



State of New Jersey

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September 25, 2019

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

Re: Review of Development and Evaluation of Alternatives Report
Town of Harrison, NJPDES Permit No. NJ0108871

Dear Mr. Russomanno:

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 Harrison. 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 D is specific to the Town of Harrison. This subject letter serves to provide a response to the “Development and Evaluation of Alternatives Report” specific to the Town of Harrison (Appendix D) 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) where the report includes a description of the ancillary environmental, social and economic benefits of GI to the community. GI is also described in Section D.2.7 (Green Infrastructure) where it explained on page 116 that bioswales and permeable pavement have been selected for further analysis for inclusion in the LTCP where the breakdown between the two technologies will depend on field conditions.
- Regarding **increased storage capacity in the collection system**, the report evaluated sewer system optimization in Section C.4 (Sewer System Optimization) including additional conveyance, regulator modifications, outfall consolidation/relocation and real time controls. As discussed on pages 35-38, these control alternatives will not be considered further based on a number of site-specific factors.

As discussed in Section C.5 (Storage), various **storage** technologies were evaluated including pipeline storage, tunnel storage and tank storage. Section D.2.1-3 further analyzes these alternatives and includes detailed siting information particularly around the outfall location.

- **Sewage Treatment Plant (STP) Expansion** is discussed in Section C.6 (STP Expansion or Storage at the Plant) where it is explained on page 41 that the Town of Harrison transports their combined sewer flows to PVSC and that "Expansion of the treatment plant and storage at the treatment plant are the responsibility of PVSC and has not been evaluated by Harrison." There is also a referenced to the PVSC main report (i.e. regional report) within this section.
- **Inflow and infiltration (I/I) reduction** is described in Section C.3 (Infiltration and Inflow Control) as well as a description of advanced sewer inspection and maintenance in subsection C.3.2. It is stated on page 34 that "Harrison has no control over the other communities tributary to PVSC, so it is not feasible for the Town of Harrison to implement I/I controls across the entire system." The report also indicates that it may be beneficial to incorporate I/I measures into other control alternatives.

- **Sewer separation** is described in Sections C.7 (Sewer Separation) and D.2.6 (Control Program 6 Sewer Separation) with additional specific discussion in Section B.3.1 (Sewer Separation in Redevelopment Area) regarding the ongoing separation of the H-05 basin.
- The report evaluates **satellite treatment** (i.e., treatment of the CSO discharge) namely PAA Disinfection in Section C.8 (Treatment of CSO Discharge) as well as in Section D.2.4 (Control Program 4 End-of-Pipe Treatment) and Section D.2.5 (Control Program 5 Consolidated End of Pipe Treatment). This alternative was analyzed at the end of the each outfall pipe, as consolidated treatment, and as part of the storage alternatives. A description of the treatment train, including screening, primary treatment and PAA is included in Section D.2.4.1 (Control Program 4 Description) on page 97.

Specific Comments

Comment 1

A robust discussion of public participation and the CSO supplemental team is included in Section A.5 (Public Outreach Summary) and Section D (Preliminary Control Program Alternatives) includes a subsection for public acceptance within each control program description. 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. The involvement of a local community group, Harrison TIDE (Transforming Infrastructure and Defending our Environment) is referenced in this section on pages 6 & 7 regarding their involvement with CSO issues.

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 Harrison TIDE members be provided a copy of the LTCP in advance of the June 1, 2020 due date to the Department.

Comment 2

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 discussed in Section D.1.7 (Performance Objectives – Systemwide Level of Control) where the frequency of CSO events is described within this section and in other sections of the report. Two of the alternatives for the Presumption Approach, namely the attainment of 85% percent capture and 4 overflows or less, are referenced throughout the report. 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 3

The following excerpt is included in Section B.5 (Modeling of Future Baseline Conditions) on page 18:

“The PVSC CSO Group estimated that a 7% reduction in overflow volume by the interceptor communities would be required to achieve a systemwide 85% capture of wet weather flows as per the presumptive approach. The 30% reduction achieved between the 2015 baseline and 2050 future baseline exceeds this reduction goal. Thus, all alternatives evaluated would achieve the 85% capture level of control, through the separation of basin H-005.”

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.” Please provide a justification for the segmentation of the interceptor communities as a hydraulically connected system for report completeness. See also **Comment 2** above regarding the evaluation of percent capture.

Comment 4

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 5

In Section C.2.5 (Green Infrastructure) and Section D.2.7 (Control Program 7 Green Infrastructure) Green Infrastructure is discussed. Detailed information is included regarding the siting of potential GI projects, a maps as Figure 51 (Harrison Land Use Map) as well as through land use information. It is further stated on page 116 that “...the anticipated green infrastructure is expected to consist primarily of bioswales and permeable pavement, but the breakdown between the two technologies will depend on field conditions.” In addition, the direction of 2.5%, 5%, 7.5% and 10% of the impervious area through GI were assessed. All percentages are equated to a reduction in CSO volume, frequency and duration in order to attain these targets and the changes from the baseline are depicted in Tables 61-67. 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 gallons 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.6 (STP Expansion or Storage at the Plant) regarding the required evaluation of the alternatives concerning STP Expansion and no discussion of CSO-related bypass. The Department acknowledges that the Town of Harrison 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

Linear storage (pipelines and tunnels) and point source storage (tanks and industrial discharge detention) are discussed in Section C.5 (Storage) and more detailed discussion is provided in Sections D.2.1 (Control Program 1: Point Storage at Individual Outfalls), D.2.2 (Control Program 2: Consolidated Tank Storage), and D.2.3 (Control Program 3: Tunnel Storage). 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 D-5. If storage is being considered at any available properties near the outfalls, please describe whether or not any potential storage tanks would be surface or subsurface and, if subsurface, whether or 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

While cost analyses are provided within the report, particularly in Section D.2 (Preliminary Control Program Alternatives) and Section D.3 (Preliminary 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

Section D.2 includes a robust discussion of the seven control program alternatives with individual subsections for each including description, analysis, institutional issues, implementability, public acceptance, performance summary and cost summary. In addition, a summary rating with weighted scores is provided as Table 5 (Summary Rating of Control Programs) on page xviii along with additional general discussion in Section D.3.

While it is acknowledged that the benefits of these control program are analyzed in concert with the effects of sewer separation at H-005, generally these alternatives show a singular approach through the implementation of one alternative as opposed to a mix of various alternatives. Please expand on whether or not a mixed approach has been considered to address each outfall.

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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