# State of New Jersey

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**May 7, 2021**
**Via E-mail**

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Re: Review of Selection and Implementation of Alternatives Report (SIAR)
City of Camden, NJPDES Permit No. NJ0108812
City of Gloucester, NJPDES Permit No. NJ0108847
Camden County Municipal Utilities Authority (CCMUA), NJPDES Permit No. NJ0026182

Dear Permittees:

Thank you for your submission dated September 2020 entitled "Selection and Implementation of Alternatives Report" for CCMUA, the City of Camden and the City of Gloucester as submitted to the New Jersey Department of Environmental Protection (the Department). This SIAR report (also referred to as the Long Term Control Plan or LTCP) was submitted in a timely manner as required by the above referenced New Jersey Pollutant Discharge Elimination System (NJPDES) permit. This submission was issued in response to the LTCP submittal requirements as due on October 1, 2020.

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 January 24, 2019); the June 2018 "Public Participation Report" (approved by the Department on October 7, 2019); the June 2018 "Baseline Consideration of Sensitive Areas" (approved by the Department on December 17, 2018); the June 2018 "Baseline Compliance Monitoring Report" (approved by the Department on February 7, 2019) and the June

2019 Development & Evaluation of Alternatives (DEAR) (approved by the Department on January 30, 2020).

As currently written the LTCP does not conform to the above stated objectives as it does not provide a clear plan for attaining 85% wet weather capture as per the selected Presumption Approach. Section E.1, Introduction of the LTCP states:

> "…This SIAR documents the selection of a long term strategy, schedule and institutional framework for implementation of CSO controls. This SIAR maintains the CSO control target of capturing for treatment 85% of the combined sewage generated during precipitation events occurring over the Typical Year…"

While the above referenced statement is accurate, the LTCP does not conform to this goal as it does not contain a strategy to attain the minimum 85% wet weather capture and instead specifies a system-wide capture rate of 81% as stated in Section 1.4, Overview of Control Alternatives in the DEAR. This is inconsistent with the Federal CSO Control Policy and the NJPDES permit. Rather, the LTCP states that the baseline will be reassessed as part of an Efficacy Evaluation subsequent to the Completion of Current Projects and projects will then be determined at that time subject to financial considerations. Note that the June 2019 DEAR did contain projects to attain 85% capture as shown in Tables 5-2 through 5-6 of that report. Please amend the LTCP by selecting specific CSO projects that attain 85% capture as well as any deleting any statements that claim that a targeted goal of 81% is acceptable.

In addition to the above, expansion of the plant to 220 million gallons per day (MGD) as a CSO related bypass and disconnection of the Pennsauken flows from the combined sewer system must be prioritized in the short term given the significant reductions in CSO volumes that will be realized from these projects. Also, this LTCP must give priority to the elimination of the ongoing flooding that is occurring in the Cities of Camden and Gloucester as flooding is a public health issue. Finally, the LTCP is lacking information regarding the City of Gloucester and any strategy and commitment for reducing CSOs.

The objective of the LTCP is to select CSO control alternatives to demonstrate compliance with the Federal CSO Control Policy where the resultant schedule length is determined based on the financial capability of the affected municipality. The LTCP must be revised in its selection of alternatives for compliance with the Federal CSO Control Policy and must structure the schedule for those projects based on affordability. In addition, detailed assumptions must be provided that were used to reach the overall conclusions on affordability. A review of the financial capability can not be conducted until this information has been provided.

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

**N.J.A.C. 7:14A-4.9, Certifications**

Comment 1: Part IV.D.1.b of your existing CSO permit states the following:

"b. All reports submitted to the Department pursuant to the requirements of this permit shall comply with the signatory requirements of N.J.A.C. 7:14A-4.9, and contain the following certification:

i. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or

persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information".

The Department acknowledges that a modified version of the above referenced certification statement is included in the report and has been signed by representatives of CCMUA, the City of Camden and the City of Gloucester. In addition, the report also includes intermunicipal agreements in the form of resolutions that are also signed by representatives of CCMUA, the City of Camden and the City of Gloucester. These certification statements are acceptable to the Department. This comment is included for informational purposes and does not necessitate a response.

**Executive Summary**

Comment 2: The Executive Summary serves to provide a summary of the overall report. Any changes as part of a revised LTCP should include revisions to the Executive Summary as appropriate. In addition, please note that the information within the Executive Summary is not always consistent with other sections of the LTCP such as baseline percent capture values as included in various tables. Please address.

**Section 1.0, SIAR Introduction**

Comment 3: Section 1.2, Overview of the Combined Sewer System states the following:

"Improvements currently underway by CCMUA and the City of Camden will result in the expansion of CCMUA's Delaware No. 1 WPCF [Water Pollution Control Facility] wet weather treatment capacity from 150 (wet weather) to 185 MGD and the restoration of the hydraulic capacities of the Camden sewer system, including stormwater inlets and CSO outfalls to current design capacities through comprehensive cleaning. The restoration of the hydraulic capacities is critical to Camden's efforts to reduce street flooding which can occur during wet weather.

The results of these ongoing improvements are summarized on Table 1-2 below. The projected reduction in CSO volume, increased capture rates and reduction in surface flooding resulting from these early implementation steps may be noted.

**Table 1-2 – System Wide Performance Characteristics Used for Control Alternatives Development**

| System Wide Performance Metrics | | Baseline Condition | Upon Completion of Current Improvements* |
|---|---|---|---|
| | | *Camden Hydraulic Capacity not Restored* | *Camden Hydraulic Capacity Restored* |
| WPCF # 1 Capacity | | 150 MGD | 185 MGD |
| 1 | % Capture | 66% | 76% |
| 2 | Overflow Volume (million gallons) | 900 | 618 |
| 3 | Range of Overflow Frequencies (events) | 10-69 | 10-69 |
| 4 | Modeled Surface Flooding (million gallons) | 94 | 44 |

*WPCF # 1 capacity at 185 MGD + Camden collection system hydraulic capacity restoration

"

Given that Table 1-2 is intended to provide a baseline after completion of ongoing improvements, please provide a detailed update on the schedule for ongoing projects as identified in Table E-13 including continued cleaning of Camden collection system, continued cleaning of Camden CSO outfalls,

rehabilitation of Camden regulator mechanisms, and the completion of the Arch Street Pump Station capacity expansion (replacement of 3 existing 75 horsepower motors with new 100 horsepower motors and replacement of 3 existing 22.25" impellers with 24.25" impellers.). In addition, please describe why the range of overflow events in Table 1-2 is so significant.

As noted throughout the LTCP, collection system cleaning and outfall dredging projects are still ongoing as part of Program Element 1 and the Department is concerned that these projects have not yet been completed given that the proper operation and maintenance of the system is a required Nine Minimum Control. As such, the Department is evaluating the most appropriate regulatory instrument to ensure completion of these projects on schedule.

Comment 4: Section 1.4, Overview of Control Alternatives in the DEAR states that the SIAR builds upon and incorporates a number of findings of the DEAR including the following:

- "The control performance target will be system-wide 85% capture of wet weather combined sewer flow during the typical year;"

The Federal CSO Control Policy and the NJPDES permit at Part IV.G.4.f.ii specify that wet weather capture is a means of compliance under the Presumption Approach as follows:

"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;"

The 2015 NJPDES CSO permit requires selection of either the Presumption Approach or the Demonstration Approach. The Department acknowledges that the permittees have selected the Presumption Approach in the DEAR as well as in the LTCP where the minimum percent capture value of 85% must be attained to ensure compliance. As previously stated, the selected CSO projects must be reevaluated and revisited, as well as any statements within the LTCP that include a targeted goal of 81%, since the Presumption Approach requires a minimum of 85% wet weather capture.

Comment 5: Section 1.4, Overview of Control Alternatives in the DEAR includes Figure 1-2 – Combined Sewer System – Five Subsystems. Additional clarification needs to be provided as part of this figure regarding the grouping of Delaware-GL, Newton Creek, and 007A. Specifically, it is the Department's understanding that captured flows from the G-7 sewershed are conveyed into the Gloucester interceptor sewer via the King Street pump station yet the overflows from the G-7 regulator discharge to Newton Creek. In addition, the flow capture rate from G-7 was included in the Newton Creek subsystem statistics and was treated as inflow for the Delaware River-Gloucester subsystem statistics. Please supplement this figure with this information to clarify these points and confirm that percent capture was appropriately calculated and confirm that certain flows were not double counted.

Comment 6: Section 1.6, Stakeholder Involvement in the SIAR Development includes a detailed description as to how the City of Camden and CCMUA actively worked together to engage, inform and educate the public and CSO Supplemental Team on CSOs, CSO related flooding and the development of the LTCP as required by the existing NJPDES permit. This is described at length in Section 1.6.2 and includes the Completed Outreach Activities along with the names of groups that participated in those events. Most notably, the City of Camden and CCMUA have a clear plan for the ongoing operation and maintenance of existing green infrastructure in Camden through the utilization of PowerCorps Camden which is an AmeriCorps direct service program. Appendix A also includes materials relevant to the public participation process.

However, while it is clear that the required public participation requirements of the 2015 NJPDES permit have been attained in a robust and holistic manner for the City of Camden and CCMUA, there is limited discussion on public participation activities for the City of Gloucester. The LTCP must be supplemented with an update of public participation activities that have occurred for the City of Gloucester since submission of the June 2018 Gloucester City Public Participation Process Report as shown here: https://www.nj.gov/dep/dwq/pdf/CSO_PublicParticipation_GloucesterCity_20180626_1.pdf. Please revise.

**Section 2.0, Maximizing Flows to WPCF #1**

Comment 7: Section 2.1, CCMUA's Water Pollution Control Facility # 1 states the following:

> "In 2017 CCMUA completed a study of alternatives for the upgrading of its WPCF #1. The study recommended a two phase program for the treatment plant. Under phase 1 the plant would be expanded to provide 185 MGD in full secondary treatment capacity. This expansion is underway and is scheduled for completion in 2020. The study also determined that it is feasible to further increase wet weather treatment capacity up to 220 MGD using CSO related bypassing. The potential increase in wet weather treatment capacity up to 220 MGD would provide the equivalent of primary treatment and effluent disinfection prior to discharge into the Delaware River in accordance with CCMUA's NJPDES permit…"

Upgrades to the treatment plant under Phase 1, which will allow the acceptance of additional wet weather combined sewage flows from 150 to 185 MGD, are almost fully completed and the Department acknowledges the proactive manner in which the implementation of increased wet weather capacity is occurring. This project is a component of Program Element 1 and will contribute towards percent capture reductions for the Delaware River – Camden subsystem (including C-3 which is the largest outfall accounting for 16% of the total system flow). As stated in Section 5.1, Additional Control Requirements "The expansion of the WPCF#1 will also help the Newton Creek subsystem in achieving 85% capture." Phase 1 of this project is authorized in a July 18, 2019 NJPDES permit modification and was approved in a November 8, 2018 Treatment Works Approval 18-0290. Please provide a status update on this project.

Phase 2 of this project would entail a wet weather expansion to 220 MGD. This CSO related bypass has already been approved in the final NJPDES permit action dated May 1, 2020 where any CSO related bypass as a future phase is conditioned on TWA approval where there has been no relaxation in effluent limits. A cost value of $36.3 million is provided in Table 5-8 (CCMUA CSO Control Capital Cost Estimates) for this wet weather expansion. Section 4.2 of the LTCP states that "Expanding the plant up to 220 MGD wet weather capacity will enable a significant increase in the capture rate from the large Camden C-3 regulator structure." Note that C-3 comprises 16% of total CSO flow from the system as per Figure 7-1 of the June 2018 System Characterization Report as shown in Comment 12. Despite these projected reductions in percent capture, the LTCP does not include any commitment to this project or any implementation schedule. A CSO related bypass would have benefits to percent capture on a system wide basis with significant benefits to directly connected sub-watersheds. Given the flooding occurring in the City of Camden, provide an estimate on reduced flooding within the City as a result of the CSO related bypass. Please revisit the inclusion of CSO related bypass to 220 MGD as part of the overall selected CSO control strategy.

**Section 3.0, Green Stormwater Infrastructure Implementation**

Comment 8: Program Element 3 entails a framework for a Formalized Green Stormwater Infrastructure Program where it is stated that removing 10% (145 acres) of the directly connected impervious area (DCIA) would reduce the flow to the combined sewer system by approximately 100 million gallons per year. The

Department acknowledges that green infrastructure can mitigate CSO discharges particularly for smaller rain events yet also has ancillary benefits such as aesthetic improvements and reducing heat island effects.

However, there is limited information as to the potential locations for 145 acres of green infrastructure, information as to whether or not 145 acres is available in the City of Camden, and whether or not this program is also intended for the City of Gloucester. This information must be provided in order for the Department to consider this to be a viable LTCP option. In addition, please provide the basis as to how 145 acres equates to a reduction in flow to the combined sewer system by 100 million gallons per typical year and if this value was confirmed through modeling.

**Section 4.0, Mitigation of Street Flooding**

Comment 9: Section 4.1, Problem Overview states the following regarding flooding in the City of Camden:

> "Street flooding during wet weather remains a major public health and environmental concern within the City of Camden… It should be noted that the relative roles of structural capacity limitations within the sewer system and of non-structural causes such as blockages is not well understood. Therefore, as outlined in this section of the SIAR, a comprehensive program to understand and address the causes of street flooding is proposed.
>
> There are twenty sewersheds that have been associated with the reported street flooding hot spots identified in Camden's 2016 Flood Mitigation Plan. The number of locations where flooding has been reported [are shown in] Table 4-1...

**Table 4-1 – Camden Sewersheds Associated with Street Flooding**

| Sewershed / Regulator Name | # of Reported Flooding Locations | Sewershed / Regulator Name | # of Reported Flooding Locations |
|---|---|---|---|
| C1 | 5 | C16 | 1 |
| C3 | 21 | C17 | 0 |
| C5 | 5 | C22 | 8 |
| C6 | 5 | C22A | 1 |
| C7 | 4 | C23 | 0 |
| C8 | 2 | C24 | 1 |
| C9 | 1 | C27 | 4 |
| C10 | 2 | C28 | 1 |
| C11 | 5 | CFA | 2 |
| C13 / 13A | 0 | C32 | 12 |

"

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 in the selection of alternatives. Table E-1 shows that after the implementation of a wet weather expansion to 185 MGD, restoration of the Camden collection system, and 10% reduction in directly connected impervious area (DCIA) (145 acres for Camden over a timeframe of 22 years), an estimated 24 million gallons of flooding would remain in the City of Camden during the typical year. In fact, Section 1.6.2, states that "Because of Camden's aging and overtaxed combined sewer system, a one-inch rainstorm can leave major roads impassable, turn parking lots into stagnant lakes, and send sewage into parks, homes, and waterways."

In addition to the above, it appears that street flooding in the City of Camden has already been identified and studied through the preparation of the "2016 Flood Mitigation Plan" which should be provided as part of any amended LTCP. Please provide information regarding any measures that have already been taken based on this report. Also, given this report objective, it is unclear why an additional step has been added within the LTCP to further study street flooding in the City of Camden as Program Element 4 as part of a "Street Flooding Mitigation Program." Since the most significant flooding occurs near C3 and C32, it is unclear why the CSO related bypass to 220 MGD and the reduction of wet weather flow from Pennsauken into the Camden combined sewer system (sewershed C-32) are not given a higher priority within the LTCP. These projects in and of themselves could significantly mitigate street flooding. Please clarify.

Comment 10: Section 4.1, Problem Overview also states the following regarding flooding in the City of Gloucester:

> "Street flooding can occur in Gloucester City during storm events occurring between two hours before and after high tides. Flooding has occurred near the King Street pumping station which is the low point of the combined system and along Water Street.
>
> Gloucester City has a flood pump installed at the King St. pump station and another portable pump available to pump excess combined sewage when tidal conditions preclude normal drainage by gravity. In addition, Gloucester City and CCMUA coordinate the operation of CCMUA's Gloucester City pump station during high tide storm events to minimize flooding conditions.
>
> …
>
> The current understanding as to the proximate causes of street flooding at the known flooding locations is limited. Flooding event information such as flooding events dates, events per reported location, flooding duration, approximate sizes and depths of street floods and antecedent weather conditions are not currently available."

Based on the above, the LTCP contains limited information regarding street flooding in the City of Gloucester and whether this flooding is related to combined sewage or stormwater. Additional information must be provided as well as any CSO control strategies to remedy street flooding.

**Section 5.0, Additional Control Requirements**

Comment 11: As stated in Section E.6, Cost / Performance Considerations:

> "The Cities of Camden and Gloucester and CCMUA have determined to use the Presumption Approach as the regulatory basis for their CSO control strategies and have established the control of 85% of wet weather flows generated during the Typical Year as the CSO control performance target…"

The percent capture equation was provided in the June 2018 System Characterization Report and the June 2019 DEAR as follows:

$$Percentage\ Capture = 1 - \frac{(Total\ CSO\ Volume + Total\ Flooding\ Volume)}{(\text{Total System WW Inflow} - \text{Total WW Flow from Separate Sanitary Communities})}$$

Given the selection of the Presumption Approach, the derivation of percent capture is central to a review of this report. Table 5-1 is provided as follows to show the percent capture values that will be attained upon completion of upgrades to the WPCF to 185 MGD, restoration of the City of Camden combined sewer system and green infrastructure:

Table 5-1 – Typical Year Capture Impacts of Controlling Runoff from DCIA by 10%

| System / Sub-System | WPCF # 1 @ 185 MGD, Camden Hydraulic Capacity Restored | Add 10% Control of Runoff in DCIA |
|---|---|---|
| System-Wide | 78% | 81% |
| Sub-System | | |
| Delaware R. – Camden | 89% | 91% |
| Delaware R. – Gloucester | 69% | 74% |
| Delaware R. - Back Channel | 69% | 72% |
| Cooper River | 70% | 75% |
| Newton Creek | 85% | 87% |

It is then further stated:

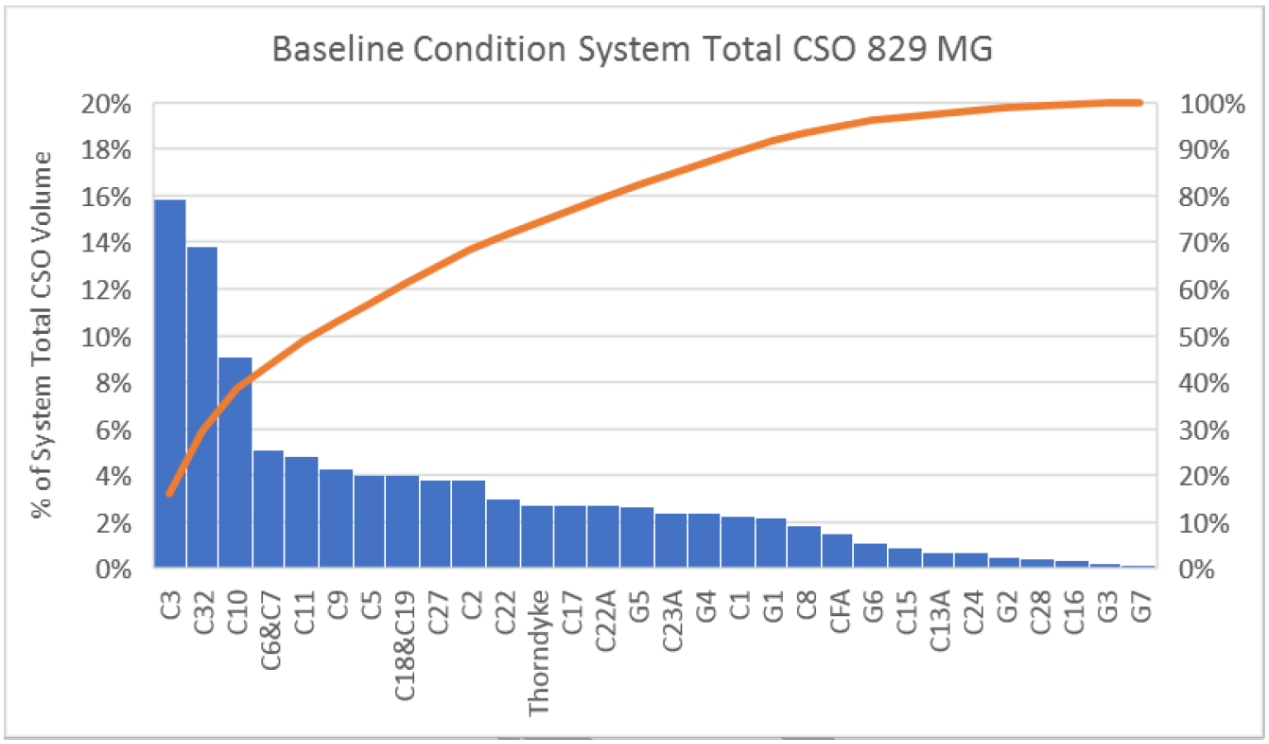
> "Additional CSO controls will be evaluated for three of the five sub-systems to achieve the control objective of 85%system-wide wet weather capture during the Typical Year. It should be noted that the controls evaluated to achieve 85% system-wide wet weather capture will be sized to also achieve 85% capture in each individual sub-systems."

In comparing Table 5-1 to Table 1-2 (as provided above in Comment 3), the system-wide percent capture values do not match (i.e., 78% versus 76%) as well as in other sections of the report (i.e., Table 1-2 (76%) versus Table 7-1 (69%)). Please provide one comprehensive table for percent capture including the various inputs to the equation that were used to derive the values above by subsystem as well as on a system-wide basis. In addition, please confirm that the system-wide values include a summation of the inputs across all the subsystems and are not simply an average of the five systems. Approval of this report hinges in part on the inputs and results of this equation being clearly demonstrated and reproducible.

Comment 12: Section 5.1, Additional Control Requirements states the following regarding the Delaware River backchannel subsystem:

> "CCMUA proposes to achieve 85% capture in the Delaware River backchannel subsystem through the reduction of wet weather flows from Pennsauken Township and increasing the wet weather flow rates through the Baldwins Run pump station**."**
>
> **…**
>
> Due to their hydraulic isolation (varies pump stations) from the WPCF #1, the Delaware River – Gloucester City, the Delaware River Back Channel and the Cooper River sub-systems would not achieve increased capture with the potential expansion of the plant treatment capacity. The hydraulic limitations in the existing Camden and Gloucester interceptor sewers preclude the conveyance of additional wet weather flows to WPCF #1…"

Currently, the overflow from the combined sewer system from the C-32 sewershed is discharged through this CCMUA outfall into the Delaware Back Channel which is an important ecosystem that would benefit from protection through a reduction in CSO flow. In addition, the Department is aware that these combined stormwater and sanitary flows that come from Pennsauken take up needed capacity within the Camden combined sewer system. The cost of this project is estimated at $43.3 million as per Section 5.3.3, Permittee Specific Cost Estimates. The location and hydraulic connection of this project within the system mean that it could occur independently from projects related to the restoration of the Camden combined sewer system and it is stated elsewhere in the report that this project would significantly reduce flooding in the Cramer Hill neighborhood. In addition, C-32 comprises a significant portion of the system-wide CSO flow in the CCMUA/Camden/Gloucester system, as per Figure 7-1, Percentage of System Total CSO for Each Outfall and Cumulative Distribution (Baseline Condition) of the June 2018 System Characterization Report:




Based on the above, please supplement this section with additional detail regarding the Camden-Pennsauken disconnect project including an explanation of which flows (i.e., stormwater, combined sewage) would be separated out and diverted to a direct outfall. In addition, please describe any stormwater or satellite treatment (i.e., disinfection) that would be incorporated. Finally, please provide a detailed schedule so that this project is prioritized to take place in the next five year permit cycle.

Comment 13: Section 5.1, Additional Control Requirements includes an analysis of satellite storage and treatment in order to achieve 85% capture in the Cooper River and Gloucester City subsystems. As stated within this section, these subsystems are hydraulically isolated from the WPCF #1 and therefore do not achieve increased capture by the potential expansion of the plant treatment capacity. It is further stated that the hydraulic limitations in the existing Camden and Gloucester interceptor sewers also preclude the conveyance of additional wet weather flows to WPCF #1. The required capacities for storage and satellite are shown in Table 5-2:

**Table 5-2 – Required Satellite Control Capacities**

| Sub-System | Locations | With 10% DCIA Reduction | | Without 10% DCIA Reduction | |
|---|---|---|---|---|---|
| | | Storage Volume in Million Gal. | Treatment Capacity in MGD | Storage Volume in Million Gal. | Treatment Capacity in MGD |
| Delaware River – Gloucester | G-4 / G-5 | 0.6 | 4.1 | 1.2 | 6.8 |
| | G-1 | 0.5 | 2.3 | 0.7 | 4.4 |
| Cooper River | C-22 / C-22A | 1.3 | 20 | 2.6 | 21 |
| | C-27 / Thorndyke | 3 | 20.4 | 3.5 | 38.5 |
| | C17 | NA | NA | 0.4 | 4.8 |

Section 5.2.1, Satellite Treatment includes a treatment process overview regarding enhanced high rate clarification and includes the following statement:

> "Solids removed through the satellite treatment process range in concentration from around 0.1% to 1.0% with an average of around 0.3% and are typically discharged to the interceptor sewer for transport and treatment at the wastewater treatment plant."

This statement seems misplaced within this section as these estimates do not seem appropriate for enhanced high rate clarification. In addition, while there are cost estimates included in Section 5.0, there is no commitment or schedule for satellite treatment or storage where these technologies are necessary in order to attain 85% capture.

Comment 14: Section 5.4.2, Potential Impacts of Cooper River Designated Use Reclassification describes amendments to the New Jersey Surface Water Quality Standards at N.J.A.C. 7:9B where the Cooper River is now classified as a Category One waterway from the U.S. Route 30 crossing to the confluence with the Delaware River. Based on this reclassification, the report concludes:

> "The CSO Policy states that overflows to sensitive areas should be eliminated or relocated wherever physically possible and financially achievable. A conveyance and treatment alternative that would eliminate untreated overflows to the Cooper River was evaluated. To effectively eliminate the CSO discharges to this area, the wet weather conveyance interceptor and high rate treatment facility could be sized to capture 100% of wet weather flow not entering the existing interceptor during the Typical Year..."

The Department acknowledges that there has been a recent regulatory change in the receiving waterbody classification for Cooper River in that it has been reclassified as a FW2-NT(C1) waterbody as described above. See https://www.nj.gov/dep/rules/rules/njac7_9b.pdf . The Department also acknowledges that N.J.A.C. 7:9B-1.5(d)2iii states the following:

"iii. Category One Waters shall be protected from any measurable changes (including calculable or predicted changes) to the existing water quality. Water quality characteristics that are generally worse than the water quality criteria, except as due to natural conditions, shall be improved to maintain or provide for the designated uses where this can be accomplished without adverse impacts on organisms, communities, or ecosystems of concern."

The classification of "sensitive areas" should not be confused with the C1 designation since these are separate and distinct regulatory requirements. Consistent with the intent of the Federal CSO Control Policy Part IV.G.3.a of the NJPDES CSO permit states the following:

"a. The permittee's LTCP shall give the highest priority to controlling overflows to sensitive areas, in accordance with D.3.a and G.10. Sensitive areas include designated Outstanding National Resource Waters, National Marine Sanctuaries, waters with threatened or endangered species and their habitat, waters used for primary contact recreation (including but not limited to bathing beaches), public drinking water intakes or their designated protection areas, and shellfish beds."

In its December 17, 2018 findings on the permittees' June 2018 "Baseline Consideration of Sensitive Areas" report the Department agreed with the permittee's contention that all of the outfalls (with the exception of the outfalls that discharge to Newton Creek) are considered sensitive areas thereby minimizing the utility of a prioritization scheme. Because the Federal CSO Control Policy and existing NJPDES permit require that CSOs be addressed in the Cooper River subsystem within the LTCP it is not acceptable to dismiss addressing these outfalls because it is cost prohibitive.

**Section 6.0, Financial and Institutional Capability**

Comment 15: As previously described, the LTCP lacks specificity regarding CSO control projects and compliance with 85% wet weather capture consistent with the Presumption Approach. Despite this lack of strategy, the LTCP does include an analysis of Financial and Institutional Capability in Section 6.0 where this information is also referenced in other sections of the LTCP. In fact, the Executive Summary E.8.4 and Section 7.8.3 state that the "base case affordability/financial capability assessment assumes a 22-year implementation schedule based on the durations, planning, design and construction." This assessment ultimately results in a "high burden" for the cities of Camden and Gloucester and "mid-range" burden to CCMUA as per Table 6-12 – The Financial Capability Matrix. However, these costs do not match the proposed and/or possible projects. For example, costs are provided for satellite treatment and storage in determining that this LTCP will result in a "high burden" as part of the Financial Capability Assessment yet there is no commitment for satellite and storage for the cities of Camden and Gloucester so the information provided does not conform to the conclusions for Financial Capability.

Since the LTCP does not contain a long term strategy, schedule and implementation framework for implementation of CSO controls in compliance with the Presumption Approach the Department is not commenting on cost and financial analysis at this time. The Department will comment on those the financial capability components as revisions to the LTCP are made and the alternatives are selected.

**Section 7.0, Selected Long Term Control Plan**

Comment 16: Section 7.1 also states the following:

"Due to the extremely limited affordability and financial capabilities of the Cities of Camden and Gloucester, as demonstrated in Section 6, these controls will require significant external funding and will likely need to be implemented over an extended period of time as resources permit."

The objective of the LTCP is to select CSO control alternatives to demonstrate compliance with the Federal CSO Control Policy where the resultant schedule length is determined based on the financial capability of the affected municipality. The above statement which essentially states that a plan is not being provided is not acceptable.

Comment 17: Section 7.1, Selected Long Term Control Program Overview and Sections 7.2 through 7.8 includes detail regarding the various LTCP program elements, that are proposed to be implemented in an iterative manner, and are listed as follows:

1. Completion of Current Projects
2. Efficacy Evaluation
3. Formalized Green Stormwater Infrastructure Program
4. Street Flooding Mitigation Program
5. Cooper River Water Quality Optimization Program
6. Additional Structural Controls

Comments 17a through 17e apply to these steps above.

Comment 17a: Under Program Element 1 – Completion of Current Projects, Section 7.2.2 describes the City of Camden Hydraulic Capacity Restoration where two of the five elements are as follows:

"

- ***Regulator Rehabilitation*** – Camden undertook a comprehensive system-wide inspection of its regulator structures which determined that the regulator mechanisms required extensive repairs. Repairs have been prioritized for the regulator mechanisms for Camden regulators C-1 through C-9, thereby enabling the control of flows into the Camden interceptors. Flows to the other Camden regulators can be controlled through the Arch Street, Pine Street and Baldwin's Run pump stations and through a control gate immediately upstream of the treatment plant, eliminating the need for the regulator controls. To maintain maximum flexibility should the need arise in the future to re-use these regulators as a part of flood prevention, the deteriorated mechanisms will be removed and their anchor systems replaced with stainless steel plates.

- ***Overflow Outfall Cleaning*** - Concurrent with its regulator rehabilitation project, Camden is addressing blockages that it has identified blockages at some of the CSO outfalls. Dredging is required to remove to clear these blockages. The City of Camden has been working closely with CCMUA and NJDEP to complete this program as expeditiously as possible. Two projects were developed with CCMUA currently working on the most critical nine of these outfalls and a second project by City for the clearing the remainder will commence in parallel with regulator project."

It is the Department's understanding that CCMUA has completed 9 of the 18 outfall dredging projects yet the City of Camden has not yet commenced dredging of the remaining 9 outfall pipes. Please verify. It is also the Department's understanding that the regulator replacement project to be completed by the City of Camden has not yet begun. Please provide a status update on both these projects.

Given that these projects relate to Nine Minimum Controls as required by the City of Camden's NJPDES permit, the ongoing failure to progress on these projects could result in enforcement action. These outfall blockages also contribute to street flooding in the City of Camden which is a public health concern.

Comment 17b: Under Section 7.4, Program Element 3 – Formalized Green Stormwater Infrastructure Program the following is stated:

"…CCMUA and the Cities of Camden and Gloucester are targeting a 10% or around a 145 acre reduction in impervious areas that are directly connected to the combined sewer system (DCIA) through the installation of GSI. CCMUA and the Cities are proposing the establishment of a framework for the implementation of GSI that would formalize, expand upon and support the current efforts of groups such as the Camden SMART initiative…The framework will include specific performance targets for GSI implementation, e.g. 30 acres per five year NJPDES permit cycles."

It is then stated later in Section 7.7, Program Element 6 – Sub-System Additional Structural Controls to Achieve 85% Capture that "CCMUA has evaluated the potential to expand the wet weather treatment capacity of its WPCF up to 220 MGD." It is then further stated that **"**the proposed structural controls outlined above are proposed not to occur until after the results of program elements one through four are fully implemented and their impacts on CSO evaluated though flow monitoring and modeling." This language conflicts with the implementation schedule included in Table E-13 as well as in Table 8-1 where the CSO related bypass is scheduled to occur in years 2031 through 2035. It is not acceptable to delay the effects from a CSO related bypass since they can be realized in the short term, until after "program elements one through four are fully implemented" as described later in Section 7.1. Given the uncertainty and lack of specifics for the locations for green infrastructure sites at the scale described in the LTCP, the CSO related bypass should not be delayed until that step is completed. It is not acceptable to wait for green infrastructure to be implemented.

Comment 17c: Section 7.4, Program Element 5 – Cooper River Regional Water Quality Optimization Strategy describes a strategy that would take a watershed-based approach to reducing the discharge of pathogens and other pollutants into the Cooper River that degrade it's recreational and economic redevelopment usage as well as its aquatic habitat. As noted within this section, the "intent of the strategy is to identify *what, how, and who* – is needed to achieve these goals."

A Water Quality Optimization Strategy is not a CSO control alternative but rather a framework to study and develop a strategy. Such a strategy is more appropriate for an evaluation of alternatives as opposed to the LTCP which requires a selection of a strategy to minimize or eliminate CSOs is required to be included. Note that the DEAR included three 85% capture alternatives in Section 5.3.4 namely Cooper River 1 – Satellite Treatment or Storage Only; Cooper River 2 – Satellite Treatment / Storage + Conveyance Upgrades; and Cooper River 3 – Conveyance Only with a summary table from the DEAR is provided as follows:

**Table 5-5 Summary of Performances for Sub-System Cooper River**

| Performance Parameters | Control Alternative Baseline | 185 MGD WPCF With Control of Runoff from 10% of DCIA | Range of Results from above Alternatives |
|---|---|---|---|
| Subsystem Annual CSO, MG | 170.5 | 142.0 | 82.7-76.7 |
| CSO frequency | 63-25 | 63-24 | 62-4 |
| Subsystem percent capture | 70% | 75% | 86% - 85% |

Please revisit and select CSO control strategies for the Cooper River.

Comment 17d: Under Section 7.7 Program Element 6 – Sub-System Additional Structural Controls to Achieve 85% Capture, the following is stated:

> ***"Delaware River Back Channel***: The 85% control target will be achieved in the Delaware River Back Channel through two projects. First, the stormwater (?) wet weather/ combined sewer flows that are currently discharged from the Pennsauken Township sanitary [storm] sewer system into the Camden combined system via Pennsauken's High Street regulator structure will be re-routed for discharge to the Delaware River back channel after treatment and disinfection. The second component of the Delaware Back Channel controls will be the modification and reconfigurations of regulator structures and power supplies associated with the Baldwins Run pump station to enable full utilization of its 25 MGD capacity."

Despite the clear benefits in the reduction of CSOs by reducing wet weather flows from Pennsauken Township by increasing the wet weather flow rates through the Baldwins Run pump station as described in Section 5.1, this project is designated to take place between 2026 through 2030 as per Table E-13 – Implementation Schedule (Based on five-year NJPDES permit cycles). Please provide a detailed implementation schedule for this project and reschedule it so that it takes place in the first NJPDES five year permit cycle. In addition, please clarify the wastewater components of any remaining CSO discharge and additional details regarding disinfection.

Comment 17e: Section 7.7, Program Element 6 – Sub-System Additional Structural Controls to Achieve 85% Capture describes a suite of controls to attain 85% capture. This section also states:

> "CCMUA and the Cities recommend against the selection between satellite storage and treatment at this time. As will be detailed in Section 8 (Implementation), the proposed structural controls outlined above are proposed not to occur until after the results of program elements one through four are fully implemented and their impacts on CSO evaluated though flow monitoring and modeling. Moreover, additional advancements in wet weather treatment and storage technologies and in are likely to occur. In addition, water quality standards or other regulatory requirements may change, e.g. as a result of DRBC's current water quality monitoring efforts."

As stated previously, the LTCP is required to include a clear plan to attain compliance and it is unacceptable to not include a plan pending treatment technologies, water quality standards or other regulatory requirements which are always changing.

In addition to the above, there are no specific projects or implementation schedule within Program Element 6 to address CSOs in the City of Gloucester to mitigate CSO issues. This is in contradiction to the approved DEAR which includes three alternatives to attain 85% capture for the Delaware River – Gloucester subgroup as shown in Section 5.3.2 of the June 2019 DEAR. Below is a summary of these projects from the DEAR:

- Delaware River – Gloucester 1 – Satellite Treatment or Storage Only (control of runoff from 10% of the directly connected impervious area (DCIA) reduction using GSI; expansion of WPCF #1 to 185 MGD; 32 MGD high rate treatment or 2.4 MG storage facility serving G-4 and G-5)

- Delaware River – Gloucester 2 – Satellite Treatment/Storage + Increased Conveyance (control of runoff from 10% of the DCIA reduction using GSI; expansion of WPCF #1 to 185 or 220 MGD; operate CCMUA's Gloucester City PS at 35 MGD; 11.7 MGD high rate treatment or 0.9 MG storage serving G-4 and G-5)

- Delaware River – Gloucester 3 – Conveyance (control of runoff from 10% of the DCIA reduction using GSI; potentially adding additional wet weather treatment capacity beyond 220 MGD at the WPCF #1; upgrades to Gloucester City regulators G-3, G-4 and G-5; increased capacity of Gloucester City interceptor between regulators G-3 through G-5 and to CCMUA's Gloucester City PS; increased CCMUA's Gloucester City PS at 45 MGD)

- 130 MGD wet weather capacity to WPCF #1; upgrades to Gloucester City regulators G-3, G-4, and G-5; increased capacity of Gloucester City interceptor between regulators G-3 through G-5 and to CCMUA's Gloucester City PS; Increased CCMUA's Gloucester City PS at 45 MGD)

The objective of the LTCP is to select alternatives from the DEAR. Please provide a strategy to attain a minimum of 85% wet weather capture for the Delaware River - Gloucester subsystem.

Comment 18: Section 7.7 Program Element 6 – Sub-System Additional Structural Controls to Achieve 85% Capture includes a list of projects including satellite and storage. The State of New Jersey and the Department are working to address and mitigate the impacts of climate change where additional information is available here: https://www.nj.gov/dep/climatechange/. Climate change can have an impact on the design for resiliency for CSO storage and high rate treatment and resiliency requirements must be considered in the design of any infrastructure. 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.

Please address how the selected CSO control alternatives address climate change and sea level rise.

**Section 8.0, Implementation Schedule and Adaptive Management**

Comment 19: Adaptive Management is referenced throughout the LTCP where Section 8.3, Adaptive Management states the following:

"The implementation schedule outlined in Table 8-1 above includes an evaluation at the completion of each five year NJPDES permit cycle. Based on these evaluations, CCMUA and the Cities will revise the LTCP as necessary with NJDEP's coordination and approval. This process exemplifies the concept of adaptive management.

Adaptive Management, as defined by the EPA, is "the process by which new information about the health of a watershed is incorporated into the watershed management plan."[8-1] In the context of the SIAR adaptive management assumes that while the CSO control goals will remain constant, the tactical approaches to achieving the goals must be adjustable.

8-1 Watershed Analysis and Management Guide for Tribes (2000) EPA Watershed Analysis and Management Project. Step 5 page 1."

As noted in this section, 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 the next NJPDES permit renewal to allow flexibility from the perspective of treatment technology advancements. However,

the permittee is obligated to set forth a path for compliance with the 85% wet weather capture requirement under the Presumption Approach through measures set forth in the LTCP to ensure that compliance is attained. 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.

Comment 20: Section 8.3, Adaptive Management also states the following:

> **"**CCMUA and the Cities will also be subject to a variety of future conditions beyond their controls which may materially affect the benefits, feasibility and scheduling of the CSO controls described in this SIAR, thereby triggering a need to revise the LTCP…"

The LTCP then lists a number of triggering conditions including, but not limited to, changing demographics, municipal collection system conditions, emergent regulatory requirements, emergent economic conditions and trends, changing water quality standards and guidance, changes in technologies, unavailability of supplies, materials, contractors or labor necessary to implement the LTCP etc. While the Department acknowledges that there are factors that can impact the schedule, any changes to the LTCP must be provided as an amended document with a certification statement as required by the NJPDES permit. Changes to the LTCP could also result in the need for a modification to the NJPDES permit provided the implementation schedule for those projects is included in the permit.

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

Sincerely,

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