Addendum to the
1994 Combined Sewer Overflow Control Program Manual
June 22, 2018

As the Department of Environmental Quality(DEQ), Water Resources Division (WRD), moves forward with nearly three decades of implementing Combined Sewer Overflow (CSO) control, the need for additional CSO Program considerations have been discussed within the WRD. The current CSO Program requirements are consistent with the 1994 CSO Control Manual, U.S. Environmental Protection Agency CSO regulations and requirements, and knowledge gained as numerous treatment facilities (retention treatment basins, screening and disinfection facilities, etc.) have come online. The purpose of this memo is to update the 1994 CSO Control Manual based on program experience and to better align the CSO Program with implementation of related wet weather programs – notably postconstruction program requirements in individual Municipal Separate Storm Sewer System (MS4) permits and the 2002 Sanitary Sewer Overflow (SSO) Policy and associated 2003 Clarification Statement. Additionally, there is a need to update the CSO Control Manual to aid in identifying progress and allow for flexibility for the final stages of correction program completion. Issuance of this memo serves as an amendment to the 1994 CSO Control Manual.

MS4 Program Alignment

MS4 individual permits require permittees to implement and enforce a program to address postconstruction storm water runoff from new development and redevelopment projects that disturb one acre or more, including projects less than one acre that are part of a larger common plan of development or sale, and that discharge into the permittee's regulated MS4. Postconstruction storm water runoff controls are required to limit the rate and volume of storm water runoff and reduce pollutant loadings from sites that undergo development or redevelopment projects. The potential to implement site control measures to address storm water runoff transcends areas served by both separated and combined sewers as an approach to mitigate the effects of the built environment and intensifying storm events. The following framework is offered for consideration of additional control measures for those combined areas that have implemented treatment that has been deemed adequate (either presumptive or demonstrative), and that are wholly within or directly adjacent to urbanized areas:

1. For combined areas where treatment devices have been deemed adequate and are wholly within urbanized areas (subject to MS4 permits) or are directly adjacent to urbanized areas, requirements to align the CSO Program with existing MS4 postconstruction requirements will be addressed as part of reissuance of National Pollutant Discharge Elimination System (NPDES) permits with CSO requirements.

2. Other combined areas that are outside of urbanized areas, where treatment has been deemed adequate, may have additional control measures added to NPDES permits as they are reissued, upon the discretion/justification of the WRD's Permits Section manager in consultation with the appropriate WRD district supervisor and the statewide CSO/SSO engineering specialist.

3. The regulatory basis and rationale for this alignment is based on Section 4108(1) of Part 41, Sewerage Systems, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, which states, in part, that "The department shall exercise due care to see that sewerage systems are properly planned, constructed, and operated to prevent unlawful pollution of the streams, lakes, and other water resources of the state..." In addition, justification for additional control measures can be further based upon the need

for equitable development and redevelopment opportunities in communities served by combined sewers and separate storm sewers, infrastructure resiliency, and to mitigate increased runoff volume and rainfall intensity resulting in the increased frequency of treated discharges or lesser treated discharge quality over time due to climate change.

4. For those permittees that fall under item 1, above, additional control measures include the following, based on choice of the permittee: (a) postconstruction storm water runoff control requirements for new development and redevelopment projects that are consistent with the embedded or adjacent MS4 individual permit(s) (no review or approval by the DEQ is needed); (b) postconstruction storm water runoff control requirements for new development and redevelopment projects based on other criteria to reduce volume and frequency of discharge (subject to review and approval by the DEQ); or (c) a green infrastructure program implemented throughout the combined sewer collection area (subject to review and approval by the DEQ).

SSO Program Alignment

The 2002 SSO Policy and 2003 Clarification Statement were adopted to address SSOs and treatment plant bypasses. The policy establishes a threshold storm, or remedial design standard, for which all separate sanitary sewer systems and associated treatment plants need to adequately transport and treat flows generated as a result of the remedial design standard. A performance standard of one overflow event per ten years has been established as an equivalent standard. While the DEQ does not authorize the discharge of raw or partially treated overflows, the policy states that the DEQ will consider enforcement discretion for communities that have implemented or are implementing a correction action program consistent with the SSO Policy.

To provide consistency between the SSO and CSO Programs, the concept of enforcement discretion for certain discharges from combined sewer systems shall be implemented. Enforcement discretion shall be considered for untreated CSOs that are demonstrated to discharge only during extreme events. Extreme discharges are defined as: (a) no more than one untreated discharge in ten years from a CSO outfall during the April 1 through October 31 growth period; or (b) modeled to not discharge during the 3.9-inch 24-hour storm event (during growth period, with normal soil moisture, and rainfall distributed to a Soil Conservation Service Type II distribution). The 3.9-inch storm event may be revised in the future based on new National Oceanic and Atmospheric Administration precipitation data. The performance standard can be based on actual monitoring data normalized for a typical and representative ten-year period of rainfall record, or predictively determined based on a calibrated and verified continuous model using a typical and representative ten-year period of rainfall record, or other method as determined acceptable by the DEQ.

This concept addresses CSO outfalls consistently with SSO outfalls according to the 2002 SSO Policy and 2003 Clarification Statement. In such cases, the DEQ does not intend to require further CSO control should a CSO outfall be adequately demonstrated to only discharge at the extreme event.

Minimal Discharge Concept

Since its inception, there has been much progress resulting from implementation of the Michigan CSO Program. Progress is evident by the number of untreated outfalls that have been eliminated and the reduction in volume of untreated CSO. However, as some communities approach the final stages of the Long-Term Control Plan (LTCP), there is a need for other indicators of progress. The minimal discharge concept is hereby introduced.

There may be some untreated CSOs that are identified to discharge at a minimal frequency and volume. Minimal discharge is defined as actual monitoring of a volume determined on a case-by-case basis between the permittee and the DEQ. As an example, minimal discharge is defined in the Great Lakes Water Authority – Water Resources Recovery Facility NPDES permit as actual monitoring of a volume less than 0.3 million gallons of discharge over a five-year period. As LTCPs are completed, such minimal discharges may be eliminated or only discharge during extreme events. In such cases, the DEQ does not intend to require further CSO treatment at these minimal discharge outfalls. Note that these untreated CSOs are flexible and can be adjusted with the adaptive management CSO correction program described below.

Adaptive Management CSO Correction Program Approach

For some combined systems, specifically those that have achieved 95 percent control of their annual CSO volume, additional CSO control measures may be needed to fully comply with Michigan Water Quality Standards. As such permittees move into the final phases of the CSO Program, it may be appropriate to plan and schedule the remaining control measures, taking into account what has been put in place to date and lessons learned, the unique technical and financial situation of the permittee, and the nature of the remaining CSO challenges. For such cases, the permittee may proceed with remaining CSO corrections using an adaptive management approach. Under an adaptive management approach, progress will be based on technical feasibility and maximum financial progress to meet CSO objectives. This means that as new information and experience is gained from implementation of the LTCP, this knowledge may be used to complete the LTCP. Such information and experience may include, but is not limited to: (1) evaluation of existing CSO projects and new treatment technologies, (2) evaluation of real-time collection system controls, (3) more accurate and complete data on CSO discharge frequency and volume, (4) benefits of less flow to the collection system from green storm water infrastructure, (5) benefits of less flow to the collection system due to a drainage charge program and storm water ordinance, (6) benefits of less flow to the collection system resulting from a sewer rehabilitation program, and (7) any other pertinent information. Based on the above, future CSO controls can be adapted to best provide cost-effective elimination of discharges, adequate treatment of discharges, or classification of discharges as minimal or extreme (see above for minimal and extreme discharge definitions).