Regions 1: Summary of Connecticut's Eagleville Brook TMDL for Biological Impairment Using Impervious Cover

Impairment/Pollutant/Sources: Eagleville Brook is impaired for non-attainment of the Class A *aquatic life criteria* of Connecticut's water quality standards. CT's TMDL submission is supported by a stressor identification analysis which concludes that biological impairments are most likely due to a combination of pollutants related to stormwater runoff from developed areas, and other related stressors (such as the physical impacts of stormwater flows). The major source of stormwater is runoff from the impervious surfaces within the watershed (e.g., roads in the Town of Mansfield, and campus of UCONN). The current conditions of percent impervious cover (%IC) in the contributing watersheds of the impaired Eagleville segments are 27% (on UCONN campus), 14%, and 5%.

Water Quality Target/Loading Capacity: Eagleville Brook is a Class A waterbody not meeting CT's Class A water quality criteria and designated uses. The relevant aquatic life criteria are based on distribution and abundance metrics for benthic invertebrates which inhabit lotic waters, and are described in CT's narrative water quality standards applicable to Class A waters. *Impervious cover* in the contributing watershed is used as a surrogate for the instream water quality target (attainment of aquatic life criteria) and for the loading capacity. The loading capacity or TMDL target for Eagleville Brook is set at 12% IC, which is the threshold observed for applicable CT streams below which the streams are capable of supporting a macroinvertebrate community that meets aquatic life use goals. CT's Rapid Bioassessment Protocol III data from 125 small (<50 sq. mi.) watersheds indicate that no stream monitoring location with >12% impervious cover in the upstream watershed meets CT's criteria for full support of aquatic life use.

Load and Wasteload Allocations / Margin of Safety/Seasonal Variation: The TMDL loading capacity of 12% was reduced 1% to provide for a margin of safety, yielding an overall allocation target of 11%. The TMDL applies the 11% IC target to all stormwater drainage areas and affects all sources subject to load allocations (LA) and wasteload allocations (WLA) in the watershed. The % impervious cover reductions required to achieve the 11% WLA and LA target are also calculated for each impaired segment (see Table below). The %IC TMDL and WLA/LA targets apply at all times (instantaneously, daily, monthly, seasonal and annual) and will achieve reductions in stormwater runoff volume in all storm events whenever they occur (e.g., on any given day) throughout the year. Seasonal variation is considered because the IC targets are based on responses of stream biota which integrate the effects of stormwater volume and pollutant loads that vary throughout the year.

Implementation/Monitoring/Public Support: CT DEP provides general and specific implementation recommendations in the TMDL, and recommends using an adaptive management approach toward lessening stormwater impacts and improving water quality. Progress towards attainment of water quality standards will be evaluated by CT DEP monitoring the macroinvertebrate community and assessing surface water chemistry according to an existing rotating basin sampling schedule. The University of Connecticut, town of Mansfield and Willimantic River Alliance have pledged support for TMDL implementation. Although this watershed is not located in an MS4 area, CT DEP has authority to require stormwater permits if future biomonitoring indicates continuing non-attainment of aquatic life goals in Eagleville Brook or there is lack of cooperation by watershed partners.

Table - Summary of TMDL analysis for Eagleville Brook. (from page 9, main document)

Waterbody Name and Segment ID	Map ID	Waterbody Segment Description	Percent Impervious Cover				TMDL Implementation Objective
			TMDL Target	WLA and A	MOS	Current Condition	
Eagleville Brook_01 CT 3100-19_01	1	From the mouth at Eagleville Pond upstream to confluence with Kings Brook, Mansfield	12 %	11%	1%	5 %	Anti-degradation
Eagleville Brook_02 CT 3100-19_02 (Map ID 2)	2	From confluence with Kings Brook to headwaters near UCONN campus.	12 %	11%	1%	14 %	21 % Reduction in % IC accomplished by improved SW mgmt
Eagleville Brook_02 CT 3100-19_02 (Map ID 3)	3	Unnamed Pond on UCONN Campus (contained within CT 3100-19_02)	12 %	11%	1%	27%	59 % Reduction in % IC accomplished by improved SW mgmt

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