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CATHERINE R. McCABE
Commissioner

September 25, 2019

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

Re: Review of Development and Evaluation of Alternatives Report
Borough of East Newark, NJPDES Permit No. NJ0117846

Dear Ms. Goncalves:

Thank you for your submission of the "Development and Evaluation of Alternatives for Long Term Control Planning for Combined Sewer Systems – Regional Report" dated June 2019 as submitted to the New Jersey Department of Environmental Protection (the Department or NJDEP) which contains the "Development and Evaluation of Alternatives Report" (hereafter "the report") for the Borough of East Newark. The regional report was submitted in a timely manner and was prepared in response to Part IV.D.3.v of the above referenced NJPDES permit. The regional report is part of the development of the Long-Term Control Plan (LTCP) submittal requirements, of which the next deliverable is due on June 1, 2020.

The "Development and Evaluation of Alternatives for Long Term Control Planning for Combined Sewer Systems – Regional Report" includes individual reports developed by PVSC and each of its 8 member combined sewer municipalities as Appendices, where Appendix C is specific to the Borough of East Newark. This subject letter serves to provide a response to the "Development and Evaluation of Alternatives Report" specific to the Borough of East Newark (Appendix C) where a response to the overall regional report is provided under separate cover.

The overall objective of the Development and Evaluation of Alternatives Report is to develop and evaluate a range of 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). Such evaluation shall include a range of CSO control alternatives for eliminating, reducing, or treating CSO discharge events. 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 2018 "Public Participation Process Report" (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; and the June 2018 "Identification of Sensitive Areas Report" (approved by the Department on April 8, 2019).

As per Part IV.G.4.e.i – vii of the above referenced NJPDES permits, the Development and Evaluation of Alternatives for the LTCP shall include, but not be limited to, an evaluation of the following CSO control alternatives:

i. Green infrastructure.
ii. Increased storage capacity in the collection system.
iii. Sewage Treatment Plant (STP) expansion and/or storage at the plant while maintaining compliance with all permit limits.
iv. Inflow and Infiltration (I/I) reduction to meet the definition of non-excessive infiltration and non-excessive inflow as defined in N.J.A.C. 7:14A-1.2 in the entire collection system that conveys flows to the treatment works.
v. Sewer separation.
vi. Treatment of the CSO discharge.
vii. CSO related bypass of the secondary treatment portion of the STP in accordance with N.J.A.C. 7:14A-11.12 Appendix C, II C.7.

The Department finds that the report includes an analysis of a range of CSO control alternatives as identified in the NJPDES permit. A general overview of the information provided for the CSO control alternatives, as provided in response to Part IV.G.4.e, can be summarized below where the Department's comments follow:

- **Green infrastructure** (GI) technologies are described in Section C.2.1 (Green Infrastructure) where this section also includes a description of the ancillary environmental, social and economic benefits of GI to the community. As stated on page 3 "GI is being evaluated in conjunction with other primary alternatives that are necessary to achieve the volume and bacteria reduction primary goals for CSO control."

- Regarding **increased storage capacity in the collection system**, the report evaluated sewer system optimization in Section C.4 (Sewer System Optimization) including regulator modifications, conveyance, outfall consolidation/relocation and real time control. Specific information is included in Section D.2.1 (Controls) where it is shown in Table D-2 (Overflow Volumes and Frequencies with Regulator Modifications) that regulator modifications to increase the weir height by 6 inches could result in an overall volume reduction of 9% from the baseline. It is then concluded that if this alternative were to be considered that additional investigation would be needed in order to ensure that this alternative would not cause street or basement flooding.

  As discussed in Section C.5 (Storage), various **storage** technologies were evaluated including pipeline storage, tunnel storage and tank storage. Section D.2.1 (Controls) focuses on the storage tank option where it is stated that "only one storage tank would be needed" and "It is assumed that a storage tank would be located near the existing outfall and it would below the ground."

- **STP Expansion** is discussed in Section C.6 (Sewage Treatment Plant (STP) Expansion or Storage) where it is explained that the Borough of East Newark transports their combined sewer flows to PVSC through the main interceptor and that "STP expansion or modification for wet weather flow could only be done by PVSC." It is then stated that due to local and regional hydraulic constraints as well as the involvement of Kearny and Harrison who share the conveyance lines, "it would likely be less intricate and more cost effective if local storage (e.g., tunnel, tank) is considered, rather than conveying the full peak flow of the Borough of East Newark to PVSC for treatment."

- **Inflow and infiltration (I/I) reduction** is described in Section C.3 (Infiltration and Inflow Control). It is stated that "Infiltration control in the Borough of East Newark CSS is not a cost-effective method of CSO control for achieving the requires CSO reductions." Regarding inflow control, it is explained that "Inflow control…would focus primarily on potential tidal inflows, as the separated catchments do not contribute storm water to the CSS, and there are no known or suspected stream inflows to the CSS." It is then concluded that investigation and control of I/I via identification and control of tidal inflow will be retained as a program enhancement to protect against future increases of CSO.

- **Sewer separation** is described in Section C.7 (Sewer Separation) whereas partial sewer separation is discussed in Section D.2.1. On page 21 it is explained that sewer separation could be conducted at the former BASF Clark Thread Mill manufacturing site and that this "area could be separated from the combined sewer area and inflows produced from this manufacturing industry could be removed from the combined sewer system." Table D-3 (Overflow Volumes and Frequencies with Partial Sewer Separation without GI) shows a potential volume reduction of 27% from baseline.

- The report evaluates **satellite treatment** (i.e., treatment of the CSO discharge) namely PAA Disinfection in Section D.2.1. It is concluded that "this alternative was assessed with partial sewer separation and GI at the Clark Thread Mill manufacturing site."

Specific Comments

Comment 1

Section B.3 (Planned Projects) describes the redevelopment of the BASF property (former Clark Thread Mill), as a means to reduce the CSO drainage area by about 14 acres through sewer separation as well as a potential location for the implementation of GI. However, there is limited discussion as to the status of that project, the commitment of the owners of that property, and whether or not there is certainty for sewer separation and GI on that parcel. Please provide additional details on the level of commitment for the use of this property for these control measures as well as the status of any remediation or redevelopment of the property.

There is also discussion later in the report regarding the construction of a storage tank near the outfall which is in close proximity to the BASF property. It is unclear if the BASF property is being considered as potential location for a storage tank and if this property could sustain the needed tank sizes referenced in Table D-5, Storage Tank Size (MG). If storage is being considered at this property or at any other locations, please describe whether any potential storage tanks would be surface or subsurface and, if subsurface, whether consideration has been given to any amenities such as parks, parking lots or GI. In addition, please elaborate as to whether or not PVSC could accept stored tank flow given the statement in Section C.6 (Sewage Treatment Plant (STP) Expansion or Storage) that "local and regional hydraulic constraints would limit the amount of additional flows that could be conveyed for treatment."

Comment 2

There is limited discussion within the report in section C.6 (Sewage Treatment Plant (STP) Expansion or Storage) regarding the required evaluation of the alternatives concerning STP Expansion and CSO-related bypass. The Department acknowledges that the Borough of East Newark does not own/operate the PVSC treatment plant; however, documentation of coordination between the two parties is essential in order to evaluate whether or not this is a viable alternative. In addition, additional documentation regarding

coordination with the other communities that share the force main is needed. For example, please identify the current conveyance capacity of the force main, as well as if there is there adequate conveyance capacity to divert additional CSO flow to PVSC? Has there been discussion with PVSC about the acceptance of these flows? Please clarify.

Comment 3

A discussion of public participation and the CSO supplemental team is included in Section D.1.4 (Public Acceptance). As per Part IV.G.2 of the NJPDES CSO permit, public participation shall actively involve the affected public throughout each of the three steps of the LTCP process including the Development and Evaluation of Alternatives phase. The Department acknowledges that a list of meetings and agendas for the CSO Supplemental Team, as well as a discussion of other public outreach, is included in your Public Participation Process Report dated June 2018. Please amend Section D.1.4 of this subject report with a brief summary of subsequent public participation activities as well as meeting dates specific to the development and evaluation of alternatives including a general overview of feedback on any alternatives presented that are specific to the Borough of East Newark.

Moving forward, public participation is a required element of the 'Selection and Implementation of Alternatives' for the LTCP. Continued public participation must be provided to garner public input regarding CSO control alternatives where a description of such activities must be included in the LTCP. The discussion should include a description of the public participation activities that occurred during the development of these reports, the feedback opportunities provided, and how feedback was considered. It is also recommended that members of the CSO Supplemental Team be provided a copy of the LTCP in advance of the June 1, 2020 due date to the Department.

Comment 4

The NJPDES permit requires that the permittee select either the Presumption or Demonstration Approach as defined in the Federal CSO Control Policy as well as in the NJPDES permit. These alternatives are briefly discussed in Section D.1.5 (Performance Considerations) and 85 percent capture is identified in Table D-10 (CSO Control Alternatives Costs Summary) as a CSO Event Target where percent capture is one of the alternatives for the Presumption Approach. However, a specific approach has not been selected within the report. While this comment does not necessitate a response at this time, a final selection is required to be made in the 'Selection and Implementation of Alternatives' report as part of the LTCP submission due on June 1, 2020. Note that if the Presumption Approach is selected, the percent capture equation utilized to calculate any baseline and other percent capture values for each hydraulically connected system must be included for report completeness.

Comment 5

The Department acknowledges that hydraulically connected system is defined within the notes and definitions in Part IV of the NJPDES permit as "The entire collection system that conveys flows to one Sewage Treatment Plan (STP)…" The definition of hydraulically connected system allows the permittee to "segment a larger hydraulically connected system into a series of smaller inter-connected systems." As depicted in Table D-10 85% capture is calculated, however it is unclear if this applies specifically to the Borough of East Newark or to a larger system. Please provide a justification for the segmentation of this portion as a hydraulically connected system. See also **Comment 2** above regarding the evaluation of percent capture.

Comment 6

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. While use of the year 2004 does consider climate change, please be sure to consider resiliency requirements in the design of any infrastructure (e.g., storage and satellite treatment). 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.

While this comment does not necessitate a response at this time, these protective measures should be a consideration in the LTCP.

Comment 7

In Section D.2.1 (Controls) the use of GI as a complementary CSO control technology is described where it is stated that two different control levels of GI were assessed. Specifically, an assessment is included of the management of 1" of storm water runoff generated from 5% of impervious surface as well as the management of 1" of storm water runoff generated from 10% of impervious surface. Both scenarios are equated to the number of acres that would be needed to attain these percentages, as shown in Table D-4 (Overflow Volumes and Frequencies with Partial Sewer Separation and GI), along with the associated volume reduction for each scenario and the baseline value. The Department acknowledges the inclusion of this quantitative metric for GI which is needed in order to establish that any volumetric credit is given towards overall CSO reduction goals. Please describe how you derived the volumes reductions referenced from GI measures.

However, the report contains limited information regarding the siting of potential GI projects. While there is a reference within Section C.2.1 to the "Green Infrastructure Feasibility Study, East Newark," as prepared by Rutgers University, there is limited discussion of possible locations for GI opportunities in the Borough beyond the general reference to the BASF site. Please elaborate.

Comment 8

While cost analyses are provided within the report, particularly in Section D.2 (Preliminary Control Program Alternatives) and Section D.3 (Preliminary Selection of Alternatives), please note that the Department is not commenting on any cost analysis at this time and will defer its comments until the LTCP submission. This includes any conclusions regarding the selection of any preliminary CSO control alternatives, present value calculations, and the cost range of any CSO control alternatives.

Comment 9

In Section D.2.1 (Controls) the use of disinfection by Peracetic Acid (PAA) is discussed. It is stated that "This preliminary disinfection alternative assumes that PAA disinfection will be implemented at locations

between the existing regulators and existing outfalls." Based on this statement, it is unclear if it is the Borough's intention to include pretreatment technology to provide primary clarification and reduce settleable solids. Please clarify.

Table D-10 includes different alternatives for various CSO Event Target/year. The Alternative IDs for each of the CSO Event Targets include 1) Partial SS, 5% GI, PAA, FlexFilter; 2) Partial SS, 5% GI, Tank; 3) Partial SS, 10% GI, PAA, FlexFilter; and 4) Partial SS, 10% GI, Tank. Prior to this reference within this table there is no discussion of the FlexFilter within the report. Please clarify if FlexFilter or other pretreatment technologies are being considered and, if so, provide a description of such.

Finally, on page 24 under "6) Treatment – PAA Disinfection" states that "When full treatment is achieved, disinfection is assumed to remove 99.9% of pathogens (a "3-log kill."). Please provide documentation and supporting analysis to justify the 3-log reduction.

Please incorporate these changes to the report and submit a revised version of the regional report 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 Permitting

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