



State of New Jersey

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May 10, 2021

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Re: Review of Selection and Implementation of Alternatives of the Long Term Control Planning for Combined Sewer Systems – Regional Report
North Bergen Municipal Utilities Authority – Woodcliff STP, NJPDES Permit No. NJ0029084
Town of Guttenberg, NJPDES Permit No. NJ0108715

Dear Permittees:

Thank you for the timely submission dated September 2020 entitled: “Selection and Implementation of Alternatives of the Long Term Control Planning for Combined Sewer Systems – Regional Report” (Regional Report) as submitted to the New Jersey Department of Environmental Protection (the Department or NJDEP) which includes Appendix A (Selection and Implementation of Alternatives Report for North Bergen MUA (Woodcliff)); Appendix B (Selection and Implementation of Alternatives Report for Town of Guttenberg); Appendix I (Final Financial Capability Assessment for North Bergen MUA – Woodcliff Service Area); and Appendix J (Final Financial Capability Assessment for the Town of Guttenberg). These reports were submitted in response to Part IV.D.3.b.vi of the above referenced New Jersey Pollutant Discharge Elimination System (NJPDES) permit and constitutes the Selection and Implementation of Alternatives Report (SIAR) for the Long Term Control Plan (LTCP). The Regional Report serves to comply with the 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 June 2018 “System Characterization Report” (approved by the Department on April 12, 2019); the June 30, 2018 “NJCSO Group Compliance Monitoring Program Report” (approved by the Department on March 1, 2019); the June 2018 “Public Participation Process Report” (approved by the Department on March 29, 2019); the June 2018 “Identification of Sensitive Areas Report” (approved by the Department on April 8, 2019) and the June 2019 Development and Evaluation of Alternatives Regional Report (DEAR) (approved by the Department on January 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:

Executive Summary

Comments below are organized by report section where the majority of the specific subject matter is discussed. Revisions to the Executive Summary may be required as a result of comments on specific sections of the report.

Comment 1: Section ES.3, Approach includes the following statement:

“The CSO Policy also states that “In addition to considering sensitive areas, the long-term control plan should adopt either the Presumption Approach or the Demonstration Approach.” Both municipalities elected for the Presumption Approach. Under this approach, CSO controls are presumed to protect the water quality based requirements of the CWA if at least 85% of the combined sewage collected in the CSS during precipitation events is captured, provided the permitting authority determines that such presumption is reasonable based upon the data and analyses conducted for characterization, monitoring and modeling of the collection system as well as the consideration of sensitive areas.

The proposed LTCP meets the presumptive 85% level of control, based on hydrologic and hydraulic (H&H) modeling of a typical year per USEPA guidelines...”

As noted within the LTCP in this section as well as later in Section B.3 and H.3.7, the permittees have selected the Presumption 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 2015 NJPDES CSO permit requires selection of either the Presumption Approach or the Demonstration Approach. The Department acknowledges that the permittees have selected the Presumption Approach with a targeted goal of 92% which exceeds the minimum requirement of the Presumption Approach as shown above.

Comment 2: Section ES.7, Recommended Long Term Control Plan includes the following table:

Table ES-1: Woodcliff Regional Selected LTCP CSO Control Technologies

NBMUA and Town of Guttenberg Regional Alternative	
Description	% Capture
Expansion of Woodcliff Sewage Treatment Plant	92%
I/I Reduction	89%
Galaxy Towers Storm Water Separation	89%
Galaxy Towers Sanitary Sewer Separation	89%
Upgrades at Netting Chamber	-
Green Infrastructure: Green Roofs	89%
Green Infrastructure: Planter Boxes	89%

Please reconfigure Table ES-1 to show the beginning baseline percent capture along with additional rows to show increasing levels of percent capture based on the order of projects as displayed later in Table ES-2.

Section A, Introduction and Background

Comment 3: Section A.2, Title of Plan and Approval includes a signature page for Marc Ferko of the Office of Quality Assurance. Note that the Office of Quality Assurance is not required to sign off on this LTCP and this should be removed from Section A.2 as well as from Section A.4.

Comment 4: Part IV.D.1.b of the 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”.

The Department acknowledges that a modified version of the above referenced certification statement is included in the report, consistent with the version utilized in other previous reports, and that the statement has been signed by representatives for both permittees. These certification statements are acceptable to the Department.

Comment 5: Section A.8, LTCP Planning Approach states the following regarding the upcoming operational plan:

“...The operational plan and compliance monitoring program required by the Permit as part of the LTCP are to be developed upon NJDEP approval of the LTCP in accordance with the Permits.”

Please note that 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, please acknowledge that an operational plan will be prepared for the operation and maintenance of green infrastructure.

Regarding the reference to the Compliance Monitoring Program, note that the compliance monitoring program was conducted to determine a baseline condition; as well as to be used during and after LTCP implementation as stipulated in NJPDES permit condition Part IV.G.9. Please refer to the approval letter dated March 1, 2019 for additional information.

Section C, Existing Conditions

Comment 6: Section C.1.2, NBMUA Woodcliff STP NJPDES Permit Requirements includes the following statement is included in relation to bypass:

“The Woodcliff STP [Sewage Treatment Plant] is currently undergoing an upgrade to the facilities. As a result of this upgrade, NBMUA has submitted a request to NJDEP to update the existing permit conditions specifically re-rating of the Woodcliff STP permitted capacity. The NJDEP is considering this modification to the existing permit (subsequently modified in 2015) to incorporate requirements for an expanded average monthly flow of 3.46 million gallons per day (MGD) (Final Construction Phase) from the current flow of 2.91 MGD (Initial Construction Phase). The permittee has submitted a No Feasible Alternatives (NFA) analysis to the NJDEP, and NJDEP has subsequently approved, for the use of an interim bypass line to accept additional wet weather flow if allowed by a Treatment Works Approval.”

The Department is aware that the Woodcliff STP operates with a current rated capacity of 2.91 million gallons per day (MGD) and a wet weather capacity of 8 MGD. As noted in this excerpt, the plant is being upgraded to replace the secondary Lamella clarifiers with a membrane filtration system. The new membrane system will be sized to allow expansion of the STP for a dry weather flow of 3.46 MGD; however, the addition of 2 MGD of wet weather capacity as CSO-related interim bypass will bring total wet weather capacity from 8 MGD to 10 MGD.

The Department issued a final major NJPDES permit modification on January 22, 2018 to increase capacity including an interim bypass line as a future permit phase with no relaxation of existing effluent limitations. The future phase specifies a dry weather flow of 3.46 MGD and a 10 MGD wet weather capacity where operations of the future phase are conditioned on a variety of factors including a TWA. This permit modification also requires flow metering at the influent to the treatment works as well as on the bypass line to track flow trends as CSO related improvements progress. As part of that permit modification, the Department acknowledged that the permittee addressed the bypass regulations at 40 CFR 122.41(m)(4)(i)includo. Please address these same criteria within the LTCP so that the Department can incorporate a final finding regarding the bypass line as part of the final LTCP determination. In addition, please provide an update on the treatment plant upgrades including the timeframe for completion of construction and when the plant will be fully operational.

Comment 7: Section C.3.2, System Characterization Report includes the following statement is included to describe the System Characterization Report:

“...The SCR was submitted to the NJDEP on behalf of the Permittees on January 24, 2019. The NJDEP provided comments on February 27, 2019, and ultimately approved the SCR on April 18, 2019...”

Please note that the Department approved the SCR on April 12, 2019, not April 18, 2019. This date is correctly referenced on page 22 earlier in item 3 of Section A.8.

Comment 8: Section C.3.3, Receiving Water Characterization includes the following regarding Pollutants of Concern:

“Three Pollutants of Concern (POC) were determined to apply to the Woodcliff – Guttenberg Service Area’s receiving water. These three POC are parameters typically associated with CSO discharges. The NJDEP determined POC for the Hudson River relative to the NBMUA (Woodcliff) and Guttenberg CSO discharges are Fecal Coliform, Escherichia coli (E. coli) and Enterococcus.”

The Department agrees that pathogens are intended to serve as an indicator parameter for CSOs as stated in RESPONSE 199 of Section B of the March 12, 2015 Response to Comments document for the existing NJPDES CSO permit. Given that the CSOs discharge to the Hudson River, E. Coli is not relevant since it is applicable to fresh waters. Please revise.

Section D, Screening of CSO Control Technologies

Comment 9: Section D.2, Screening of Control Technologies includes the following information regarding Implementation and Operation Factors is included under “Street Parking Lot Storage (Catch Basin Control)”:

“Flow restrictions to the CSS [combined sewer system] can cause flooding in lots, yards and buildings, potential for freezing in lots, low operational cost. Effective at reducing peak flows during wet weather events but can cause dangerous conditions for the public if pedestrian areas freeze during flooding.”

Please clarify if this is related to CSO flooding that is occurring in the NBMUA Guttenberg Service Area. If it is related to flooding in the NBMUA Guttenberg Service Area, please describe the areas prone to flooding and explain if this flooding is strictly related to sewer backups, stormwater flooding or tidal inundation. Flooding of combined sewage in streets is a public health concern and is not acceptable. The LTCP must address the elimination of street flooding where this should be the utmost priority.

Section F, Pollutant Loads and Predicted Water Quality

Comment 10: Section F.2.3, H&H Model of Regional Alternatives states:

“.... The estimated percent capture for the typical year is approximately 89.8% for the baseline conditions. The percent capture is presented below in **Table F-2.**”

Table F-2: Typical Year % Capture

	Woodcliff STP
Total WWF Volume (MG)	229
Total CSO Volume (MG)	25
% Capture	89.8%

Note that 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. While this table represents the baseline,

please provide a description and justification for the changes in baseline percent capture in the Development and Evaluation of Alternatives report through a separate section of the report including the equation utilized. As a result, supplement this report with a detailed table of the numerical values utilized within the equation that was used to derive these results. In addition, please supplement this report with flow data to document the relative contribution of flows from North Bergen and Guttenberg to the Woodcliff STP including at least one year of flow metering data to document these contributions as shown in Figure A-2 here:

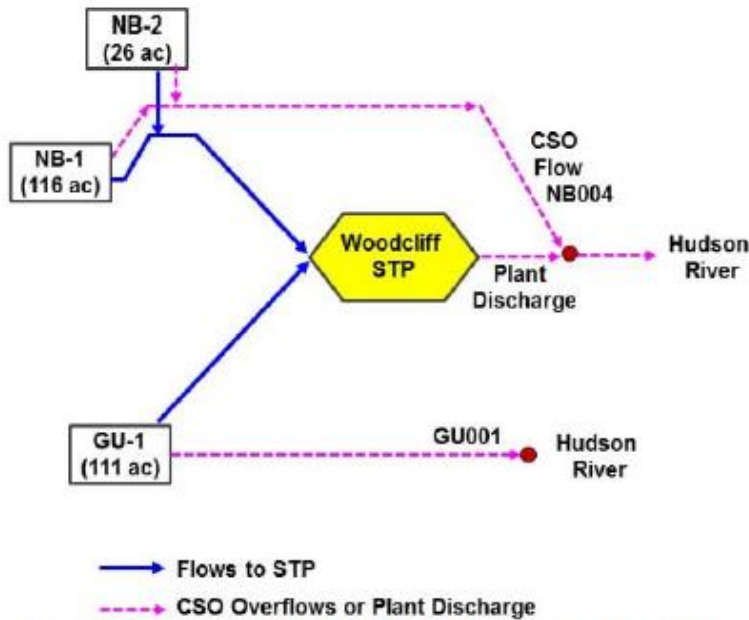


Figure A-2: Flow Schematic of the Woodcliff – Guttenberg Service Area CSS

Approval of this report hinges in part on the inputs and results of this equation being clearly demonstrated and reproducible. Finally, clarify that the above referenced values include only combined sewer areas and do not include separate sewers.

Comment 11: In Section F.3.1.1., Baseline Attainment the summary of the factors utilized in the selection of the typical year should be consistent with the approved Typical Year report where river flow was subsequently eliminated from the factors. Please revise.

Comment 12: Section F.3.1.3, Projection Analysis discusses attainment and non-attainment of water quality standards as part of a gap analysis including the use of a 100% CSO Control scenario. Relevant excerpts are as follows:

“If CSOs were the primary reason for non-attainment of water quality criteria, then some level of CSO control between baseline conditions and 100% control could conceivably result in attainment of the criteria. This level of CSO control would close the gap between attainment and non-attainment of water quality criteria. In many cases, other sources of bacteria, such as stormwater, are large enough that even 100% CSO control is not enough to meet criteria. In this case the 100% CSO Control scenario shows the highest level of water quality that can be achieved by CSO control only, and additional control scenarios can be analyzed that can be incorporated into a cost-benefit analysis.”

Similarly, the following is also stated pertaining to this issue:

“The 100% CSO Control scenario was run for the receiving waters with results organized by the classification of the surface water as established under the Surface Water Quality Standards (SWQS), N.J.A.C. 7:9B. NJDEP classifies freshwaters as FW1 waters (not subject to any manmade wastewater discharges) and FW2 waters (all other freshwaters except Pinelands waters). Saline waters are classified as saline estuarine (SE) and saline coastal (SC). SE waters are further classified as SE1, SE2, and SE3 waters based on their ability to support recreation, shellfish harvesting and warm water fish species.

Two Hudson River Assessment Units (02030101170010-01, 02030101170030-01) along the Hudson River, an SE2 waterbody corresponding to the Woodcliff STP, both show 100% attainment in baseline and the 100% CSO Control scenario. The full details of the modeling results can be found in the Calibration and Validation of the PWQM for the Passaic Valley Sewerage Commission in **Appendix G.**”

Review of the Calibration and Validation of the Pathogen Water Quality Model (PWQM) for the Passaic Valley Sewerage Commission (see Appendix G), as submitted September 29, 2020 is still pending; therefore, it is premature to draw conclusions within the LTCP regarding the PWQM model. In addition, as described in the Department’s March 1, 2019 letter regarding the Compliance Monitoring Program, the Department articulated concern regarding the fact that the rainfall totals for the sampling period of April 17, 2016 to April 28, 2017 were below normal conditions and that roughly half the data had qualifiers. However, the primary goal of the baseline monitoring is to provide a snapshot to characterize the water quality conditions in the NY/NJ Harbor Area to represent baseline and existing conditions. As a result, despite the limitations to the wet weather data set, the Department found that the recent data collection effort, in concert with the ongoing New Jersey Harbor Dischargers Group Monitoring Network, provided sufficient information for the purposes of data characterization for baseline and existing conditions and the Compliance Monitoring Program was approved. However, regarding the above excerpts, the Department disagrees with the statement that an analysis can be conducted regarding the attainment against water quality standards given available data. In fact, this is stated on page 35 of the Compliance Monitoring Program report as follows:

“The [Baseline Compliance Monitoring Program] BCMP was not designed to provide an adequate data volume for assessing attainment of water quality standards, which would have required five samples per month at each sampling location to compute monthly geometric means.”

Based on the above, revise the statement regarding CSO discharges and the attainment against water quality standards. See also Comment 14.

Section G, Public Participation

Comment 13: Section G.2.2, NJCSO Group Meetings states the following:

“The NJCSO Group was originally formed to work cooperatively to fulfill the requirements of the last CSO General Permit. NJCSO Group Permittees and their NJPDES Permit Numbers are listed in the Public Participation Report in **Appendix E**...”

Meetings with the NJCSO Group are generally held on a quarterly basis. The various topics that were discussed at the meetings are provided in the Public Participation Report...”

It is further stated later in Section H.4.4, Non-Monetary Factors:

“Public input is a significant factor in the development of the LTCP and was continuously solicited during the review of technologies through the implementation of the LTCP Public Participation Plan

(PPP), as described in Section G. For instance, additional consideration was given to green infrastructure based on the high level of expressed public interest. Based on high public interest in green infrastructure, additional projects have been evaluated for LTCP implementation.”

Public participation is a required component of the existing NJPDES CSO permit and was included to inform the selection of CSO control alternatives. Future public participation could include three primary goals: inform, educate and engage. The Department is evaluating this issue and is in the process of preparing updated permit language to advance this issue for the next permit renewal. Note also the inclusion of “Error! Reference source not found” in Section G.2.2 which should be corrected.

Section H, Selection of Recommended LTCP

Comment 14: Section H.4.3, Ability to Meet Water Quality Standards states the following:

“Based upon the findings of previous studies and reports submitted and approved by NJDEP (including the System Characterization Report, the Receiving Water Quality Modeling Report and the Baseline Compliance Monitoring Program Report, among other), the CSO discharges are not precluding the attainment of water quality standards on the Hudson River under baseline conditions.”

As described in Comment 16 and as stated on page 35 of the Compliance Monitoring Program report, the BCMP was not designed to provide an adequate data volume for assessing attainment of water quality standards. As a result, revise the statement that the CSO discharges are not precluding the attainment of water quality standards on the Hudson River under baseline conditions.

Comment 15: Section H.5, Description of Recommended LTCP states the following:

“The primary element of the regional LTCP is the upgrade to the Woodcliff STP to expand its current dry capacity of 2.91 MGD to 3.56 MGD and its wet weather capacities of 8 MGD to 10 MGD...”

Please provide an update on the current and planned schedule for construction project for the NBMUA Woodcliff STP including the projected completion date. In addition, it appears that the reference to 3.56 MGD is in error. Finally, regarding the reference to financial “capacity” analysis appears to be in error where “capability” was intended. Please correct.

Additionally, 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 CSO control alternatives 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.

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

Comment 16: The following is stated in Section H.4.5 includes the following table:

Table H-1: Comparison of the Presumption Approach and Demonstration Approach

Item	Presumption Approach	Demonstration Approach
Criteria	<ul style="list-style-type: none"> Meet one of three criteria and compliance is presumed: <ol style="list-style-type: none"> No more than an average of 4 overflow events per year; 85% capture (by volume) Elimination or removal of the mass of pollutants, identified as causing water quality impairment. 	<ul style="list-style-type: none"> Number of CSO events, flow or pollutant loading limited by a proposed CSO system Waste Load Allocation which will not preclude the attainment of Water Quality Standards (WQS). Relies on data collection and model simulation to demonstrate that the proposed LTCP results in meeting the current WQS and designated uses.
Monitoring Data Collection	<ul style="list-style-type: none"> Flow metering of the collection system and/or water quality sampling of CSOs. 	<ul style="list-style-type: none"> Flow metering of the collection system and water quality sampling of CSOs and receiving water bodies.
Modeling	<ul style="list-style-type: none"> Combined sewer system (CSS) hydrologic and hydraulic (H&H) model. 	<ul style="list-style-type: none"> CSS H&H Model and Receiving Water Quality Model(s).
Pollutant Sources Evaluated	<ul style="list-style-type: none"> Only CSOs. 	<ul style="list-style-type: none"> The contributing pollutant sources in the watershed including urban stormwater, agricultural (if any), wildlife, etc.

The above table implies that water quality sampling of CSOs and receiving waterbodies is only required for the Demonstration Approach. Please note that the collection of ambient data under the Compliance Monitoring Program is required as per Part IV.G.9 of the NJPDES permit. Specifically, 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. Note that the monitoring locations, sampling frequency and the extent of monitoring of the PVSC Supplemental Monitoring Network were designed for the purpose of developing a receiving water model to address the following objectives:

1. Assess attainment of water quality standards
2. Define the baseline conditions in the receiving water
3. Assess the relative impacts of CSOs
4. Gain sufficient understanding of the receiving water to support evaluation of proposed CSO control alternatives
5. Support the review and revision, as appropriate, of water quality standards.

In addition, as stated in Part IV.G.9.c of the NJPDES CSO permit:

“c. The above monitoring must be completed for the baseline CMP Report and then at intervals as determined by the Department based on the implementation schedule in the approved LTCP but no less than once per permit cycle...”

This monitoring will be utilized in addition to other tools and measures that will be outlined in the next NJPDES CSO permit renewal in order to track compliance as CSO measures are incorporated. While a response to this comment is not required, the Department wishes to note that the regional ambient monitoring effort must ensure compliance with these permit conditions.

Section I, Financial Capability

Comment 17: Section I.3.1, Current Baseline Conditions states the following:

“PVSC has developed a time-based model that calculates annual costs and revenue requirements based on assumed program costs, schedules and economic variables such as interest and inflation rates. The residential indicator is calculated for each year based upon the costs per typical residential users which changes annually based on the annual system revenue requirements.”

It is duly noted that a time-based model has been developed that calculates annual costs and revenue requirements based on assumed program costs, schedules and economic variables such as interest and inflation rates. However, the interest and inflation rates need clarification. In this regard, 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. In addition, clarify the interest rates and inflation rates that were utilized. A review of the financial capability analysis cannot be conducted until a review of this information is provided.

Section J, Recommended Long Term Control Plan

Comment 18: Section J.5, Implementation Schedule includes Table J-2 as follows:

Table J-2: Long-Term CSO Control Plan Schedule

Year	Municipality	Milestone	Cost
2020	Guttenberg	I/I Reduction (Project #1)	\$300,000
2021	NBMUA and Guttenberg	Expansion of the NBMUA Woodcliff Sewage Treatment Plant	\$23,000,000 ¹
	Guttenberg	Galaxy Towers Storm Water Separation	\$400,000 ²
	Guttenberg	I/I Reduction (Project #2)	\$300,000
2022	Guttenberg	Upgrades at Netting Chamber	\$125,000
	Guttenberg	I/I Reduction (Project #3)	\$300,000
2023	Guttenberg	I/I Reduction (Project #4)	\$300,000
	Guttenberg	Galaxy Towers Sanitary Sewer Separation	\$500,000
2024	Guttenberg	I/I Reduction (Project #5)	\$300,000
2025	Guttenberg	Green Roof Ordinance for High-Rises	See Note 3
	Guttenberg	Green Infrastructure: Planter Boxes (Year 1 of 5)	\$20,000
2026	Guttenberg	Green Infrastructure: Planter Boxes (Year 2 of 5)	\$20,000
	NBMUA	Green Infrastructure: Project 1	\$217,500
2027	Guttenberg	Green Infrastructure: Planter Boxes (Year 3 of 5)	\$20,000
2028	Guttenberg	Green Infrastructure: Planter Boxes (Year 4 of 5)	\$20,000
2029	Guttenberg	Green Infrastructure: Planter Boxes (Year 5 of 5)	\$20,000
2031	NBMUA	Green Infrastructure: Project 2	\$217,500

¹ \$23,000,000 represents the approximate capital cost opinion of the construction, which is being financed by NBMUA and passed on to Guttenberg via rate increases. The portion for wet weather improvements will cost approximately \$4,600,000.

² The project will be undertaken and financed by Galaxy Towers and the timing is approximate

³ New zoning ordinance incentivizing green roofs in newly zoned high-rise areas.

The Department agrees with the permittee’s statement in Section J.8 that “The LTCP elements are scheduled so that the higher-impact projects come earlier in the process, maximizing the total CSO volume captured over the ten-year implementation schedule.” This is evidenced by Figure J-1:

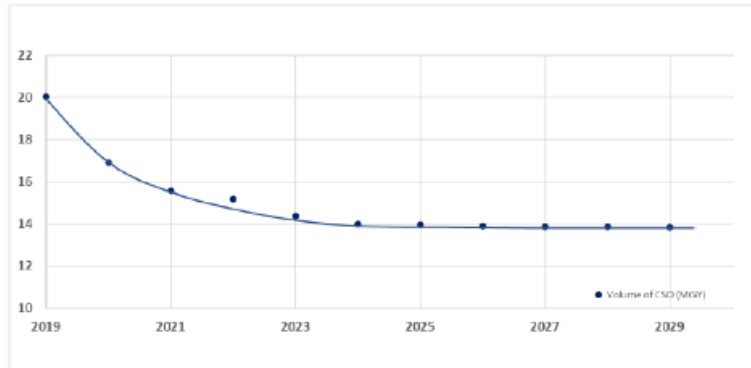


Figure J-1: Reduction of CSO Volume (MGY)

The Department also acknowledges the front loaded nature of the LTCP and concurs that projects with the most benefit for increasing wet weather capture should be prioritized. Specifically, the Department maintains that the treatment plant upgrades including the bypass should continue to be constructed and implemented as quickly as possible. Note that once the LTCP is in an approvable format, the Department intends to include a project schedule in the next NJPDES permit. To supplement this section, provide a Gantt chart to show the project order, length and any overlap that can easily be incorporated into your renewal NJPDES CSO permit. In addition, please revisit the project elements for green infrastructure to see if any projects can be rescheduled for the short term.

Comment 19: Section J.7, CSO Reduction Versus Time states the following:

“Taken together, the elements of the LTCP will reduce the volume of CSO events in Guttenberg by approximately 30%, and the number of events by approximately 25% over baseline conditions...”

It is unclear why it is stated that the volume of CSO events will only impact the Guttenberg outfall (GU-001) with no reference to the North Bergen outfall (NB-004). Please clarify. In addition, provide a table to show the baseline CSO volume and frequencies as well as projected future volumes and frequencies as projects progress by outfall.

Comment 20: Section J.8, Performance Criteria states the following:

“Upon completion of the CSO projects described in Subsection J.2, post-construction monitoring to evaluate the incremental reduction in overflow rates and volumes as CSO Control facilities are placed into operation. For the selected presumption approach, the National CSO Policy and the NJPDES Permit require an 85% wet weather capture on an annual system wide basis for the Typical Year. Wet weather capture will be determined on a system wide basis using an updated H&H model that will be calibrated using post construction monitoring data and evaluated over the model Typical Year, which has been previously approved by the NJDEP. This is the performance criteria that will be used for the LTCP capital projects.”

The Department acknowledges that the permittees have selected the Presumption Approach with a targeted goal of 92% which exceeds the minimum requirement of the Presumption Approach as shown above. Given that the most significant reductions in percent capture will likely occur prior to 2026 (Figure J-1), the next NJPDES permit may require a rerun of the H&H model at this time to verify any estimated percent capture calculations to provide an assessment of compliance for wet weather capture. However, note that any effort to recalibrate the H&H model should be performed after consultation with the Department. Please revise.

Section K, Post-Construction Compliance Monitoring Program

Comment 21: Section K.6.1, Approach states the following:

“NBMUA and Guttenberg will evaluate the performance of the CSO control measures through the use of its H&H model. The following steps will be used to determine compliance with the Performance Criteria:

1. Collect flow monitoring and rainfall data during post-construction monitoring period of each phase of CSO control measures. Perform QA/QC on the data.
2. Once every five years, update the H&H model to include all completed CSO control measures and any other modifications to the CSS since the H&H model was calibrated for this LTCP.
3. Recalibrate and/or validate the updated H&H model, if needed, using the flow and rainfall data collected during the 12-month post-construction monitoring period.
4. Perform continuous simulation using the updated H&H model for the typical year and calculate percent capture for verification of compliance with the 85% capture requirements of the Presumption Approach.”

Regarding item 1, In order to assess trends associated with the effects of climate change, the Department is evaluating a requirement to install flow meters at certain CSO regulators or outfalls to assess CSO trends over time in the next NJPDES permit for this facility 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 regulators or outfalls could also be a requirement to determine if additional CSO reductions are necessary in order to demonstrate compliance with the 92% target to help inform future model runs.

Regarding item 3, given that significant reductions in percent capture will likely occur prior to 2026, the next NJPDES permit may require a rerun of the H&H model at this time to verify any estimated percent capture calculations as part of Adaptive Management to provide an assessment of compliance against 85% wet weather capture.

Comment 22: Section K.6.2, Adaptive Management Plan states the following:

“NBMUA and Guttenberg are confident that the CSO control measures implemented prior to the final 2031 post construction monitoring period will meet the 85% wet weather capture percentage Performance Criteria based on the simulation of the Typical Year (2004). However, should the post construction monitoring suggest the CSO control measures exceed the performance criteria or do not perform as anticipated, performance factors and deficiencies responsible for this exceedance or shortfall will be identified. Modified, reduced, or additional control measures will then be implemented to allow NBMUA and/or Guttenberg to meet the 85% Performance Criteria. An Adaptive Management Plan shall be developed that details this analysis, including the implementation plan and schedule of the additional controls. This Adaptive Management Plan will include any adaptive management modification based on Post-Construction Monitoring and evaluation. The Adaptive Management Plan shall be submitted to NJDEP as part of each PCCMP Reports for each of the 5-year monitoring periods. Generally, these 5-year reports are meant to coincide with the renewal of each NJPDES Permit, such that any required adaptive actions could then be included in the NJPDES Permit renewal, as applicable...”

Based on the above excerpt, it appears that the term post construction monitoring as part of adaptive management is intended to mean monitoring to assess whether or not 92% capture is being attained and will largely focus on tracking and achieving percent capture goals. An Adaptive Management approach could serve as a compliance “check in” as the projects proceed and an Adaptive Management requirement could be a component of the next NJPDES permit renewal. The Department agrees that 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 while setting the schedule for 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.

Section L, Revision of Operation and Maintenance Plans

Comment 23: Section L.4, Staffing Needs states the following:

“...O&M costs of approximately \$5k/year are assumed for the planter boxes once all have been installed. Planter box O&M work will be performed by existing Town of Guttenberg Department of Public Works employees.”

The Department acknowledges and appreciates the foresight regarding O&M for GI practices and agrees that maintenance of these GI features must be included in any forthcoming O&M plan. 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. Please address.

Appendix A – Selection and Implementation of Alternatives Report for North Bergen MUA (Woodcliff)

Comment 24: Section C.1, Development and Evaluation of Alternatives states the following:

“A previous study, “Green Infrastructure Feasibility Study, North Bergen,” prepared by Rutgers University, identified possible locations for GI opportunities in the City. The realistic potentials of GI approaches will be further refined. The following are some considerations:

- 1 North Bergen Public Library - This site is a branch of the North Bergen Free Public Library. The asphalt parking lot is in fair condition and could be repaved with porous asphalt to retain stormwater on site. A strip of porous pavement/sidewalk or stormwater planter may also be used to intercept parking lot runoff before it reaches the street and catch basins. Empty tree pits across the street could be planted with trees and retrofitted with stormwater storage capacity underground.
- 2 James J. Braddock Park - This is a large Hudson County park. There are many opportunities for green infrastructure in Washington Park, including rain gardens, bioswales, buffers, tree pits, and pervious pavement. Rain gardens, bioswales, and landscaped buffers placed adjacent to sidewalks and roadways could intercept stormwater runoff, slow erosion and ponding, and beautify open lawn areas. Most of the pavement in the park is in fair condition, and as older sections are replaced, they could be repaved with pervious pavers or porous asphalt.

3 Municipal Parking Lots - Several sites, such as Broadway and 73rd Street, are designated municipal parking lots. They serve as great opportunities for porous asphalt to capture both stormwater runoff and rainwater.

These sites are very visible to the public and would be constant reminders of the importance of controlling stormwater and limiting CSOs.”

As noted in Comment 18, please revisit the schedule for GI for North Bergen and consider inclusion of these projects in consultation with the public.

Appendix B – Selection and Implementation of Alternatives Report for Town of Guttenberg

Comment 25: Section A, Introduction states the following:

“It should be noted that while the Woodcliff facility treats flow from both North Bergen and Guttenberg, the two municipal systems are being considered as hydraulically separate systems for purposes of this Report. This separation can be justified by the fact that Guttenberg’s flow enters the Woodcliff plant via a separate, dedicated regulator, and the CSO outfall from that regulator conveys flow from Guttenberg only. As such, CSO controls enacted by one municipality do not impact the overflows from the other (with the exception of treatment plant expansion, which will be discussed later in this Report).”

The reference to two hydraulically connected systems is unclear. Please clarify.

Appendix I – Final Financial Capability Assessment for North Bergen MUA – Woodcliff Service Area

Comment 26: Regarding Section 1.0, Executive Summary, provide additional detail as to how the median household income (MHI) value of \$59,600 for 2019 was determined as shown in Table E-1, “Projected Impacts of CSO Controls at a Glance”. Table 3-5 as entitled “Affordability Model Key Inputs and Assumptions” indicates the MHI for North Bergen is \$57,300 (2015) based on the American Community Survey from 2013 to 2017. Using the United States median household income increase of 1.6% annually from 1999 through 2013 (Appendix I, page 4), the 2015 MHI computes to \$61,056 in 2019. In addition, Table 3-2 lists the “current” number of households per average income bracket where a weighted average computes to \$145,122. In comparison a simple inflation calculation computes the \$57,300 (2015 MHI) to \$59,600 (2019 MHI) increase using a 1.0% inflation rate. Please clarify.

Also, regarding Section 1.0, provide additional detail as to how the projected MHI value of \$92,300 for 2041 was determined. For example, a simple inflation calculation computes this 2041 MHI using a 2% inflation rate.

Finally, provide additional detail as to how the annual wastewater cost per household of \$557 in 2019 increases to \$1231 (without the LTCP costs) and \$1280 (with the LTCP costs) in 2041. Specifically, page 4 states that the U.S. cost for typical household wastewater services increased at a rate of 4.8% from 1999 through 2013. Table 3-5, as entitled “Affordability Model Key Inputs and Assumptions” assumes 4.0% LTCP O&M inflation and 3.7% LTCP construction inflation plus a blended bond term interest rate of 1.5%. Note that a simple computation to get from \$557 to \$1,231 (without the LTCP costs) results in an annual inflation rate of 3.7%. Similarly, to get from \$557 to \$1,280 (with LTCP costs) results in an annual inflation rate of 3.9%. Please clarify.

Appendix J – Final Financial Capability Assessment for Town of Guttenberg

Comment 27: Regarding Section 1.0, Executive Summary, provide additional detail as to how the median household income (MHI) value of \$59,100 for 2019 was determined as shown in Table E-1, “Projected Impacts of CSO Controls at a Glance”. Table 3-5 as entitled “Affordability Model Key Inputs and Assumptions” indicates the MHI for North Bergen is \$54,471 (2015) based on the American Community Survey from 2013 to 2017. Using the United States median household income increase of 1.6% annually from 1999 through 2013 (Appendix J, page 4), the 2015 MHI computes to \$58,042 in 2019. In addition, Table 3-2 lists the “current” number of households per average income bracket where a weighted average computes to \$168,786. In comparison a simple inflation calculation computes the \$54,471 (2015 MHI) to \$59,100 (2019 MHI) increase using a 2.0% inflation rate. Please clarify.

Also, regarding Section 1.0, provide additional detail as to how the median household income (MHI) value of \$71,632 for 2030 was determined.

Finally, provide additional detail as to how the annual wastewater cost per household of \$535 in 2019 increased to \$1065 (without the LTCP costs) and \$1118 (with the LTCP costs) in 2041. Specifically, page 4 states that the U.S. cost for typical household wastewater services increased at a rate of 4.8% from 1999 through 2013. Table 3-5, as entitled “Affordability Model Key Inputs and Assumptions” assumes 3.9% LTCP O&M inflation and 3.7% LTCP construction inflation plus a blended bond term interest rate of 1.5%. Note that a simple computation to get from \$535 to \$1,065 (without the LTCP costs) results in an annual inflation rate of 2.98% or 3.07% (depending on the whether the \$350 annual increase starts in 2021 or 2022). Finally, Table 3-4 shows that LTCP implementation increases residential wastewater costs \$47 on an annual basis. Using the same inflation rates computed above (3.07%), this \$47 would be added to the household wastewater costs beginning in 2026 in order to get to \$1,118 in 2030 (with the LTCP). Please clarify.

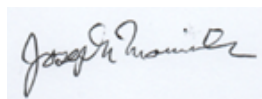
Comment 28: Section 3.2, Affordability Impacts of the Selected CSO Control Alternatives includes Table 3-4 where two of the reported Residential Indicators do not compute correctly:

- Baseline (2019) annual cost \$535 / MHI \$59,100 = 0.91% ~ 0.90% in table OK
- No LTCP with inflation (2030) cost \$1,065 / MHI \$71,632 = 1.49% ~ 1.5% in table OK
- No LTCP without inflation (2030) cost \$785 / MHI \$59,100 = 1.33% ~ 1.4% in table X
- LTCP with inflation (2030) cost \$1,118 / MHI \$71,632 = 1.56% ~ 1.6% in table OK
- LTCP without inflation (2030) cost \$832 / MHI \$59,100 = 1.41% ~ 1.6% in table X

Meanwhile the 4th bullet point under key points from Table 3-4 (Appendix J, page 7) states “Excluding inflation, the projected cost per typical single family user with the CSO controls would be around \$582 in 2030, a RI or 1.5%.” Please describe what this is referring to.

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,



Joseph Mannick
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Bureau of Surface Water & Pretreatment Permitting

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