



State of New Jersey

PHIL MURPHY
Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Mail Code – 401-02B
Water Pollution Management Element
Bureau of Surface Water & Pretreatment Permitting
P.O. Box 420 – 401 E State St
Trenton, NJ 08625-0420
Phone: (609) 292-4860 / Fax: (609) 984-7938

SHAWN M. LATOURETTE
Acting Commissioner

SHEILA OLIVER
Lt. Governor

Via E-mail
June 11, 2021

Frank Pestana, Executive Director
North Bergen Municipal Utilities Authority
6200 Tonnelle Avenue
North Bergen, NJ 07047

Re: Review of Selection and Implementation of Alternatives Report for the Township of North Bergen – Central Drainage Area – Appendix M
North Bergen Municipal Utilities Authority, NJPDES Permit No. NJ0108898

Dear Mr. Pestana:

Thank you for your submission dated September 2020 entitled “Review of Selection and Implementation of Alternatives Report for the Township of North Bergen – Central Drainage Area”, as submitted, in a timely manner, to the New Jersey Department of Environmental Protection (the Department).

This report was submitted by the Passaic Valley Sewerage Commission (PVSC) on behalf of the Township of North Bergen as “Appendix M” in the “Selection and Implementation of Alternatives for Long Term Control Planning for Combined Sewer Systems – Regional Report” (Regional Report), where it was prepared in accordance with Part IV.D.3.b.vi of the above referenced New Jersey Pollutant Discharge Elimination System (NJPDES) permit. The Regional Report serves to comply with the Long-Term Control Plan (LTCP) submittal requirements as due on October 1, 2020.

The Regional Report presents a “Regional Alternative” for all PVSC’s combined sewer communities as well as a “Municipal Alternative” which is shown in the individual appendices for each of its eight (8) member combined sewer municipalities. This subject letter serves to provide a response to Appendix M which is specific to the Township of North Bergen whereas a response to the Regional Report is provided under separate cover.

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 17, 2020).

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

Section A, Introduction

Comment 1: Section A.1, Introduction, states the following

“In consistency with the 1994 USEPA’s CSO Control Policy, the NJPDES permit requires implementation of CSO controls through development of a Long-Term Control Plan (LTCP). The permit includes an option to cooperatively develop the LTCP with PVSC and its hydraulically connected CSO permittees. This option has been selected. Each permittee is required to develop all necessary information for their portion of the hydraulically connected system they own and operate. This report presents the LTCP for North Bergen.”

The Department acknowledges that NBMUA has selected the regional approach (Table ES-1 from the Regional Report) yet has prepared this report detailing the municipal approach to document a method for 85% capture to be attained within the boundaries of North Bergen. The Department also acknowledges that the municipal approach and the regional approach do differ in the selection of alternatives

In order to ensure that all nine components of the LTCP within this specific appendix are addressed for compliance purposes as well as to promote ease of understanding for public review, supplement this section or Section D with a chart of each of the LTCP elements included in Part IV.G of the NJPDES CSO permit along with the identification of the specific section of another report. Below is a section from Appendix F of the Regional Report which can be used as a model:

Table A-1: Review of Major Requirements of the SIAR

Permit Section	Permit Requirement	SIAR Section Reference
Part IV G1	Characterization Monitoring and Modeling of the Combined Sewer System	Presented in the Regional LTCP as Appendix A
Part IV.G2	Public Participation Process	Presented in the Regional LTCP as Appendix E
Part IV G3	Consideration of Sensitive Area	Presented in the Regional LTCP as Appendix C
Part IV G4	Evaluation of Alternatives	Presented in the Regional LTCP as Appendix D and summarized in Section C of this SIAR
Part IV G5	Cost/Performance Considerations	See Section D.3 of this SIAR
Part IV G6	Operational Plan	See Section F.6 of this SIAR
Part IV G7	Maximizing Treatment at the Existing STP	See Appendix A of this SIAR
Part IV G8	Implementation Schedule	See Section F.5 of this SIAR
Part IV G9	Compliance Monitoring Program	Presented in Section K of the Regional LTCP

Section C, Evaluation of Alternatives

Comment 2: Section C.1, Introduction, states the following:

“An estimate was made of the CSO from each outfall in the DEAR report. The annual CSO overflows for the 2004 typical year for the nine outfalls are summarized in Table C-1. The rainfall for 2004 incorporates climate change. A total of 173.8 MG of CSO would be discharged in 52 events for the typical year. This represents 76.6% CSO capture in North Bergen central drainage area...”

In accordance with the Federal CSO Control Policy, the assessment of system-wide CSO control alternatives is required to be based on an “average” or “typical” rainfall year. As stated within the May 2018 report entitled “Typical Hydrological Year Report”, 2004 was selected as the typical hydrological year. While a long-term precipitation data set (i.e. greater than 30 years) was considered as part of this analysis, a more recent period was used in the ultimate selection of 2004 in order to consider local climate change.

Storage is a key component of the LTCP selection. Climate change can have an impact on sea level rise for the chosen CSO technologies. As a result, be sure to consider resiliency requirements in the design of any infrastructure (e.g., storage). 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.

Comment 3: Section C.2, Development and Evaluation of Alternatives includes a summary of findings for the June 2019 Development and Evaluation of Alternatives Report. This section further explains that the viable CSO control technologies identified for North Bergen are regulator improvements, 2 CSO storage tanks (1 new, 1 retrofitted from an existing sludge storage tank at the retired Central Treatment Plant) and green infrastructure. However, this section explains that Peracetic acid (PAA) disinfection was not selected as an alternative because it is not a demonstrated technology, because of safety concerns associated with the corrosive nature of the product, and due to concerns regarding storage of PAA at each satellite location. However, within this section the following is stated:

“When full treatment is achieved, disinfection is assumed to remove 99.9% of pathogens (a “3-log kill.”)

As stated in its September 25, 2019 comments on the Development and Evaluation of Alternatives Report, additional documentation would need to be provided in order to justify this assertion. While the Department acknowledges that PAA is not a selected technology, the Department suggests that this statement be removed.

Section D, Selection of Recommended LTCP

Comment 4: Section D.2, LTCP Selection Process states the following:

“...The selection of the preliminary alternatives is based on multiple considerations including public input, water quality benefits and designated use, costs and other aspects. The alternatives will result in full attainment of the existing pathogen water quality criteria providing the maximum bacterial reduction reasonably attainable. The remaining CSO discharges will not preclude the attainment of the water quality standards for bacteria or the designated uses of the receiving waters.”

The Department disagrees with the assertion that available information demonstrates that the alternatives will result in full attainment of the existing pathogen water quality criteria as well as the statement that the remaining CSO discharges will not preclude the attainment of the water quality standards for bacteria or the designated uses of the receiving waters.

Ambient water quality data was the subject of the June 30, 2018 “NJCSO Group Compliance Monitoring Program Report.” As described in the Department’s March 1, 2019 letter regarding this report, 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 excerpt, 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, delete or revise the statement regarding CSO discharges and the attainment against water quality standards.

Comment 5: Section D.3.3, Ability to Meet Water Quality Standards, states the following:

“The receiving water for North Bergen’s CSO’s is categorized as SE2 with a fecal coliform limit of 770 cfu/100mL. The current water quality meets this criteria (see Water Quality Modeling Calibration and Validation Report to be posted on the NJDEP webpage <https://www.nj.gov/dep/dwq/cso-ltcpsubmittals.htm>) with no additional CSO reduction.”

The Department is in receipt of the “Calibration and Validation of the Pathogen Water Quality Model,” September 2020 as submitted by the NJ CSO Group. Because this model is pending review, it is premature to claim that current water quality meets criteria through the model. In addition, ambient data does not support this assertion as stated in Comment 4. Delete this statement or revise.

Comment 6: Section D.3.4, Cost Opinion, states the following:

“The engineering cost estimate for the CSO Storage Tank at NB003 is presented in Table D-1. This estimate was developed by Boswell Engineers, the municipal engineer for North Bergen. The site shown in Figure D-1 is an existing parking lot and it is owned by North Bergen. The parking lot will service the new High Tech High School which is currently being designed and will be going into

construction in approximately one year. Because of the construction schedule, this CSO control will be the first or second control constructed in the LTCP.”

The Department acknowledges the proactive manner in which North Bergen intends to implement the 5 million gallon CSO Storage Tank at NB003 (construction of this tank is also identified in the Regional Report). The implementation of this tank will significantly reduce CSO flows at NB003 once in service as shown in Table D-3. These stored CSO flows will be conveyed to the Central Pump Station and then pumped through the Hudson County force main for treatment at PVSC. As stated later in Section F.2, Recommended LTCP:

“...This alternative would receive 5 MG of CSO by gravity from Tonnelle Avenue and store until it can be released, likely by gravity, to the trunk sewer on West Side Avenue for conveyance to PVSC...”

Confirm that the storage tank will be designed to coordinate with any limitations set by PVSC regarding conveyance. Clarify the draw down time. In addition, note that Table D-1, Cost Estimate for the NB003 CSO Storage Tank cites a size of 6 million gallons whereas elsewhere in the report the size is referenced at 5 million gallons. Address accordingly.

Comment 7: In order to ensure that the selected alternative addresses any flooding, please describe any areas within the combined sewer system that are prone to flooding. 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.

Comment 8: Section D.3.4, Cost Opinion includes descriptive information for the NB003 Storage Tank. Regarding operations & maintenance for selected LTCP projects additional detail is required. Part IV.G.6 of the NJPDES CSO permit states the following regarding an 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.

Amend the LTCP to include an Operational Plan, including the Emergency Plan and Asset Management Plan, to 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 operational plan will be prepared for the operation and maintenance of green infrastructure.

Comment 9: Section D.3.4, Cost Opinion includes Table D-2:

Table D-2. Cost Estimate for The North Bergen LTCP

Outfall	CSO Control	Construction Cost (\$M)	Annual O&M Cost (\$M)	Lifecycle Cost (\$M)
NB014	Consolidate Outfall with NB009	\$0.1	\$0	\$0.1
NB003	Storage Tank	\$26.5	\$0.2	\$28.8
Green Infrastructure		\$0.39	\$0.05	\$0.435
NB008	Storage Tank	\$8.5	\$0.1	\$9.4
Total		\$35.49	\$0.35	\$38.745

Green Infrastructure is included in this table but there is limited detail as to what this project(s) entails or how the costs were derived. Section D.3.5, Selection of Alternatives states:

“...GI alternatives such as permeable pavers or tree pits will be constructed on town owned property that is currently being maintained.”

Provide additional detail as well as any site selection to what is intended by the inclusion of green infrastructure in the LTCP selection. Clarify why Table D-2 contains annual O&M costs, whereas Table E-3 specifies \$0. In addition, reevaluate the suggested timeframe of 9 years for implementation which is not currently justified in the report. Revise as appropriate.

Comment 10: Section D.3.5, Selection of Recommended Alternative, states the following regarding baseline percent capture:

“North Bergen has selected the Presumptive Approach with a goal of controlling 85% of the CSO. The CSO reduction will be made in drainage areas NB003, NB008 and NB014. The CSO volumes and frequencies before (Baseline) and after (Control) controls are shown in Table D-2. It should be noted that the CSO overflows at NB014 will be reduced by 7.2 MG, however, the overflows at NB009 (where B014 will be diverted to) will increase by 1.8 MG...”

Table D-3 is then included as follows:

Table D-3. CSO Frequencies and Volumes Before and After Controls Are In Place for the Typical Rain Year of 2004

Regulator	Baseline		Control	
	CSO Frequency	CSO Volume (MG)	CSO Frequency	CSO Volume (MG)
NB003	45	153.7	7	73.5
NB005	48	26.0	48	26.0
NB006	1	0.02	1	0.02
NB007	29	14.2	30	15.9
NB008	30	24.3	12	10.0
NB009	35	27.7	35	29.5
NB010	19	1.2	19	1.3
NB011	33	19.4	33	19.4
NB014	28	7.2	0	0.0
Total	52	273.8	48	175.6
CSO Control	76.6%		85.0%	

The Department acknowledges that the permittee has selected the following option under the Presumption Approach as a means of compliance:

- “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;”

As a result, the derivation of percent capture is central to a review of this report. Supplement this report with the specific percent capture equation utilized as well as a detailed table of the numerical values utilized within the equation that was used to derive these results in Table D-3. Approval of this report hinges in part on the inputs and results of this equation being clearly demonstrated and reproducible.

Section E, Financial Capability

Comment 11: Section E., Financial Capability quantifies the projected affordability impacts of the LTCP. 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 12: Section E.2, Baseline Conditions (Without CSO Controls) states the following:

“...The regional alternative would result in lowered overall costs for the control of CSOs within the PVSC service area. Under this approach both the costs of the regional facilities such as a relief interceptor and the resultant savings would be allocated amongst the PVSC municipalities with combined sewer systems. As the basis of this allocation remains under discussion as of the writing of this SIAR, the FCA focuses on implementation of the Municipal Control Alternative. Should the permittees come to agreement on the cost allocation for the Regional Control Plan, the FCA will be revisited to reassess the affordability and schedule for implementation of the LTCP.

The NJPDES CSO permit at Part IV.D.3.b.vi requires submission of an approvable LTCP. Those municipalities that have selected the Regional Plan must resolve any implementation issues relating to a cost-sharing plan in order to ensure that the plan is viable and to ensure the development of an appropriate NJPDES permit. In sum, any issues relating to implementation must be resolved prior to approval of the LTCP. While this comment does not necessitate a response at this time, the Department hereby notes this information for the Administrative Record.

Comment 13: Section E.3.1, Affordability Impacts of the Proposed CSO Controls, includes a summary of the selected controls as Table E-3:

Table E-3 – North Bergen’s Selected CSO Controls

Wet Weather Control Types	Municipal Control Alternative	
	Capital Costs (\$ millions)	Incremental Annual O&M Costs (\$ millions)
Storage Tank at NB003 (5.0 MG)	\$26.5	\$0.14
Storage Tank at NB008 (0.8 MG)	\$8.0	\$0.06
Closure of outfall NB014	\$0.1	\$0.0
Green infrastructure (1.0 ac)	\$0.4	\$0.0
Totals	\$35.0	\$2.0

Section E.3.4, Potential Impacts of the COVID-19 Pandemic in Affordability then states:

“Given the current and likely continuing uncertainties as to the New Jersey and national economic conditions, North Bergen will be reticent to commit to long term capital expenditures for CSO controls without the incorporation of adaptive management provisions, including provisions to revise and reschedule the long term CSO controls proposed in this SIAR based on emergent economic conditions beyond the permittees’ control. As detailed in Section F of North Bergen’s SIAR, these provisions could include scheduling the implementation of specific CSO control measures to occur during the five year NJPDES permit cycles. A revised affordability assessment should be performed during review of the next NJPDES permit to identify controls that are financially feasible during that next permit period.”

Because the Municipal Alternative is more costly than the Regional Alternative, the costs included in Section E may ultimately be an overestimate for the purposes of the Financial Capability Assessment.

The Department agrees that financial capability and economic conditions are critical components of the LTCP review. As a separate process, the Department is currently conducting rulemaking for New Jersey’s Environmental Justice Law (N.J.S.A. 13:1D-157) as signed by Governor Murphy on September 18, 2020, as indicated on the Department’s website: <https://www.nj.gov/dep/ej/>

The Department agrees that 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 a future NJPDES permit action. 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 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.

Section F, Recommended Long-Term Control Plan

Comment 14: Public participation is a required element of the LTCP, public participation is not discussed within Section F or elsewhere in the LTCP. The Department acknowledges that public participation and public outreach has taken place through the PVSC Supplemental CSO Team. Provide a brief summary of public participation activities to date subsequent to the submission of the June 2018 Public Participation Process Report. This may also include any town council or municipality government meetings where CSO alternatives were discussed. In addition, describe how this public input may have informed the selection of the LTCP alternatives.

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. One 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 15: Section F.2, Recommended LTCP includes the following chart to demonstrate the percent reduction over time for the selected LTCP projects:

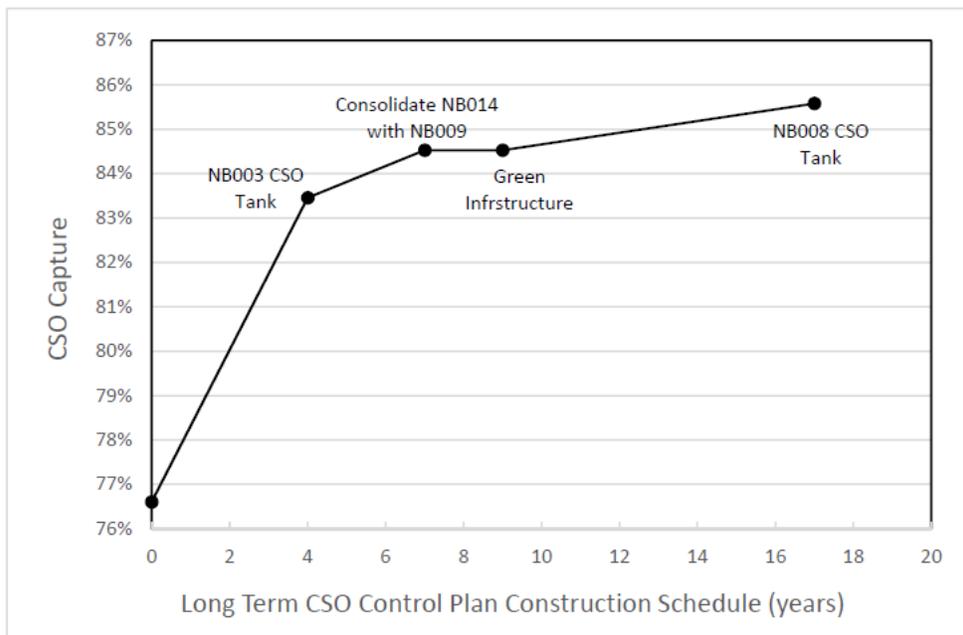


Figure F-3. North Bergen LTCP Percent CSO Capture and Schedule

This chart implies that CSO percent capture will gradually increase in between projects. For example for Year 0 to Year 4 the graph implies that percent capture will range from 76.5% at year 0 to approximately

80% at year 2 then to 83.5% when the tank is put into service. Instead, percent capture effects will not actually be realized until year 4 when NB003 CSO Tank is put into service. Provide an updated graph for the selected LTCP projects. In addition, provide a tabular form of this information to show the resultant percent capture as time progresses with the installation of each CSO control technology.

Comment 16: Section F.3, Implementation Cost Opinion includes the implementation schedule for the Municipal Alternative which is 18 years as depicted in Table F-3. In addition, Figure F-4 presents a proposed schedule. Enhance this table by providing a Gantt chart to indicate the start and end time for each of these projects as well as any overlap between projects. Additional detail is also needed for the timeline for those projects planned for the first five years, namely the construction of the storage tank for NB003. In addition, additional justification regarding the 18 year timeline for the proposed projects is required.

Related to Section F.3., Implementation Cost Opinion, compliance with the minimum 85% wet weather capture requirement must be assessed over time. As a result, the Department is evaluating a requirement to install flow meters at certain CSO regulators or outfalls in the next NJPDES permit dependent on the timing of CSO improvements. Flow metering at regulators or 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 to measure flow trends for key CSO outfalls.

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

Sincerely,



Dwayne Kobesky
CSO Team Leader
Bureau of Surface Water & Pretreatment Permitting

- C: Marzooq Alebus, Bureau of Surface Water and Pretreatment Permitting
Dianne Crilly, Office of Economic Analysis
Teresa Guloy, Bureau of Surface Water and Pretreatment Permitting
Joseph Mannick, Bureau of Surface Water and Pretreatment Permitting
Susan Rosenwinkel, Bureau of Surface Water and Pretreatment Permitting
Adam Sarafan, Bureau of Surface Water and Pretreatment Permitting
Brian Salvo, Bureau of Surface Water and Pretreatment Permitting
Stephen Seeberger, Bureau of Surface Water and Pretreatment Permitting

Distribution List

Tom Laustsen, Chief Operating Officer
Passaic Valley Sewage Commissioners
600 Wilson Avenue
Newark, NJ 07105

Bridgite Goncalves, Chief Financial Officer
Borough of East Newark
34 Sherman Avenue
East Newark, NJ 07029

Richard Haytas, Senior Engineer
Jersey City Municipal Utilities Authority
555 Route 440
Jersey City, NJ 07305

Kareem Adeem, Assistant Director of Public Works
City of Newark
239 Central Avenue
Newark, NJ 07102

Tim Boyle, Superintendent
City of Bayonne
610 Avenue C, Room 11
Bayonne, NJ 07002

Rocco Russomanno, Town Engineer
Town of Harrison
318 Harrison Avenue
Harrison, NJ 07029

Stephen D. Marks, Town Administrator
Town of Kearny
402 Kearny Avenue
Kearny, NJ 07032

Fred Margron, Town Engineer
City of Paterson
111 Broadway
Paterson, NJ 07507