, 2018 “Public Participation Process Report for the Adams Street WWTP” (approved by the Department on March 29, 2019); the June 30, 2018 “NJCSO Group Compliance Monitoring Program Report” (approved by the Department on March 1, 2019); the June 2018 “Identification of Sensitive Areas Report” (approved by the Department on April 8, 2019); and the June 25, 2019 Development and Evaluation of Alternatives Report (DEAR) (approved by the Department on March 24, 2020).

The below represents the Department’s initial comments. The Department reserves the right to further comment on these issues. Comments are as follows.

Comment 1: While the Department acknowledges that the LTCP was submitted in June 2020, which is prior to the extension of the due date of October 1, 2020 as granted in a letter dated April 15, 2020, note that the cover page of the document states “Status: Draft.” Revise accordingly as part of any revised plan.

In addition, Part IV.D.1.b of your existing CSO permit states the following:

- “b. All reports submitted to the Department pursuant to the requirements of this permit shall comply with the signatory requirements of N.J.A.C. 7:14A-4.9, and contain the following certification:
- i. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information”.

Include this statement as well as a signature certification in a revised report.

Executive Summary

The Executive Summary serves to provide a summary of the overall report. Comments have been incorporated on the specific report sections below; however, any changes as part of a revised LTCP should include revisions to the Executive Summary as appropriate.

Comment 2: Under Background and Objectives of the Long Term Control Plan within the Executive Summary the following is stated:

“...The permit requires the permittee to develop a feasible CSO control plan that will meet water quality standards using either the Presumption Approach or the Demonstration Approach. After review of both approaches, the Authority chose to move forward with the Presumption Approach to achieve permit compliance with the LTCP because this approach is more cost-effective and methods to measure compliance are more feasible.”

The 2015 NJPDES CSO permit requires selection of either the Presumption Approach or the Demonstration Approach. The Federal CSO Control Policy and the NJPDES permit at Part IV.G.4.f.ii specify that wet weather capture is a means of compliance under the Presumption Approach as follows:

- “ii. The elimination of the capture for treatment of no less than 85% by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis;”

The Department acknowledges the selection of the Presumption Approach to attain compliance with the Federal CSO Control Policy as well as the water quality based and technology based requirements of the Clean Water Act (CWA) consistent with the National Combined Sewer Overflow Control Strategy issued on August 10, 1989 (54 Federal Register 37370).

Comment 3: Under Current Program Status within the Executive Summary there are four topics namely: Northwest Resiliency Park, Sewer Cleanings and Linings, Rebuild by Design, Hoboken Green Infrastructure, and Sewer Connection Stormwater Management Requirement. The Department acknowledges these efforts as included within the Executive Summary but these topics should be detailed within the report itself. It is suggested that additional detail be provided in the body of the report or, at a

minimum, the Executive Summary should include references to appendices or other reports relevant to these topics.

Comment 4: Green Infrastructure is referenced in the Executive Summary including the following:

“In October 2013, the city of Hoboken submitted the Hoboken Green Infrastructure Strategic Plan. The plan outlines strategies to help manage the increasing intensity and frequency of severe weather which contributes to CSOs. Current green infrastructure elements that are either in planning or already constructed are permeable pavements and rain gardens in Southwest Resiliency Park, multiple gardens and pervious spaces in the Northwest Resiliency Park, underground detention systems at 7th and Jackson Street Resiliency Park, and the Washington Street Rehabilitation and Redesign Project that includes 15 rain gardens along Washington Street. These elements will work in parallel with the LTCP to further control CSOs.”

Similarly, on page v the following is referenced under Sewer Connection Stormwater Management Requirement:

“Since 2001, the Authority has required all new sewer connection approval applications to include Stormwater Management....Since the requirement was put into place, there have been over 45 stormwater detention systems installed of various sizes, resulting in over half a million gallons of stormwater storage throughout the system. Since most of these systems were installed before the system characterization was completed, these systems are already accounted for in the baseline characterization...”

Expand upon this description by providing a map or listing of existing GI practices or planned GI practices for completeness as a separate section within the report. The Department is in receipt of correspondence dated June 22, 2020 as entitled “Summary of Stormwater Detention Systems and Green Infrastructure Practices” which covers all 3 municipalities within the NHSA district including Hoboken. This comment could be satisfied by including the information and attachments within that submittal as part of the LTCP. Revise accordingly.

Comment 5: On page vi under Long Term Control Plan there are nine subsections regarding the nine elements of the LTCP including references to Characterization, Monitoring, and Modeling of the Combined Sewer System, Development and Evaluation of Alternatives Report (DEAR) and Public Participation where these reports are included later as Appendices A, B and C, respectively. Incorporate references to these appendices within these sections for completeness. In addition, provide a reference to the Compliance Monitoring Report as well as the report itself as an appendix since it provides a foundation for the LTCP.

Comment 6: On page vi under Consideration of Sensitive Areas, it is stated that it was determined that there are no sensitive areas within the portion of the Hudson River that is tributary to the Adams Street WWTP system with a reference to the Identification of Sensitive Areas Report submitted on March 29, 2019 by the NJCSO Group permittees. Refer to the Department’s December 17, 2018 findings on the permittees’ June 2018 "Baseline Consideration of Sensitive Areas" report and revise this section.

Comment 7: The Executive Summary must contain summary information regarding the selected CSO controls given that the selection of alternatives in Section 3 is the overall objective of the LTCP. On page vii under Implementation Schedule, Table ES-1 shows the Authority’s proposed LTCP implementation schedule for both the Adams Street and River Road service areas, including the estimated construction cost. Given the expressed interest by members of the public in the Executive Summary and to promote ease of understanding of the LTCP, revise this table to be specific to projects that relate to the NHSA – Adams Street LTCP to attain compliance with the Presumption Approach.

Section 1, Introduction

Comment 8: Section 1.3, Purpose and Scope states the following:

“The purpose of this report is to fulfill NJDEP Permit requirements to develop a comprehensive long term plan expected to accomplish the requirements of the Clean Water Act within the Adams Street WWTP service area...”

A key purpose of this report is to present the selection of alternatives for the LTCP. While this section references WWTP expansion and storage, increased conveyance to the WWTP and CSO-related bypass, there is no mention of the construction of the new plant outfall. Please correct.

Section 2, Methodology

Comment 9: Percent capture is discussed in Section 2.2, Existing Percent Capture where it is stated that:

“The statement of combined sewage implies sanitary flow is also included in the calculation and not only wet weather flow. Applying the updated method from the permit and updated model results, the existing percent capture increases when sanitary flow during wet weather is accounted for. The following equation applies this methodology:

$$\text{Percent Capture} = 1 - \frac{\text{Overflow Volume}}{\text{Total Volume in System during Wet Weather}} \quad ,,$$

The following tables show the values utilized within this equation:

Table 2-1. Overflow Volume by Drainage Basin in the Typical Year, Existing Conditions

Drainage Basin	CSO Volume Typical Year, MG
H1	65.5
H3/H4/HSI	82.3
H5	23.8
H6/H7	13.9
18PS	6.1
W1234	24.9
W5	6.3
TOTAL	407.7

MG = million gallons

Table 2-2. Wet Weather Volume at the Adams Street Wastewater Treatment Plant in the Typical Year

WWTP Flow	Volume Typical Year, MG
Sanitary Flow at WWTP in Dry Weather	490.9
Wet Weather Flow at WWTP	613.7
Total Wet Weather Volume at WWTP	1104.6

The derivation of percent capture is central to a review of this report given that the permittee has selected the Presumption Approach as a means of compliance. The CSO Volume Typical Year in MG listed for W1234 is specified as 24.9 which is different from Figure 1-1 “Adams Street Wastewater Treatment Plant Service Area” which states 242.9 MG where other values within Table 2-1 do not match Figure 1-1. The permittee provided additional detail on this issue in a November 10, 2020 submission which served to explain this issue. Supplement this report with a detailed table of the numerical values utilized within the equation that was used to derive the baseline capture results (shown on page 2-2) as well as the projected percent capture results for the selected alternatives to demonstrate compliance from the November 10, 2020 letter. Approval of this report hinges in part on the inputs and results of this equation being clearly demonstrated and reproducible. Expand upon this topic in Section 2.2 or add an Appendix to show a breakdown of results.

Comment 10: Regarding Section 2.2, Percent Capture, it is stated:

“Applying the updated volumes to the updated percent capture calculation, the existing percent capture within the Adams Street WWTP Service Area is 73%. This value was referenced as the baseline condition for percent capture calculations when developing combinations of controls for the LTCP.”

Note that the issue of Percent Capture is discussed in the revised version of the “System Characterization Report for the Adams Street WWTP” dated April 1, 2019 as revised July 9, 2019. Percent capture is depicted on page 8-11 in Section 8.3 (Runoff Distribution in the Adams Street Service Area):

Table 8-1. Typical Year Wet Weather Capture Calculations

Typical Year Calculation	Typical Year Volume (MG)
Total Wet Weather Volume Treated at WWTP	515.4
Total Overflow Volume	383.7
Total Wet Weather Volume	899.1
% Wet Weather Capture	57%

The value of 73% differs from 57%. In addition, the overflow volumes included in Tables 2-1 (Overflow Volume by Drainage Basin in the Typical Year, Existing Conditions), Table 2-2 (Wet Weather Volume at the Adams Street Wastewater Treatment Plant in the Typical Year) and Figure 1-1 (Adams Street Wastewater Treatment Plant Service Area) of the LTCP differ from those included in Table 8-1 within the System Characterization. Please explain.

Comment 11: In order to assess trends associated with the effects of climate change, the Department is evaluating a requirement to install flow meters at CSO outfalls to assess CSO trends over time in the next NJPDES permit for this facility for certain outfalls dependent on the timing of CSO improvements. This would be in addition to the already required reporting of precipitation measures at regional rain gages to be included on monthly monitoring report forms. Flow metering at the outfalls could also be a part of adaptive management to determine if additional CSO reductions are necessary in order to demonstrate compliance with 85% percent capture to help inform future model runs. Address the viability of flow meters on any of the outfalls.

In addition, the State of New Jersey and the Department are working to address and mitigate the impacts of climate change where additional information is available here: <https://www.nj.gov/dep/climatechange/>. Climate change can have an impact on the design for resiliency for CSO storage and high rate treatment and resiliency requirements must be considered in the design of any infrastructure. Specifically, in accordance with the provisions of Executive Order 11988, the USEPA and the New Jersey Water Bank require that funded infrastructure be located outside of floodplains or elevated above the 500-year flood elevation. Where such avoidance is not possible, the following hierarchy of protective measures has been established:

1. Elevation of critical infrastructure above the 500-year floodplain;
2. Flood-proofing of structures and critical infrastructure;
3. Flood-proofing of system components.

Address how the selected CSO control alternatives address climate change and sea level rise.

Section 3, Selected Alternatives

Comment 12: Section 3.1, Alternatives Selection Approach states the following:

“...the outfalls with the largest CSO volumes in the typical year are H1, H3/H4/HSI, and W1234. These three outfalls were the focus of efforts to increase percent capture because there is the largest available volume to convey to the WWTP. Based on public input and the desire to avoid high costs and disruptive construction of satellite facilities, efforts focused on maximizing capacity at the WWTP and maximizing the conveyance to the WWTP with existing facilities.”

The elimination of flooding is a key objective of the selected CSO control alternatives. Additional information should be included in this section to describe any ongoing flooding within the combined sewer system. While the LTCP does not specifically reference flooding, Section 1.4, System History and Description of the System Characterization Report for the Adams Street WWTP further states the following:

“Street elevations in most of Hoboken and the waterfront areas of Weehawken are only a few feet higher than mean high tide elevations in the Hudson River and are below the Federal Emergency Management Agency 100-year flood elevation. These areas are vulnerable to coastal storm surges from the Hudson River and have flooded extensively in the past, such as during Hurricane Sandy in October 2012. This also has an impact on combined sewer performance because high-tide elevations in the Hudson River are often higher than hydraulic elevations in the collection system during wet weather events. This prevents tide gates from opening and has historically caused street flooding in Hoboken. The Authority has constructed two wet weather pump stations in Hoboken to prevent street flooding and basement backups. Street flooding also occurs in Hoboken during wet weather due to the original construction of the sewers that resulted in negative slopes, bottlenecks, and other performance-

hindering conditions. There are also persistent watermain breaks that causes groundwater infiltration and reduces wet weather capacity from the Authority’s combined sewer systems.”

The Department maintains that the LTCP should give the utmost priority to the elimination of ongoing flooding, which is a public health issue. Explain if any areas within the combined sewer system are prone to flooding (including adjacent separately sewer areas) and the cause of such.

Comment 13: The June 25, 2019 DEAR contains extensive information on analyzed alternatives that were outlined in Table ES-1, Adams Street WWTP Service Area CSO Control Alternatives Comparison. Additional discussion should be added to Section 3, Selected Alternatives to explain why any of the alternatives from the DEAR were not selected in the LTCP or were changed in the LTCP. For example, in Section 5 of the DEAR, a storage tank for the H3/H4/HS1 Basin was proposed beneath the Hoboken Little League Field. The rationale for this alternative to not be included in the LTCP is not explained. Revise accordingly.

Comment 14: Section 3.1.1.2, Wet Weather Blending states”

“Recent regulations have approved blending as a form of treatment during wet weather to blend treated influent with fully treated final plant effluent and meet effluent standards. This process would allow increased volumes to pass through the WWTP during wet weather while still maintaining monthly permit standards...”

The Department is not aware of recent regulations specific to blending; rather that blending can be allowable for STPs that accept combined sewage under the bypass regulations at 40 CFR 122.41. For the purposes of any bypass approval as part of the LTCP, generally address the criteria at 40 CFR Part 122.41(m)(3) in order for the Department to fully consider bypass as a final LTCP alternative. Note that if a bypass alternative is approved via the NJPDES permit there would be no relaxation of existing effluent limitations.

Comment 15: Section 3.1.1.2, Wet Weather Blending Adams Street WWTP to 35 MGD through Blending and High-Rate Treatment also states the following:

“This process would allow 20 MGD of flow through primary treatment and disinfection to be combined with the 32 MGD passing through full treatment (aka blending). Disinfection of the 20 MGD bypass would occur concurrently with primary settling in one of the three primary clarifiers...”

Extensive analyses were provided in the June 25, 2019 DEAR for high rate treatment systems including Cloth Media Filtration and Compressible Media Filtration. Provide detail as to whether or not these treatment units have been selected in order to enhance primary treatment as part of the DEAR. The Department notes that within Table 7-7 “Long Term Control Plan Implementation Schedule, Adams Street Wastewater Treatment Plant” there is a project entitled “Increase Capacity at Adams Street WWTP by 20 MGD through Side Stream Treatment.” Additional detail should be provided for these alternatives regarding siting, disinfection contact times and dosage in the evaluated alternatives. Provide a breakdown of the necessary steps to increase capacity at the Wastewater Treatment Plant.

Comment 16: Section 3.1.1.2, Wet Weather Blending includes information regarding capacities of the various treatment units ranging from 52 MGD to 32 MGD. However, limiting factors in STP Capacity, which are also noted in the DEAR, are as follows:

- The capacity of the **grit removal system** is the limiting process in the Preliminary Treatment Building. There are two grit chambers and each is rated at 24 mgd. This capacity limits the preliminary treatment capacity to approximately 24 mgd when one unit is out of service.

- The **secondary treatment process (PURAC)** is currently planned for a major rehabilitation. The disinfection capacity and performance has been impacted due the recent performance degradation of the PURAC DAF/Flofilters.
- There are three (3) channels of **UV disinfection**. The hydraulic capacity of each channel is limited 15 mgd due to headlosses in the UV banks, baffles and control gates. When one channel is out of service the capacity is 30 mgd. However, the disinfection capacity is currently significantly below the required design capacity and is impacted due to the sand that has migrated through the failed underdrains in several DAF/Flofilter cells. Once the DAF/Flofilters are rehabilitated the UV disinfection capacity should be restored to the design flows.

Due to multiple types of upgrades described in this section within the plant boundaries, provide current and proposed flows for each system treatment unit in a tabular format with columns for each unit for current and proposed capacities. In addition, describe why rehabilitation of the PURAC system was eliminated from the LTCP.

Comment 17: Section 3.1.1.3, Install 8-MG Storage Tank at Trickling Filter and 2-MG Tank at Head of Plant focuses on the installation of storage tanks near the plant whereas within the DEAR at Section 12.5.5, Install Storage Tank at Trickling Filter it is stated that either a 5 MG or 10 MG tank would allow for better control of influent flow through the plant during and after a rainfall event. Describe how the 8 MG and 2 MG tanks were derived since these alternatives differ from the DEAR. It is also unclear why the time span of 2042 and 2046 (Table 7-7) is needed to begin construction of these tanks given that they are key to the overall CSO control strategy of diverting additional water to the plant. Please clarify.

Comment 18: Section 3.1.2, Increase Capacity of 5th Street Pump Station and Construct New Force Main states the following:

“In this alternative, the capacity of the 5th Street Pump Station will be increased from 15.8 MGD to 35 MGD and a new force main constructed along Frank Sinatra Drive to the 11th Street Pump Station. This approach was chosen because, compared to storage alternatives, it avoids expensive land acquisition and challenging construction. Capacity will be increased through installation of new pumps and slightly increasing the footprint of the pump station and a new 36-inch force main along Frank Sinatra Drive. This alternative is ideal because the 5th Street Pump Station pumps flow from both the H1 and H3/H4/HSI drainage basins through a single pipe, therefore flow from two outfalls can be targeted with one facility.”

This alternative is also shown in Table ES-1 as follows:

Drainage Basin	Project	Construction Cost	Projected Start Date
H1/H3/H4/HSI	Increase Capacity of 5th Street Pump Station, Construct Force Main and Construct Parallel 11th Street Siphon	\$30,000,000	2036
H5	Increase Capacity of 11th Street Pump Station	\$13,000,000	2039

Concepts presented in the DEAR in Section 5 that passed the preliminary screening for the H3/H4/HSI Basin for CSO Outfall 005A include:

- Pump Flows through 5th Street Pump Station

- CSO Storage Tank beneath Stevens Park
- CSO Storage Tank beneath Hoboken Little League Field
- CSO Storage Tank in River between Sinatra Park Amphitheater and Pier C Park
- Chlorine Contact Basin in River between Sinatra Park Amphitheater and Pier C Park

Concepts presented in the DEAR in Section 6 that passed the preliminary screening for the H5 Basin for CSO Outfall 006A include:

- Consolidate Flows with H3/H4 through conveyance pipe to HIS Regulator
- Consolidate Flow H3/H4 through storage tunnel to HIS Regulator
- Modify the H5 Regulator to convey additional flow to the 11th Street Pump Station
- CSO Storage Tank at Maxwell Place
- Chlorine Contact Basin at Maxwell Place
- Disinfect at H5 Regulator

Provide additional detail as to whether or not the above referenced alternatives as presented in the DEAR have been replaced by the construction of the new force main. In addition, describe if the construction of the Hoboken Siphon is related to the force main. Finally, describe if the “Parallel 11th Street Siphon” as presented in Table ES-1 is the same as the Hoboken Siphon with Parallel Pipeline.

Comment 19: Section 3.1.4, Increase Capacity of Hoboken Siphon with Parallel Pipeline states the following:

“The Hoboken Siphon conveys flow from the siphon chamber downstream of the 5th Street and 11th Street Pump Stations in the H3/H4/HIS, H5 and H6/H7 drainage basins and directly the WWTP. Currently, the siphon flows rather full and its condition is unknown due to the lack of entrance points and redundancy...”

It is unclear if this alternative was presented in the DEAR or if it was referenced as a different name. In addition, the increase in capacity to the Hoboken Siphon is not referenced in Table ES-1. Clarify accordingly.

Comment 20: Section 3.1.5, Increase Capacity of Park Avenue Siphon with Third Pipeline states the following:

“The current bottleneck for conveying flow from the W1234 drainage basins to the WWTP occurs immediately downstream of the Park Avenue interceptor. The existing Park Avenue Siphon takes the flows from W1, W2, and W3, combined in the interceptor, and conveys them through an existing 24-inch and 12-inch siphon to the WWTP. This alternative proposes increasing the capacity of the existing 24-inch and 12-inch siphons with a third pipeline to increase the capacity conveyed to the WWTP. Portions of the interceptor between the siphon and W1, W2, and W3 regulators will also need to be increased in size for this alternative.”

Further clarify how this alternative affects the interrelationship between W123 and W4 and the result at the outfall.

Section 4, Operational Plan

Comment 21: Part IV.G.6 of the NJPDES CSO permit states the following regarding Operational Plan:

“a. Upon Departmental approval of the final LTCP and throughout implementation of the approved LTCP as appropriate, the permittee shall modify the O&M Program and Manual in accordance with D.3.a and G.10, to address the final LTCP CSO control facilities and operating strategies, including but not limited to, maintaining Green Infrastructure, staffing and budgeting, I/I, and emergency plans.”

In accordance with N.J.A.C. 7:14A-6.12 of the NJPDES Rules, the permittee must maintain and operate the treatment works and facilities installed by the permittee to achieve compliance with the terms and conditions of the discharge permit. The rules provide that proper operation and maintenance includes, but is not limited to, effective performance; adequate funding; effective management; adequate staffing and training; regularly scheduled inspections and maintenance; and adequate laboratory/process controls. While you have provided information regarding the O&M Program and Manual and updates that will be performed in the future for CSO controls, expand upon this section as to how the Operational Plan for the LTCP, including the Emergency Plan and Asset Management Plan, will address effective performance; adequate funding; effective management; adequate staffing and training; regularly scheduled inspections and maintenance; and adequate laboratory/process controls. In addition, acknowledge that an operations and maintenance plan will be prepared for the operation and maintenance of green infrastructure.

Section 5, Public Participation

Comment 22: Section 5 includes an overview of public participation including public participation that has occurred since the submission of the June 2018 Public Participation Progress Report. Public participation elements as described in this section include a Community Advisory Board; public meetings; advertorials and newsletters; online presence; and public outreach activity where this description provides a robust summary of public participation activities and feedback to date.

Public participation will continue in the next NJPDES permit and could include three primary goals: inform, educate and engage. The Department is evaluating this issue and is in the process of preparing updated NJPDES permit language to advance this issue for the next permit renewal as part of a stakeholder process. Future permit language will likely include specific requirements for advance advertisement of public meetings. Provide any suggestions as to how to better inform the public of meetings. Another element for future public participation could include public input on the siting of green infrastructure projects. Provide input on the viability of public input on this topic.

Comment 23: Section 5.6, Public Input and Effect on Long Term Control Plan, it is stated:

“While compiling the LTCP, the main feedback received from the public included concerns regarding the proposed satellite storage tanks and treatment units, including those proposed on public property and along the Hudson River, and those that involved in-street construction...For these reasons, public input had an effect on selecting the LTCP by placing a focus on expanding the capacity of the WWTP as much as possible, and once the capacity is expanded, increase the volume conveyed to the WWTP. Alternatives such as storing or treatment outside of the plant, while effective strategies, would cause more disruption to public activity.”

The Department acknowledges that the public had input into the selection of CSO control alternatives. However, clarify if the final selected alternatives were presented to the public.

Section 6, Compliance Monitoring

Comment 24: Section 6.2, Combined Sewer Overflow Discharge and Frequency Monitoring states:

“The float sensors in the regulators diverting flow to the Authority’s permitted CSO outfalls during wet weather events will continue to operate and be maintained during and after LTCP implementation. The sensors are connected to the Authority’s supervisory control and data acquisition (SCADA) system logging the frequency and duration of CSO events. The logged data are also incorporated into the public notification system...”

The Department acknowledges and appreciates that there are sensors for the NHSA – Adams Street outfalls that provide real-time information on CSOs yet also serve to log the frequency and duration of CSO events. In addition to being a component of the public notification system at <http://www.nhudsonsa.com/thrive/waterbody.html>, this system is useful in tracking CSO trends as well as in completion of the existing permit requirement for “Duration of Discharge.” Provide detail as to whether or not modifications can be performed to the current system to measure volume, in order to serve as an additional performance indicator as discussed in Comment 11.

Comment 25: Section 6.3, Combined Sewer Overflow Water Quality Monitoring states:

“Based on the implementation schedule, water quality monitoring will be conducted at the regulators of the affected outfalls 3 months after construction of a control has been completed to verify effectiveness of the controls. Table 6-1 shows locations where the monitoring will be conducted:

Table 6-1. Water Quality Sampling Locations

Basin ID	Location
H3	3rd Street at River Street (in crosswalk)
H5	11th Street at Washington Street
H7	14th Street East at Washington Street
W2	506 Gregory Avenue

”

Clarify the intended purpose for this water quality data. Note that the Department approved the Compliance Monitoring Program as submitted by the NJ CSO Group and is in receipt of the “Calibration and Validation of the Pathogen Water Quality Model,” September 2020 as submitted by the NJ CSO Group which is pending review. It is the Department’s understanding that the Compliance Monitoring Program will be supplemented with additional data as time progresses and that modeled results will be used for an assessment of compliance.

If this water quality sampling is intended to supplant the Compliance Monitoring Program, know that evaluating raw data from a monitoring program may not be adequate to address some of the stated objectives above, and hence, a receiving water quality model was recommended due in part to the complexity of the pathogen sources impacting the receiving waters where NJ CSO discharges occur. The advantage of developing a landside model coupled with a receiving water model is their ability to quantify each source and then establish a linkage between those pathogen source loadings and water column pathogen concentrations. Secondly, the advantage of developing such model was to fill in the gaps so that we don’t have to monitor 300+ locations but instead sample at 60+ sites and let the model provide results at locations where sampling sites are lacking.

If NHSA chooses to proceed with Combined Sewer Overflow Water Quality monitoring, NHSA would have to submit a formal work plan with a revised monitoring locations and sampling frequency for approval. Please address.

Comment 26: Section 6.4, Future Flow Metering in the System states the following:

“Flow metering during and after the LTCP is not an express requirement under the permit, however, future monitoring within the CSS system will be conducted when necessary to collect data before, during or after implementation of LTCP alternatives in order to eliminate data gaps necessary for design or construction. The Authority will submit a flow metering plan, if necessary, to the NJDEP for approval. The locations and numbers of meters will vary based on the LTCP alternative project needs.

The goal of periodic flow metering is to continually update the hydraulic model in order to provide the Authority with a tool for evaluating both the success of an LTCP CSO control and the potential impacts as various LTCP CSO controls are implemented. Flow monitoring will be conducted in any given location for at least 1 year until enough rain events are recorded over the monitoring period...”

The Department supports future flow metering and concurs that a rerun of the model would be appropriate particularly after significant construction projects are completed. This will allow verification of the percent capture calculations as part of Adaptive Management to provide an assessment of compliance against 85% wet weather capture. However, note that any effort to recalibrate the H&H model should be performed after consultation with the Department. Clarify accordingly.

Section 7, Implementation Schedule

Comment 27: Section 7.1, Current Assets and Mission provides the following statement:

“The Authority owns all of the combined sewer infrastructure within both the Adams Street WWTP Service area and River Road WWTP service area...”

Similarly, Section 7.2, Financial Capability Assessment, includes the following information:

“The Authority's focus on both environmental stewardship and fiscal management has resulted in significant infrastructure investments over the years, substantial improvements in wastewater discharges and a significant debt burden. As noted previously in this report, the combined sewage capture rate in the Adams Street service area is 73% on a volumetric basis; this result reflects investments already made. The financing plan presented herein can focus further attention on the LTCP because of the state-of-good-repair improvements that have been previously been made to existing infrastructure. Recognizing its substantial historical capital improvements, the NHSA must be prudent in the timing of its future investments so as to maintain: 1) a sustainable amount of total debt, 2) a strong credit rating that enables it to efficiently borrow money, and 3) reasonable rates and charges for its customer base. The financing plan is intended to achieve this balance...”

It is unclear why this information is condensed for the entire North Hudson Sewerage Authority area as opposed to being broken down by specific municipality as served by the NHSA River Road STP namely Hoboken and parts of Weehawken, and Union City. To supplement this section the Department requests to see in table format in an Excel spreadsheet showing calculations, a year-by-year listing of (1) existing O&M costs and debt service; (2) CSO control program additional O&M costs, capital outlay and loan amounts, additional debt service and other additional costs; (3) current and projected wastewater treatment and CSO costs including residential share, number of households, cost per household; and (4) median

household income and resulting residential indicator. A review of the financial capability analysis can not be conducted until this information has been provided.

Comment 28: Regarding Table 7-7, Long Term Control Plan Implementation Schedule, Adams Street Wastewater Treatment Plant, provide a more detailed list of projects and steps for incorporation into the permit. For example, the steps included on page 3-3 regarding the construction sequence for the bypass system, should be incorporated into an implementation schedule. Steps should be most detailed for the period of the next five-year NJPDES permit renewal cycle. Provide projected end dates for the specific projects and a Gantt chart specific to Adams Street WWTP to indicate any overlap(s).

Comment 29: Table 7-7 includes the following projects as well as the projected start date:

- Integration of 1-MG Resiliency Park Storage Tank into NHSA Conveyance System – Phase 1 (2020);
- Integration of 1-MG Resiliency Park Storage Tank into NHSA Conveyance System – Phase 2 (2024);
- Integration of 1-MG Resiliency Park Storage Tank into NHSA Conveyance System – Phase 2 (2026);
- Construct New Adams Street WWTP Outfall (2027)
- Increase Capacity at Construct New Adams Street WWTP by 20 MGD through Side Stream Treatment (2030);
- Parallel 48-inch Park Avenue Siphon (2033);
- Increase Capacity of 5th Street Pump Station, Construct Force Main and Construct Parallel 11th Street Siphon (2036);
- Increase Capacity of 11th Street Pump Station (2039);
- Construct 2-MG Storage Tank (2042); and
- Construct 8-MG Storage Tank (2048)

Provide additional justification for the implementation schedule length. Describe any laws or legislation that constrains NHSA’s expenditures.

Comment 30: Section 8, Summary, includes the following:

“...The proposed program listed in this report apply under the specific conditions stated here and any deviations to the assumptions listed may result in a change in the overall result of implementation, cost, and scheduling.”

The Department acknowledges that changing conditions could support an Adaptive Management approach that could serve as a compliance “check in” as the projects proceed and an Adaptive Management requirement could be a component of a future NJPDES permit action. Adaptive Management could also allow flexibility from the perspective of treatment technology advancements and compliance provided the resultant percent capture requirement is attained. However, while flexibility can be a component of each five year permit cycle, the permittee is obligated to set forth a path for compliance with the Federal CSO Control Policy through measures set forth in the LTCP. Note that any changes to projects set forth in the NJPDES permit as part of the LTCP will require a NJPDES permit modification or renewal. While this comment does not necessitate a response at this time, the Department hereby notes this information for the Administrative Record.

Please incorporate these changes to the report and submit a revised version to the Department no later than 60 days from the date of this letter. Thank you for your continued cooperation.

Sincerely,

A handwritten signature in black ink on a light blue rectangular background. The signature appears to read "Joseph Mannick" in a cursive script.

Joseph Mannick
CSO Team Leader
Bureau of Surface Water & Pretreatment Permitting

C: Marzooq Alebus, Bureau of Surface Water & Pretreatment Permitting
Dianne Crilly, Office of Economic Analysis
Susan Rosenwinkel, Bureau of Surface Water & Pretreatment Permitting
Dwayne Kobesky, Bureau of Surface Water & Pretreatment Permitting
Brian Salvo, Bureau of Surface Water & Pretreatment Permitting
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Stephen Seeberger, Bureau of Surface Water & Pretreatment Permitting