

Appendix F

TSS Removal Efficiency Calculations

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TSS Removal Efficiency Calculations

The percentage of TSS removed by the entire treatment train shall be calculated by applying the TSS removal rates set forth in *Section 5* of the Town of Greenwich Drainage Manual for each BMP in the order in which it is used in the stormwater management system. A simplified equation for the total TSS removal rate (R) for two BMPs in series is:

$$R = A + B - [(A \times B) / 100] \quad (F.1)$$

where: R = total TSS removal rate (%)
 A = TSS removal rate of the first or upstream BMP (%)
 B = TSS removal rate of the second or downstream BMP (%)

This approach can be extended to more than two BMPs in series. A worksheet for calculating TSS removal efficiencies for multiple BMPs in series and example TSS removal calculations is provided at the end of this section.

Example: A stormwater management system consists of both a 50-foot wide vegetative filter strip followed by a water quality swale with a sediment forebay to collect and treat runoff from a small commercial parking lot. Runoff from the parking lot will sheet flow off the parking lot through the filter strip, before being discharged to the water quality swale.

Solution: From *Table 5-6* in *Section 5* of the Town of Greenwich Drainage Manual, the TSS removal rates for these individual BMPs are:

Vegetative Filter Strip (at least 50 ft wide) = 45%
Water Quality Swale (with sediment forebay) = 70%

From Equation F.1:

$$R = A + B - [(A \times B) / 100]$$

$$R = 45 + 70 - [(45 \times 70) / 100] = 115 - 31.5 = 83.50\% \text{ Total TSS Removal Rate}$$

INSTRUCTIONS:

1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location:

**TSS Removal
Calculation
Worksheet**

A BMP ¹	B TSS Removal Rate ¹	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
		1.00		

Total TSS Removal =

**Separate Form Needs to be
Completed for Each Outlet or
BMP Train**

Project:

Prepared By:

Date:

*Equals remaining load from previous BMP (E) which enters the BMP