

Appendix F.

Published Pollutant Concentrations and Loads in Runoff

Table F-1. Concentrations (mg/L) of pollutants in runoff from various land uses

Land Use Type	Total Solids	TSS	TKN	NH3-N	NOX	DP
Forest	1,046	34	0.5	0.2	0.2	0.04
Agriculture	1,136	762	2.9	0.4	4.2	0.27
Light Industrial	634	302	1.4	0.4	1.2	0.19
Commercial	1,242	386	2.0	0.5	1.6	0.24
Highway	2,097	266	1.2	0.4	1.1	0.07
Single-Family	818	513	1.7	0.5	1.4	0.14
Multi-Family	1,074	797	2.1	0.5	1.1	0.23

Based upon Polls and Lanyon (1980)

Notes

Values are reported in milligrams per liter.

DP = dissolved phosphorus; NH3-N = ammonia (as nitrogen); NOX = nitrogen oxides; TKN = total Kjeldahl nitrogen; TSS = total suspended solids

Table F-2. Comparison of median stormwater quality for NURP and NSQD

WQ Parameter	Units	Overall		Residential		Commercial		Open Space	
		NSQD	NURP	NSQD	NURP	NSQD	NURP	NSQD	NURP
Total Suspended Solids	mg/L	53	65	55	73	63	57	21	40
Copper (total)	ug/L	16	34	12	33	17	29	5	11
Lead (total)		16	144	12	144	18	104	5	30
Zinc (total)		116	160	73	135	150	226	39	195
Total Kjeldahl Nitrogen	mg/L	1.4	1.5	1.4	1.9	1.60	1.18	0.60	0.97
Nitrate + Nitrite		0.60	0.68	0.60	0.74	0.60	0.57	0.60	0.54
Total Phosphorus		0.27	0.33	0.30	0.38	0.22	0.20	0.25	0.12
Soluble Reactive Phosphorus		0.12	0.12	0.17	0.14	0.11	0.08	0.08	0.03

Based upon Shaver et al. (2007, p. 3-60, Table 3-11)

Notes: NSQD = National Stormwater Quality Database; NURP = National Urban Runoff Program (U.S. EPA 1983).

Table F-3. Typical urban area pollutant yields (pound per acre per year)

Land use	TSS	TP	TKN	Ammonia	Nitrate + Nitrite	Lead ^a	Zinc	Chromium	Copper	Cadmium	Arsenic
Commercial	1,000	1.5	6.7	1.9	3.1	2.7	2.1	0.15	0.40	0.03	0.02
Freeway	880	0.9	7.9	1.5	4.2	4.5	2.1	0.09	0.37	0.02	0.02
Parking lot	400	0.7	5.1	2.0	2.9	0.8	0.8	--	0.06	0.01	--
Shopping Center	440	0.5	3.1	0.5	1.7	1.1	0.6	0.04	0.09	0.01	0.02
Industrial	500	1.3	3.4	0.2	1.3	0.2	0.4	0.60	0.10	0.05	0.04
High-density residential	420	1.0	4.2	0.8	2.0	0.8	0.7	--	0.03	0.01	--
Medium-density residential	250	0.3	2.5	0.5	1.4	0.05	0.1	0.02	0.03	0.01	0.01
Low-density residential ^a	10	0.04	0.3	0.02	0.1	0.01	0.04	0.002	0.01	0.001	0.001
Parks	3	0.03	--	--	--	0.005	--	--	--	--	--

Based upon Burton and Pitt (2002, p. 37, Table 2.5).

Notes

Values are reported in pounds per acre per year.

TKN = total Kjeldahl nitrogen; TP = total phosphorus; TSS = total suspended solids

a. These values were collected during a period when leaded gasoline affected storm water leady quality.

b. Low-density residential areas were drained by grass swales.