

Use of reserve capacity in South Metro Mississippi River TSS TMDL

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In the *South Metro Mississippi River Total Suspended Solids (TSS) Total Maximum Daily Load (TMDL)*,¹ reserve capacity is used for conversion of some continuously discharging municipal wastewater treatment plants (WWTPs; i.e., mechanical facilities) to controlled discharge WWTPs (i.e., stabilization ponds). The TMDL is based on a 32 mg/L site specific TSS standard. The minimum secondary treatment standards include an exception for pond WWTPs allowing for TSS effluent limits of 45 mg/L. Because the effluent limit exceeds the river's TSS criterion, permits for these conversions are not eligible for wasteload allocation (WLA) expansion, and the TMDL set aside a reserve capacity for these WWTP conversions. The loading capacity, WLAs, and reserve capacity are expressed as both daily and annual timesteps.

While the daily loads for new stabilization pond WWTPs are larger than their original daily WLAs due to the design and operation of these types of facilities, the new annual loads may be smaller than their original annual WLAs due to the overall reduction of influent design flows compared to the existing facilities. If conversions of old mechanical WWTPs to new stabilization pond WWTPs continue to occur in the future, and if the TMDL's daily reserve capacity is lowered to account for the facilities' increased daily WLAs but the annual reserve capacity is increased to account for their reduced annual WLAs, it is likely that the available daily reserve capacity will be exhausted sooner than the available annual reserve capacity.

In the case of TSS, the daily WLA is the functionally important WLA because wastewater permits do not typically assign annual TSS permit limits. Therefore, recognizing that this portion of the South Metro Mississippi River TSS TMDL's reserve capacity is only available for existing mechanical WWTPs that are being replaced by new stabilization pond WWTPs, for tracking purposes the change in both the daily and the annual WLA should be subtracted from the available reserve capacity. The reduction in *annual* reserve capacity should be calculated proportional to the change in *daily* reserve capacity. This will ensure that the amount of available daily and annual reserve capacity will decrease proportionally.

¹ MPCA 2015. Document wq-iw9-12e. <https://www.pca.state.mn.us/sites/default/files/wq-iw9-12e.pdf>