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CATHERINE R. McCABE
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September 25, 2019

Robert J. Smith, Town Administrator
Town of Kearny
402 Kearny Avenue
Kearny, NJ 07032

Re: Review of Development and Evaluation of Alternatives Report
Town of Kearny, NJPDES Permit No. NJ0111244

Dear Mr. Smith:

Thank you for your submission of the "Development and Evaluation of Alternatives for Long Term Control Planning for Combined Sewer Systems – Regional Report" dated July 1, 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 Town of Kearny. 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 F is specific to the Town of Kearny. This subject letter serves to provide a response to the "Development and Evaluation of Alternatives Report" specific to the Town of Kearny (Appendix F) 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 as well as inclusion of several control programs. 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.2.5 (Green Infrastructure) with a more detailed description of individual sites is included in Section C.2.5.5 (Site Evaluation). For those sites that remain in consideration based on an analysis of site-specific factors, it is concluded that further soil testing is needed to determine the suitability of existing soils for GI implementation.

- Regarding **increased storage capacity in the collection system**, the report evaluated sewer system optimization in Section C.5 (Sewer System Optimization) including additional sewer construction (i.e. sewer separation), regulator modifications, outfall consolidation/relocation and real time controls. As described on page 21, regulator modifications and real time controls were not considered feasible and were eliminated from consideration. However, outfall consolidation/relocation will be investigated further for the consolidation of Outfalls 004A (Nairn Avenue) and 006A (Johnson Avenue) as part of the LTCP.

  As discussed in Section C.6 (Storage), various **storage** technologies were evaluated including inline storage (CSO tunnel), offline storage (tanks) and industrial discharge detention. Section D.1 (Development and Evaluation of Alternatives) further analyzes these alternatives and includes detailed siting information particularly around the outfall location.

- **Sewage Treatment Plant (STP) Expansion** and **CSO Related Bypass** is discussed in Section C.7 (STP Expansion or Secondary Bypass). It is explained on page 23 that PVSC owns and operates the treatment plant which treats the flows from the Town of Kearny and that "Any modifications to the PVSC treatment plant to mitigate CSO volume and frequency, or any increased treatment capacity, will be addressed by PVSC and its consultants."

- **Inflow and infiltration (I/I) reduction** is described in Section C.4 (Reduction in Base Flow) where it is explained that a reduction in base flow can be accomplished through measures such as water conservation or I/I reduction; however, "I/I reduction is expected to have little impact on the number

and volume of CSOs, as the majority of the CSO volume is not coming through leaks in the sewer piping, but from sanitary flow and precipitation." It then further stated on page 21 that "A 10 percent reduction in base flow resulted in a 1.6 percent reduction in overall Town wide CSO frequency, and a 1.4 percent reduction in overall Town wide volume." For these reasons base flow reduction was eliminated from further consideration.

- **Sewer separation** is described in Sections C.3 (Combined Sewer Separation) and D (Alternatives Analysis) where the report evaluates two levels of sewer separation namely total sewer separation for the entire town and partial sewer separation in Drainage Area 010 only. As described on page 20, "The Town is committed to achieving complete separation of sewers in all of Drainage Area 010. A project is currently in design and will go into construction in the near future, which will achieve this goal."

- The report evaluates **satellite treatment** (i.e., treatment of the CSO discharge) in Section C.8 (Treatment of CSO Discharge) as well as in Section D (Alternatives Analysis). Peracetic acid disinfection at the end of each outfall is also included in the preliminary control program alternatives as described in Section D.2 which cover all the various levels of control (i.e. 0, 4, 8, 12, and 20 CSO events per year, and the 85% capture goal).

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. Performance objectives are described throughout various alternatives where analysis is included for targeted frequencies for 0, 4, 8, 12 and 20 CSO events per year as well as for 85% systemwide capture where the attainment of 4 overflows or less and 85% capture are two of the alternatives for the Presumption Approach. However, while this information is included, neither the Presumption of Demonstration Approach have been specifically 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 2

A detailed analysis is included in Section D.3 (Reduction in CSO Volume and Frequency) which depicts the Baseline B alternative where it is stated that this alternative achieves the 85% capture target for PVSC interceptor communities as shown in footnote (1) in Table D-3 (Annual Untreated Overflow Frequency by Outfall). This section also includes a reference to percent reduction on a Town-wide basis. 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 Plant (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." Please provide a justification for the segmentation of the interceptor communities or on a Town-wide basis as a hydraulically connected system for report completeness. See also **Comment 1** above regarding the evaluation of percent capture.

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

A discussion of public participation and the CSO supplemental team is included in Section C.2.2 (Public Education and Outreach) and Section C.2.5.3 (Public Participation Process Report). 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. In addition, the involvement of public participation through a local community group, Kearny AWAKE (Association of Water, Agriculture and Kearny's Environment) regarding CSO issues and the public participation process is described within Section C.2.2 where public input specific to localized flooding as part of Kearny AWAKE is described on page 20 in Section C.2.5 (Green Infrastructure).

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 and Kearny AWAKE members be provided a copy of the LTCP in advance of the June 1, 2020 due date to the Department.

Comment 5

Green Infrastructure is discussed at length in Section C.2.5 (Green Infrastructure) and Section D.5 (Green Infrastructure). Detailed information is included regarding the siting of potential GI projects in Section C.2.5.5 (Site Evaluation) as well as a map as Figure 4 (Green Infrastructure). In addition, an analysis is included in Section D.5 regarding the portion of impervious area controlled by green infrastructure as 5% and 10% including the required number of acres to attain this target. 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 acreage values referenced in order to quantify the volumetric decrease in CSO flow from GI measures.

Comment 6

There is limited discussion within the report in Section C.7 (STP Expansion and Secondary Bypass) regarding the required evaluation of the alternatives concerning STP Expansion and CSO-related bypass. The Department acknowledges that the Town of Kearny 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. For example, 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 7

Inline Storage (CSO Tunnel), offline storage (Tanks) and Industrial Discharge Detention are described in Section C.6 (Storage) with more detailed discussion in Section D (Alternatives Analysis). While siting information has been included through a description of each area near the outfall as well as of maps of the areas, please supplement with additional discussion as to whether or not these areas could sustain the needed volume of the estimated tank sizes referenced in Table C-1 (Tunnel Storage) and Table C-2 (Tank Storage). If storage is being considered at any available properties near the outfalls, 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 or if there are any conveyance limitations that would prevent such.

Comment 8

In Section D.2. (Preliminary Control Program Alternatives) the use of disinfection by Peracetic Acid (PAA) is discussed. On page 33 it is stated, "Where full treatment is achieved, disinfection is assumed to remove 99.9% of pathogens, or a 3-log kill." Similarly, on page 33 footnote 6 states "(6) In this context, "Untreated CSO Volume" is defined as the sum of discharged volumes during any 5-minute period that exceed the design flow rate for 3-log pathogen removal."

Please provide documentation and supporting analysis to justify the 3-log reduction. In addition, in the report there is no discussion regarding the use of some type of solids removal in conjunction with PAA. Based on this, it appears that there will be no pretreatment technology to provide primary clarification and reduce settleable solids. Please clarify.

Comment 9

While cost analyses are provided within the report, particularly in Section D.4 (Evaluation of Costs) and Section D.6 (Discussion of Costs), 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 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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