Effectiveness Estimates for Urban BMPs

n represents the number of studies

Urban wetlands and wet ponds
Table 1. Summary of pollutant removal effectiveness (%) for stormwater wetlands and wet ponds evaluated in single-site studies.

Statistic	TSS (Total Suspended Solids)	TN (Total Nitrogen)	TP (Total Phosphorus)
Mean	56	17	45
Standard deviation	36.5	29.3	25.7
Standard error	4.5	4.5	3.3
Median	64	20	45
Minimum	-78	-81	-42
Maximum	99	65	86
n (UMD project review)	62	40	58
n (current effectiveness estimate)	4	3	5
Effectiveness Estimate Recommendation:			
Current	80	30	50
Developer	60	20	45
Initial UMD/MAWP recommendation	50	15	40
New CBP Effectiveness Estimate	**60**	**20**	**45**

Urban Erosion and Sediment Control
Table 2. Summary of literature on the pollutant removal effectiveness (%) of single-site studies and multi-site studies of urban erosion and sediment controls as Best Management Practices for urban and mixed open land uses.

Statistic	TSS	TN	TP
Mean	74		
Minimum	0		
Maximum	99		
n (UMD project review)	23	0	1*
n (current	0 (best	0 (best	0 (best professional

effectiveness estimates)	professional judgment)	professional judgment)	judgment)
Effectiveness Estimation Recommendation			
Current	50	30	50
Developer	Current effectiveness estimate too high – but data not sufficient to recommend efficiency	No info available to recommend effectiveness estimate	Current estimate too high – but data not sufficient to recommend effectiveness estimate
Initial UMD/MAWP recommendation and New CBP Effectiveness Estimate	**40**	**25**	**40**

* The value from this one study is a 20% reduction.

Dry extended detention basins

Table 3. Summary of literature on the pollutant removal effectiveness (%) of single-site studies and multi-site studies of dry extended detention basins Best Management Practices for urban and mixed open land uses.

Statistic	TSS	TN	TP
Mean	60	25	30
Minimum	30	15	15
Maximum	85	34	57
n (UMD project review)	5	5	5
n (current effectiveness estimate)	1*	0	0
Effectiveness Estimation Recommendation			
Current	60	30	20
Initial UMD/MAWP Recommendation and New CBP Effectiveness Estimate	**60**	**20**	**20**

* data based on fewer than 5 data points

Dry detention ponds/basins and hydrodynamic structures

Table 4. Summary of literature on the pollutant removal effectiveness (%) of single-site studies and multi-site studies for dry detention basins and hydrodynamic structures.

Statistic	TSS (Total Suspended Solids)	TN (Total Nitrogen)	TP (Total Phosphorus)
Average	54	13	43
Standard Deviation	47.6	31.2	27.8
Standard Error	10.9	12.7	7.2
Median	75	18	38
Minimum	-52	-30	-3
Maximum	98	44	88
n (UMD project review)	9	6	15
n (current)	1	1	1
Recommended Effectiveness Estimate			
Current	10	5	10
Developer and Initial UMD/MAWP Recommendation	50	15	35
New CBP Effectiveness Estimate	**10**	**5**	**10**