Name of Toolbox Element - Delta Management for Stormwater, CSO, and Wastewater Wasteload Allocations

1. Introduction / Overview

The Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load Water Quality Improvement Report (TMDL) established wasteload allocations (WLAs) for Washington dischargers, which are illustrated in Table 5 of the TMDL. The WLAs are for Ammonia (NH_3-N), Total Phosphorus (TP), and Carbonaceous Biological Oxygen Demand (CBOD). These WLAs were established for each discharger based on TMDL Model Scenario 1 inputs into the CE-QUAL-W2 model.

The TMDL also provides for "Delta Elimination" and "Target Pursuit Actions" in recognition that the implementation of additional treatment technologies alone at a point source may not be able to reduce permitted discharges to the levels derived from the WLAs established in the TMDL.

WLAs were established for wastewater discharges, stormwater discharges from municipal separate storm sewer systems (MS4s), and combined sewer overflows (CSOs). Dischargers may have one, two, or all three systems. This toolbox establishes that compliance with the total WLA for each discharger is the sum of all of its discharge contributions from each system. Credits may be traded internally so that the total WLA from all systems combined does not exceed the total WLA assigned for the discharger.

2. Toolbox Concept

The toolbox concept of Delta Management for Stormwater, CSO, and Wastewater addresses the cumulative effect of a discharger with multiple sources. Table 5 of the TMDL assigned WLAs for wastewater, stormwater, and CSOs. Dischargers may have one, two, or all three systems. In the case where a discharger has more than one type of system, compliance with the total WLA for that discharger is measured by the sum of all of its discharge contributions from each system. Credits may be traded internally so that the final sum of all WLAs determines compliance rather than each individual system addressed separately.

For example, Discharger A has a wastewater treatment plant, separate storm sewer system, and CSO system. The following table depicts an example each of compliance and non-compliance using this Delta Management tool. Only total phosphorus is shown in the example for simplicity; however, this tool applies to CBOD and ammonia as well.

Delta Management for Stormwater, CSO, and Wastewater Example	
Example Wasteload Allocations for Phosphorus	
	Total Phosphorus (lb/day)
Wastewater WLA	10
Stormwater WLA	3
CSO WLA	1
Total WLA	**14**
Example of Compliance	
	Total Phosphorus (lb/day)
Wastewater	7
Stormwater	6
CSO	0.5
Total	**13.5**
Example of Non-Compliance	
	Total Phosphorus (lb/day)
Wastewater	8
Stormwater	6
CSO	0.5
Total	**14.5**

In the example above, Discharger A has a total combined wastewater, stormwater, and CSO WLA of 14 lbs/day total phosphorus. If the actual stormwater discharge is greater than the stormwater WLA, but the discharge from wastewater, stormwater, and CSO was 13.5 lbs/day (less than the combined WLA of 14 lb/day), Discharger A is in compliance. If the actual discharge from wastewater, stormwater, and CSO was 14.5 lbs/day (greater than the combined WLA of 14 lb/day), Discharger A is not in compliance.

3. Data Collection, Sampling, and Research Needed

The stormwater WLA in the TMDL is for Washington sources only, and was calculated using the Simple Method in Appendix K of the TMDL. Idaho stormwater sources were also estimated using the Simple Method in Appendix K, although WLAs were not assigned for Idaho in the TMDL. In order to implement this toolbox, the total proportion of the stormwater WLA will first need to be calculated for each municipality. The same assumptions and methods should be used so that each municipalities' stormwater WLA is comparable to the TMDL.

Stormwater monitoring will be needed to evaluate actual stormwater loading. The City of Spokane, City of Spokane Valley, and Spokane County were re-issued Phase II Eastern Washington Municipal Stormwater Permits, effective August 1, 2014. Appendix 2 of the permit stipulates required stormwater monitoring relative to the Spokane River DO TMDL. The required monitoring is to determine pollutant loading for phosphorus, ammonia and CBOD.

For the City of Spokane, CSO monitoring will be conducted to evaluate actual CSO loading. Ongoing sampling is conducted at each waste discharge facility to determine pollutant loads.

4. CE QUAL W2 Modeling Requirements for DO TMDL Equivalency (developed as part of step 2)

5. Permit Provisions (developed as part of step 3)