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September 25, 2019

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Re: Review of Development and Evaluation of Alternatives for Long Term Control Planning for Combined Sewer Systems – Regional Report
Passaic Valley Sewerage Commissioners, NJPDES Permit No. NJ0021016
Bayonne City Municipal Utilities Authority, NJPDES Permit No. NJ0109240
Borough of East Newark, NJPDES Permit No. NJ0117846
Town of Harrison, NJPDES Permit No. NJ0108871
Jersey City Municipal Utilities Authority, NJPDES Permit No. NJ0108723
Town of Kearny, NJPDES Permit No. NJ0111244
City of Newark, NJPDES Permit No. NJ0108758
North Bergen Municipal Utilities Authority, NJPDES Permit No. NJ0108898
City of Paterson, NJPDES Permit No. NJ0108880

Dear Permittees:

Thank you for your submission of the “Development and Evaluation of Alternatives for Long Term Control Planning for Combined Sewer Systems – Regional Report” (hereafter “the regional report”) dated June 2019 as submitted to the New Jersey Department of Environmental Protection (the Department or NJDEP). The regional report was submitted in a timely manner and was prepared in accordance with Part IV.D.3.b.v of the above referenced NJPDES permits. The regional report is part of the development of the Long-Term Control Plan (LTCP) submittal requirements which 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. This subject letter serves to provide a response to the “Development and Evaluation of Alternatives for Long Term Control Planning for Combined Sewer Systems – Regional Report” whereas responses to the individual appendices is provided under separate covers.

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 regional 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.

A sub list of alternatives have been identified as part of the development of the CSO control alternatives that are applicable to the PVSC, i.e., “alternatives that can be implemented for PVSC-owned infrastructure and/or implemented for CSO outfalls (that are owned by other Permittees) but are associated with PVSC-owned and operated regulators.” PVSC provides for regional collection, conveyance, and treatment of sewage where a range of alternatives were developed to evaluate each of the screened and preselected technologies, both individually and in combination with other technologies on a regional scale. The PVSC Water Resource Recovery Facility (“WWRf”) as located in Newark receives flow from three sources: the

Main Interceptor Sewer, the South Side Interceptor, and the Hudson County Force Main (“HCFM”). A general overview of the information provided for the CSO control alternatives, can be summarized below where the Department’s comments follow:

- As described in each of the permittees’ individual reports (i.e., Appendices), various alternatives were evaluated alone and in combination with each other for those alternatives identified in Part IV.G.4.e.i - vii. Alternatives were found to have varying applicability, effectiveness, and cost, with some alternatives being more effective in combination with others. **Alternative 1** as described in Section D.2.1 (Regional Alternative 1) of the regional report includes those alternatives for each of the 8 permittees that were found to be the most cost effective for each permittee to meet the yearly CSO frequencies and 85% capture scenario. Comments on the individual appendices are provided under separate covers as addressed to each of the individual 8 permittees.
- **Alternative 2**, as described in Section D.2.2 (Regional Alternative 2) of the regional report, was created as a regional approach in order to improve capture and treatment using regional tunnels to meet the yearly CSO frequencies and the 85% capture scenario. The regional tunnels would include the Paterson Citywide Tunnel, McCarter Highway Tunnel, and the NJ440 Tunnel, as depicted in Figure D-1 (Map of Regional Tunnels Locations NJ440). This alternative would require dedicated surface level piping leading to the drop shafts and microtunneling to connect the drop shafts to McCarter Highway Tunnel which would be needed in Harrison, East Newark, and Kearny.
- **Alternative 3**, as described in Section D.2.3 (Regional Alternative 3) of the regional report, evaluates a combination of Newark Regulator Modifications and Rehabilitation + Parallel Interceptor + Plant Expansion (720 MGD) + Hudson County Force Main Pump Expansion (146 MGD HCFM) to meet the yearly CSO frequencies and the 85% capture scenario. Modifications to the 11 PVSC-owned and operated CSO regulators to maximize flow into the PVSC Main interceptor and PVSC WWTP is evaluated along with a parallel interceptor which would run from the WRRF to outfall regulator NE002. Regulator flows or upstream flows would be redirected to this new interceptor to reduce overflow and make use of an expanded 720 MGD treatment capacity at the WRRF. Additionally, the HCFM, which receives flow from Jersey City, City of Bayonne, North Bergen, and South Kearny, would be maximized to 146 MGD.
- **Alternative 4**, as described in Section D.2.4 (Regional Alternative 4) of the regional report, evaluates a combination of Newark Regulator Modifications and Rehabilitation + Parallel Interceptor + Plant Expansion (720 MGD) + Hudson County Force Main Pump Expansion (146 MGD HCFM) + Tunnels, to meet the yearly CSO frequencies and the 85% capture scenario.

Specific Comments

Comment 1

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.1.1 (Alternatives Evaluation Approach) and the regional report evaluates various CSO control technologies to provide varying levels of control (i.e., 0, 4, 8, 12, and 20 CSO events per year, and 85% CSO volume capture). A target of 85% capture and four overflows or less are two alternatives for the Presumption Approach; however, a specific approach has not been selected within the regional 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.

Baseline percent capture is discussed in the regional report at Section C.1.1 (Water Quality and CSO Control Goals) where values of 83.7% capture for the PVSC Interceptor Communities and 65.3% for the Hudson County Force Main Communities are identified in Table C-8 (Typical Year % Capture). For report completeness the percent capture equation utilized to calculate any baseline and other percent capture values for each hydraulically connected system must be provided.

Comment 2

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.” A justification for the hydraulically connected systems, namely the segmentation of the interceptor communities as well as the segmentation of those communities that pump to the Hudson County Force Main, must be provided.

Comment 3

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 4

Expansion is included in the header of Section C.6 (Sewage Treatment Plant Expansion or Storage at the Plant) where wet weather blending is described within. Specifically, throughout the regional report, the use of “bypassing” to reach flows up to 720 MGD are referenced as “expansion”. Please note that the Department does not consider bypassing as a form of expansion and references to bypass should be stated as such.

Comment 5

A discussion of public participation is included in Section D.1.5 (Public Input). 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. As stated

in Section D.1.5 (Public Input) of the regional report, “The implementation of the LTCP PPP is an ongoing process that includes hosting quarterly public meetings with the Clean Waterways Healthy Neighborhoods Supplemental CSO Team, participating in the meetings of various local groups, participating as an active member of the PVSC Treatment District Communities GI Programs, including Newark DIG, Jersey City START, Paterson SMART, Bayonne Water Guardians, Harrison Tide, and Kearny AWAKE and partnering with Rutgers University in a GI municipal outreach program, ... attending public events, meeting with municipal representatives, and soliciting public input through the Clean Waterways Healthy Neighborhoods website and social media platforms.”

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 6

Alternative 2 of the regional report details the usage of tunnel storage in Section D.2.2 (Regional Alternative 2) including the Paterson Citywide Tunnel, McCarter Highway Tunnel, and the NJ440 Tunnel. However, Appendix A (Development & Evaluation of Alternatives Report, PVSC) only includes two tunnels and does not include the NJ440 Tunnel. Similarly, the City of Bayonne looked at the feasibility of the NJ440 tunnel and determined that no further evaluation on this alternative was warranted, as noted in Section D.2.9 (Storage Tunnels) of Appendix B (Development & Evaluation of Alternatives, The City of Bayonne). Please explain these discrepancies.

Comment 7

Regarding Alternatives 2, 3 and 4, the use of tunnels, additional pumped capacity through the Hudson County Force Main Pump Expansion and incorporation of a new parallel interceptor would all allow additional flows to be conveyed to the PVSC WRRF. Please confirm that these flows would be sent PVSC, whether PVSC could accept these stored flows, or if there are any conveyance limitations that would prevent such. In addition, please verify the current capacity of the PVSC main interceptor; current capacity of the HCFM; and current flows of the HCFM.

Comment 8

In Section D.2.3 (Regional Alternative 3) it is stated that “Regional Alternative 3 is the same as Alternative 5a that was evaluated by PVSC (See Appendix A) and includes Newark Regular Modifications & Rehabilitation + Parallel Interceptor + Plant Expansion (720 MGD) + Hudson County Force Main Pump Expansion (146 MGD HCFM).” However, based on Table D-1 (PVSC Alternatives) as included in Appendix A, Alternative No. 6.a.1 is Newark Regular Modifications & Rehabilitation + Parallel Interceptor (Newark, Kearny, Harrison, East Newark) + Plant Expansion (720 MGD) + JC Pipe (146 MGD HCFM).

In addition, in Section D.2.4 (Regional Alternative 4) it is stated that “Regional Alternative 4 is the same as Alternative 6 that was evaluated by PVSC (See Appendix A). However, based on Table D-1 (PVSC Alternatives), Alternative No. 7.a1 is Newark Regular Modifications & Rehabilitation + Parallel Interceptor (Newark, Kearny, Harrison, East Newark) + Plant Expansion (720 MGD) + JC Pipe (146 MGD HCFM) + Tunnels. Please revise or clarify.

Comment 9

While cost analyses are provided throughout the regional report, particularly in Section D.1.7 (Cost) as well as for each alternative evaluated in Section D, 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.

Please incorporate these changes 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,

A handwritten signature in black ink, appearing to read "Dwayne Kobesky". The signature is written in a cursive style with a large initial 'D'.

Dwayne Kobesky
CSO Team Leader
Bureau of Surface Water Permitting

- C: Robert Hall, Bureau of Surface Water Permitting
Marzooq Alebus, Bureau of Surface Water Permitting
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