

**STEPL LOAD REDUCTION RESULTS FOR
STREAMBANK EROSION RESTORATION PRACTICES
APPENDIX Z**

Table Z.1
STEPL Model Load Reduction Results for Streambank Erosion Sites in Grant Park Ravine

Impaired Streambank Dimensions and Recession Rates									
Erosion ID	Erosion Length (feet)	Erosion Height (feet)	Lateral Recession	Recession Rate Range (feet/year)	Applied Recession Rate (feet/year)	BMP Efficiency Applied (0-1)	Soil Textural Class	Soil Dry Weight (ton/feet ³)	Nutrient Correction Factor
1	75	4	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
2	234	6	Severe	0.3 - 0.5	0.4	0.75	Sands, Loamy sands	0.055	0.85
3	154	6	Moderate	0.06 - 0.2	0.13	0.75	Loams, sandy clay loams	0.045	0.85
4	170	30	Very Severe	0.5+	0.5	0.75	Sandy clay	0.045	0.85
5	34	15	Severe	0.3 - 0.5	0.4	0.75	Sandy clay	0.045	0.85
6	275	8	Moderate	0.06 - 0.2	0.13	0.75	Sandy loam	0.0525	0.85
7	51	9	Severe	0.3 - 0.5	0.4	0.75	Sandy loam	0.0525	0.85
8	317	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
9	93	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1

Pollutant Loads and Load Reductions													
Erosion ID	Pollutant Loads with no BMP				Pollutant Reduction				Pollutant Loads with BMP				
	N Load ^a	P Load ^a	BOD Load ^a	Sediment Load ^b	N Reduction ^{a,c}	P Reduction ^{a,c}	BOD Reduction ^{a,c}	Sediment Reduction ^{b,c}	N Load ^a	P Load ^a	BOD ^a	Sediment Load ^b	
1	0.6	0.2	1.2	0.4	0.4	0.2	0.9	0.3	0.1	0.1	0.3	0.1	
2	42.0	16.2	84.0	30.9	31.5	12.1	63.0	23.2	10.5	4.0	21.0	7.7	
3	7.4	2.8	14.7	5.4	5.5	2.1	11.0	4.1	1.8	0.7	3.7	1.4	
4	156.1	60.1	312.1	114.8	117.0	45.1	234.1	86.1	39.0	15.0	78.0	28.7	
5	12.5	4.8	25.0	9.2	9.4	3.6	18.7	6.9	3.1	1.2	6.2	2.3	
6	20.4	7.9	40.8	15.0	15.3	5.9	30.6	11.3	5.1	2.0	10.2	3.8	
7	13.1	5.0	26.2	9.6	9.8	3.8	19.7	7.2	3.3	1.3	6.6	2.4	
8	15.8	6.1	31.6	9.9	11.9	4.6	23.7	7.4	4.0	1.5	7.9	2.5	
9	3.9	1.5	7.7	2.4	2.9	1.1	5.8	1.8	1.0	0.4	1.9	0.6	
Total	271.7	104.6	543.4	197.5	203.8	78.5	407.6	148.2	67.9	26.2	135.9	49.4	

^a Measured in pounds per year.

^b Measured in tons per year.

^c Assuming 75 percent BMP efficiency.

Source: U.S. Environmental Protection Agency and SEWRPC

Table Z.2
STEPL Model Load Reduction Results for Streambank Erosion Sites in Lower Oak Creek – Mill Pond

Impaired Streambank Dimensions and Recession Rates									
Erosion ID	Erosion Length (feet)	Erosion Height (feet)	Lateral Recession	Recession Rate Range (feet/year)	Applied Recession Rate (feet/year)	BMP Efficiency Applied (0-1)	Soil Textural Class	Soil Dry Weight (ton/feet ³)	Nutrient Correction Factor
10	66	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
11	26	3	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
12	107	4	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
13	74	7	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
14	105	7	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
15	53	5	Slight	0.01 - 0.05	0.03	0.75	Sandy loam	0.0525	0.85
16	221	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
17	70	5.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
18	80	3.8	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
19	90	5	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
20	177	3.5	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
21	59	4.5	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
22	22	4.5	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
23	130	4	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
24	61	4.3	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1

Pollutant Loads and Load Reductions												
Erosion ID	Pollutant Loads with no BMP				Pollutant Reduction				Pollutant Loads with BMP			
	N Load ^a	P Load ^a	BOD Load ^a	Sediment Load ^b	N Reduction ^{a,c}	P Reduction ^{a,c}	BOD Reduction ^{a,c}	Sediment Reduction ^{b,c}	N Load ^a	P Load ^a	BOD ^a	Sediment Load ^b
10	3.3	1.3	6.6	2.1	2.5	1.0	4.9	1.5	0.8	0.3	1.6	0.5
11	0.6	0.2	1.3	0.4	0.5	0.2	1.0	0.3	0.2	0.1	0.3	0.1
12	11.0	4.2	21.9	6.8	8.2	3.2	16.4	5.1	2.7	1.1	5.5	1.7
13	13.3	5.1	26.5	8.3	9.9	3.8	19.9	6.2	3.3	1.3	6.6	2.1
14	6.1	2.4	12.2	3.8	4.6	1.8	9.2	2.9	1.5	0.6	3.1	1.0
15	0.6	0.2	1.1	0.4	0.4	0.2	0.9	0.3	0.1	0.1	0.3	0.1
16	11.0	4.2	22.1	6.9	8.3	3.2	16.5	5.2	2.8	1.1	5.5	1.7
17	3.2	1.2	6.4	2.0	2.4	0.9	4.8	1.5	0.8	0.3	1.6	0.5
18	0.6	0.2	1.2	0.4	0.4	0.2	0.9	0.3	0.1	0.1	0.3	0.1
19	0.9	0.3	1.7	0.5	0.6	0.2	1.3	0.4	0.2	0.1	0.4	0.1
20	1.2	0.5	2.4	0.7	0.9	0.3	1.8	0.6	0.3	0.1	0.6	0.2
21	0.5	0.2	1.0	0.3	0.4	0.1	0.8	0.2	0.1	0.0	0.3	0.1
22	0.2	0.1	0.4	0.1	0.1	0.1	0.3	0.1	0.0	0.0	0.1	0.0
23	1.0	0.4	2.0	0.6	0.7	0.3	1.5	0.5	0.2	0.1	0.5	0.2
24	2.2	0.8	4.4	1.4	1.6	0.6	3.3	1.0	0.5	0.2	1.1	0.3
Total	55.6	21.4	111.2	34.8	41.7	16.1	83.4	26.1	13.9	5.4	27.8	8.7

^a Measured in pounds per year.

^b Measured in tons per year.

^c Assuming 75 percent BMP efficiency.

Source: U.S. Environmental Protection Agency and SEWRPC

Table Z.3
STEPL Model Load Reduction Results for Streambank Erosion Sites in Lower Oak Creek

Impaired Streambank Dimensions and Recession Rates									
Erosion ID	Erosion Length (feet)	Erosion Height (feet)	Lateral Recession	Recession Rate Range (feet/year)	Applied Recession Rate (feet/year)	BMP Efficiency Applied (0-1)	Soil Textural Class	Soil Dry Weight (ton/feet ³)	Nutrient Correction Factor
25	78	4.6	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
26	46	4	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
27	54	4	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
28	75	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
28a	75	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
29	242	3.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
30	32	5	Moderate	0.06 - 0.2	0.13	0.75	Organic	0.011	1.5
31	67	7	Slight	0.01 - 0.05	0.03	0.75	Organic	0.011	1.5
32	90	3	Slight	0.01 - 0.05	0.03	0.75	Organic	0.011	1.5
33	34	8	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
34	32	6	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
35	14	15	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
36	68	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
37	42	4	Moderate	0.06 - 0.2	0.13	0.75	Organic	0.011	1.5
38	327	5.5	Moderate	0.06 - 0.2	0.13	0.75	Organic	0.011	1.5
39	156	7	Severe	0.3 - 0.5	0.4	0.75	Organic	0.011	1.5
40	214	9	Severe	0.3 - 0.5	0.4	0.75	Organic	0.011	1.5

Pollutant Loads and Load Reductions													
Erosion ID	Pollutant Loads with no BMP				Pollutant Reduction				Pollutant Loads with BMP				
	N Load ^a	P Load ^a	BOD Load ^a	Sediment Load ^b	N Reduction ^{a,c}	P Reduction ^{a,c}	BOD Reduction ^{a,c}	Sediment Reduction ^{b,c}	N Load ^a	P Load ^a	BOD ^a	Sediment Load ^b	
25	9.2	3.5	18.4	5.7	6.9	2.7	13.8	4.3	2.3	0.9	4.6	1.4	
26	1.5	0.6	3.1	1.0	1.1	0.4	2.3	0.7	0.4	0.1	0.8	0.2	
27	0.4	0.2	0.8	0.3	0.3	0.1	0.6	0.2	0.1	0.0	0.2	0.1	
28	3.1	1.2	6.2	2.0	2.3	0.9	4.7	1.5	0.8	0.3	1.6	0.5	
28a	3.1	1.2	6.2	2.0	2.3	0.9	4.7	1.5	0.8	0.3	1.6	0.5	
29	7.0	2.7	14.1	4.4	5.3	2.0	10.6	3.3	1.8	0.7	3.5	1.1	
30	0.5	0.2	1.1	0.2	0.4	0.2	0.8	0.2	0.1	0.1	0.3	0.1	
31	0.4	0.1	0.7	0.2	0.3	0.1	0.6	0.1	0.1	0.0	0.2	0.0	
32	0.2	0.1	0.4	0.1	0.2	0.1	0.3	0.1	0.1	0.0	0.1	0.0	
33	2.3	0.9	4.5	1.4	1.7	0.7	3.4	1.1	0.6	0.2	1.1	0.4	
34	4.9	1.9	9.8	3.1	3.7	1.4	7.4	2.3	1.2	0.5	2.5	0.8	
35	1.7	0.7	3.5	1.1	1.3	0.5	2.6	0.8	0.4	0.2	0.9	0.3	
36	2.8	1.1	5.7	1.8	2.1	0.8	4.2	1.3	0.7	0.3	1.4	0.4	
37	0.6	0.2	1.2	0.2	0.4	0.2	0.9	0.2	0.1	0.1	0.3	0.1	
38	6.2	2.4	12.3	2.6	4.6	1.8	9.3	1.9	1.5	0.6	3.1	0.6	
39	11.5	4.4	23.1	4.8	8.6	3.3	17.3	3.6	2.9	1.1	5.8	1.2	
40	20.3	7.8	40.7	8.5	15.3	5.9	30.5	6.4	5.1	2.0	10.2	2.1	
Total	75.9	29.2	151.9	39.2	56.9	21.9	113.9	29.4	19.0	7.3	38.0	9.8	

^a Measured in pounds per year.

^b Measured in tons per year.

^c Assuming 75 percent BMP efficiency.

Source: U.S. Environmental Protection Agency and SEWRPC

Table Z.4
STEPL Model Load Reduction Results for Streambank Erosion Sites in Middle Oak Creek

Impaired Streambank Dimensions and Recession Rates									
Erosion ID	Erosion Length (feet)	Erosion Height (feet)	Lateral Recession	Recession Rate Range (feet/year)	Applied Recession Rate (feet/year)	BMP Efficiency Applied (0-1)	Soil Textural Class	Soil Dry Weight (ton/feet ³)	Nutrient Correction Factor
41	49	10	Severe	0.3 - 0.5	0.4	0.75	Organic	0.011	1.5
42	75	6.5	Moderate	0.06 - 0.2	0.13	0.75	Organic	0.011	1.5
43	83	8	Slight	0.01 - 0.05	0.03	0.75	Organic	0.011	1.5
44	17	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
45	51	6	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
46	44	3	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
47	54	3.5	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
48	109	3.8	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
49	7	4.8	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
50	151	4.5	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
51	192	5.8	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
52	48	5.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
53	67	4.5	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
54	186	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
55	59	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
56	47	5.8	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
57	40	4	Moderate	0.06 - 0.2	0.13	0.75	Organic	0.011	1.5
58	5	5.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
59	79	3.5	Slight	0.01 - 0.05	0.03	0.75	Clay	0.035	1.15
60	108	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
61	132	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
62	59	6.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
63	93	5.8	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
64	39	9	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
65	33	5.8	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
66	86	10	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
67	34	6.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
68	67	8	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
69	91	7	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
70	107	8	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
71	166	6	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
72	139	5.7	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
73	100	7.2	Moderate	0.06 - 0.2	0.13	0.75	Clay	0.035	1.15
74	15	3	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
75	40	3	Slight	0.01 - 0.05	0.03	0.75	Clay	0.035	1.15
76	62	3.5	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
77	114	9.5	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
78	21	4	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
79	145	9.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1

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Table Z.4 (Continued)

Erosion ID	Pollutant Loads and Load Reductions												
	Pollutant Loads with no BMP				Pollutant Reduction				Pollutant Loads with BMP				
	N Load ^a	P Load ^a	BOD Load ^a	Sediment Load ^b	N Reduction ^{a,c}	P Reduction ^{a,c}	BOD Reduction ^{a,c}	Sediment Reduction ^{b,c}	N Load ^a	P Load ^a	BOD ^a	Sediment Load ^b	
41	5.2	2.0	10.3	2.2	3.9	1.5	7.8	1.6	1.3	0.5	2.6	0.5	
42	1.7	0.6	3.3	0.7	1.3	0.5	2.5	0.5	0.4	0.2	0.8	0.2	
43	0.5	0.2	1.1	0.2	0.4	0.2	0.8	0.2	0.1	0.1	0.3	0.1	
44	0.7	0.3	1.4	0.4	0.5	0.2	1.1	0.3	0.2	0.1	0.4	0.1	
45	0.6	0.2	1.2	0.4	0.4	0.2	0.9	0.3	0.1	0.1	0.3	0.1	
46	0.3	0.1	0.5	0.2	0.2	0.1	0.4	0.1	0.1	0.0	0.1	0.0	
47	0.4	0.1	0.7	0.2	0.3	0.1	0.5	0.2	0.1	0.0	0.2	0.1	
48	0.8	0.3	1.6	0.5	0.6	0.2	1.2	0.4	0.2	0.1	0.4	0.1	
49	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	
50	1.3	0.5	2.6	0.8	1.0	0.4	2.0	0.6	0.3	0.1	0.7	0.2	
51	9.3	3.6	18.5	5.8	6.9	2.7	13.9	4.3	2.3	0.9	4.6	1.4	
52	2.2	0.8	4.4	1.4	1.6	0.6	3.3	1.0	0.5	0.2	1.1	0.3	
53	0.6	0.2	1.2	0.4	0.4	0.2	0.9	0.3	0.1	0.1	0.3	0.1	
54	9.3	3.6	18.6	5.8	7.0	2.7	13.9	4.4	2.3	0.9	4.6	1.5	
55	2.9	1.1	5.9	1.8	2.2	0.9	4.4	1.4	0.7	0.3	1.5	0.5	
56	0.5	0.2	1.0	0.3	0.4	0.2	0.8	0.2	0.1	0.1	0.3	0.1	
57	0.5	0.2	1.1	0.2	0.4	0.2	0.8	0.2	0.1	0.1	0.3	0.1	
58	0.2	0.1	0.5	0.1	0.2	0.1	0.3	0.1	0.1	0.0	0.1	0.0	
59	0.5	0.2	1.1	0.3	0.4	0.2	0.8	0.2	0.1	0.1	0.3	0.1	
60	5.4	2.1	10.8	3.4	4.0	1.6	8.1	2.5	1.3	0.5	2.7	0.8	
61	6.6	2.5	13.2	4.1	4.9	1.9	9.9	3.1	1.6	0.6	3.3	1.0	
62	3.2	1.2	6.4	2.0	2.4	0.9	4.8	1.5	0.8	0.3	1.6	0.5	
63	4.5	1.7	9.0	2.8	3.4	1.3	6.7	2.1	1.1	0.4	2.2	0.7	
64	9.0	3.5	18.0	5.6	6.7	2.6	13.5	4.2	2.2	0.9	4.5	1.4	
65	4.9	1.9	9.8	3.1	3.7	1.4	7.3	2.3	1.2	0.5	2.4	0.8	
66	22.0	8.5	44.0	13.8	16.5	6.4	33.0	10.3	5.5	2.1	11.0	3.4	
67	1.8	0.7	3.7	1.1	1.4	0.5	2.8	0.9	0.5	0.2	0.9	0.3	
68	4.5	1.7	8.9	2.8	3.3	1.3	6.7	2.1	1.1	0.4	2.2	0.7	
69	5.3	2.0	10.6	3.3	4.0	1.5	7.9	2.5	1.3	0.5	2.6	0.8	
70	21.9	8.4	43.8	13.7	16.4	6.3	32.9	10.3	5.5	2.1	11.0	3.4	
71	25.5	9.8	51.0	15.9	19.1	7.4	38.2	12.0	6.4	2.5	12.7	4.0	
72	6.6	2.5	13.2	4.1	4.9	1.9	9.9	3.1	1.6	0.6	3.3	1.0	
73	6.0	2.3	12.1	3.3	4.5	1.7	9.0	2.5	1.5	0.6	3.0	0.8	
74	0.1	0.0	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	
75	0.2	0.1	0.5	0.1	0.2	0.1	0.3	0.1	0.1	0.0	0.1	0.0	
76	0.4	0.2	0.8	0.3	0.3	0.1	0.6	0.2	0.1	0.0	0.2	0.1	
77	27.7	10.7	55.4	17.3	20.8	8.0	41.6	13.0	6.9	2.7	13.9	4.3	
78	0.7	0.3	1.4	0.4	0.5	0.2	1.0	0.3	0.2	0.1	0.3	0.1	
79	11.5	4.4	22.9	7.2	8.6	3.3	17.2	5.4	2.9	1.1	5.7	1.8	
Total	205.3	79.1	410.8	126.1	154.0	59.4	308.0	94.6	51.3	19.8	102.7	31.5	

^a Measured in pounds per year.

^b Measured in tons per year.

^c Assuming 75 percent BMP efficiency.

Source: U.S. Environmental Protection Agency and SEWRPC

Table Z.5
STEPL Model Load Reduction Results for Streambank Erosion Sites in Upper Oak Creek

Impaired Streambank Dimensions and Recession Rates									
Erosion ID	Erosion Length (feet)	Erosion Height (feet)	Lateral Recession	Recession Rate Range (feet/year)	Applied Recession Rate (feet/year)	BMP Efficiency Applied (0-1)	Soil Textural Class	Soil Dry Weight (ton/feet ³)	Nutrient Correction Factor
80	39	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
81	56	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
82	78	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
83	33	5.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
84	47	3	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
85	62	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
86	66	4.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
87	90	5.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
88	40	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
89	86	5.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
90	42	4.4	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
91	23	4.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
92	154	5.1	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
93	42	4.9	Moderate	0.06 - 0.2	0.13	0.75	Organic	0.011	1.5
94	38	5.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
95	10	10	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
96	11	4.5	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
97	16	4.8	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
98	66	3	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1

Pollutant Loads and Load Reductions												
Erosion ID	Pollutant Loads with no BMP				Pollutant Reduction				Pollutant Loads with BMP			
	N Load ^a	P Load ^a	BOD Load ^a	Sediment Load ^b	N Reduction ^{a,c}	P Reduction ^{a,c}	BOD Reduction ^{a,c}	Sediment Reduction ^{b,c}	N Load ^a	P Load ^a	BOD ^a	Sediment Load ^b
80	1.6	0.6	3.2	1.0	1.2	0.5	2.4	0.8	0.4	0.2	0.8	0.3
81	2.8	1.1	5.6	1.7	2.1	0.8	4.2	1.3	0.7	0.3	1.4	0.4
82	3.9	1.5	7.8	2.4	2.9	1.1	5.8	1.8	1.0	0.4	1.9	0.6
83	1.5	0.6	3.0	0.9	1.1	0.4	2.3	0.7	0.4	0.1	0.8	0.2
84	0.3	0.1	0.5	0.2	0.2	0.1	0.4	0.1	0.1	0.0	0.1	0.0
85	2.6	1.0	5.2	1.6	1.9	0.7	3.9	1.2	0.6	0.2	1.3	0.4
86	2.5	1.0	4.9	1.5	1.9	0.7	3.7	1.2	0.6	0.2	1.2	0.4
87	4.1	1.6	8.2	2.6	3.1	1.2	6.2	1.9	1.0	0.4	2.1	0.6
88	1.7	0.6	3.3	1.0	1.2	0.5	2.5	0.8	0.4	0.2	0.8	0.3
89	3.9	1.5	7.9	2.5	3.0	1.1	5.9	1.8	1.0	0.4	2.0	0.6
90	1.5	0.6	3.1	1.0	1.2	0.4	2.3	0.7	0.4	0.1	0.8	0.2
91	0.9	0.3	1.7	0.5	0.6	0.2	1.3	0.4	0.2	0.1	0.4	0.1
92	20.1	7.7	40.2	12.6	15.1	5.8	30.2	9.4	5.0	1.9	10.1	3.1
93	0.7	0.3	1.4	0.3	0.5	0.2	1.1	0.2	0.2	0.1	0.4	0.1
94	1.7	0.7	3.5	1.1	1.3	0.5	2.6	0.8	0.4	0.2	0.9	0.3
95	2.6	1.0	5.1	1.6	1.9	0.7	3.8	1.2	0.6	0.2	1.3	0.4
96	1.3	0.5	2.5	0.8	1.0	0.4	1.9	0.6	0.3	0.1	0.6	0.2
97	0.6	0.2	1.3	0.4	0.5	0.2	1.0	0.3	0.2	0.1	0.3	0.1
98	1.6	0.6	3.3	1.0	1.2	0.5	2.5	0.8	0.4	0.2	0.8	0.3
Total	55.9	21.5	111.8	34.8	41.9	16.1	83.9	26.1	14.0	5.4	28.0	8.7

^a Measured in pounds per year.

^b Measured in tons per year.

^c Assuming 75 percent BMP efficiency.

Source: U.S. Environmental Protection Agency and SEWRPC

Table Z.6
STEPL Model Load Reduction Results for Streambank Erosion Sites in Upper Oak Creek – Headwaters

Impaired Streambank Dimensions and Recession Rates									
Erosion ID	Erosion Length (feet)	Erosion Height (feet)	Lateral Recession	Recession Rate Range (feet/year)	Applied Recession Rate (feet/year)	BMP Efficiency Applied (0-1)	Soil Textural Class	Soil Dry Weight (ton/feet ³)	Nutrient Correction Factor
99	22	5	Moderate	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
100	298	8	Severe	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
101	428	8.5	Severe	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1

Pollutant Loads and Load Reductions												
Erosion ID	Pollutant Loads with no BMP				Pollutant Reduction				Pollutant Loads with BMP			
	N Load ^a	P Load ^a	BOD Load ^a	Sediment Load ^b	N Reduction ^{a,c}	P Reduction ^{a,c}	BOD Reduction ^{a,c}	Sediment Reduction ^{b,c}	N Load ^a	P Load ^a	BOD ^a	Sediment Load ^b
99	0.9	0.4	1.8	0.6	0.7	0.3	1.4	0.4	0.2	0.1	0.5	0.1
100	61.0	23.5	122.1	38.1	45.8	17.6	91.5	28.6	15.3	5.9	30.5	9.5
101	93.1	35.9	186.3	58.2	69.8	26.9	139.7	43.7	23.3	9.0	46.6	14.6
Total	155.1	59.7	310.2	96.9	116.3	44.8	232.6	72.7	38.8	14.9	77.5	24.2

^a Measured in pounds per year.

^b Measured in tons per year.

^c Assuming 75 percent BMP efficiency.

Source: U.S. Environmental Protection Agency and SEWRPC

Table Z.7

STEPL Model Load Reduction Results for Streambank Erosion Sites in Lower North Branch Oak Creek

Impaired Streambank Dimensions and Recession Rates									
Erosion ID	Erosion Length (feet)	Erosion Height (feet)	Lateral Recession	Recession Rate Range (feet/year)	Applied Recession Rate (feet/year)	BMP Efficiency Applied (0-1)	Soil Textural Class	Soil Dry Weight (ton/feet ³)	Nutrient Correction Factor
102	68	7.5	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
103	279	7	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
104	113	6.5	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
104a	113	6	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
105	132	7	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
106	116	3.2	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
107	26	3.2	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
108	29	4	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
109	43	2.8	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
110	50	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
111	58	4	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
112	130	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
113	43	4.8	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
114	67	3.2	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
115	131	3.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
116	89	2.2	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
117	71	3.3	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1

Pollutant Loads and Load Reductions												
Erosion ID	Pollutant Loads with no BMP				Pollutant Reduction				Pollutant Loads with BMP			
	N Load ^a	P Load ^a	BOD Load ^a	Sediment Load ^b	N Reduction ^{a,c}	P Reduction ^{a,c}	BOD Reduction ^{a,c}	Sediment Reduction ^{b,c}	N Load ^a	P Load ^a	BOD ^a	Sediment Load ^b
102	13.1	5.0	26.1	8.2	9.8	3.8	19.6	6.1	3.3	1.3	6.5	2.0
103	16.2	6.3	32.5	10.2	12.2	4.7	24.4	7.6	4.1	1.6	8.1	2.5
104	18.8	7.2	37.6	11.8	14.1	5.4	28.2	8.8	4.7	1.8	9.4	2.9
104a	17.4	6.7	34.7	10.8	13.0	5.0	26.0	8.1	4.3	1.7	8.7	2.7
105	23.7	9.1	47.3	14.8	17.7	6.8	35.5	11.1	5.9	2.3	11.8	3.7
106	3.1	1.2	6.2	1.9	2.3	0.9	4.6	1.4	0.8	0.3	1.5	0.5
107	0.2	0.1	0.3	0.1	0.1	0.0	0.2	0.1	0.0	0.0	0.1	0.0
108	1.0	0.4	1.9	0.6	0.7	0.3	1.4	0.5	0.2	0.1	0.5	0.2
109	0.2	0.1	0.5	0.1	0.2	0.1	0.3	0.1	0.1	0.0	0.1	0.0
110	2.1	0.8	4.2	1.3	1.6	0.6	3.1	1.0	0.5	0.2	1.0	0.3
111	1.9	0.7	3.9	1.2	1.4	0.6	2.9	0.9	0.5	0.2	1.0	0.3
112	6.5	2.5	13.0	4.1	4.9	1.9	9.7	3.0	1.6	0.6	3.2	1.0
113	1.7	0.7	3.4	1.1	1.3	0.5	2.6	0.8	0.4	0.2	0.9	0.3
114	0.4	0.2	0.8	0.3	0.3	0.1	0.6	0.2	0.1	0.0	0.2	0.1
115	3.8	1.5	7.6	2.4	2.9	1.1	5.7	1.8	1.0	0.4	1.9	0.6
116	0.4	0.1	0.8	0.2	0.3	0.1	0.6	0.2	0.1	0.0	0.2	0.1
117	0.4	0.2	0.9	0.3	0.3	0.1	0.7	0.2	0.1	0.0	0.2	0.1
Total	110.8	42.7	221.7	69.3	83.1	32.0	166.2	52.0	27.7	10.7	55.4	17.3

^a Measured in pounds per year.

^b Measured in tons per year.

^c Assuming 75 percent BMP efficiency.

Source: U.S. Environmental Protection Agency and SEWRPC

Table Z.8
STEPL Model Load Reduction Results for Streambank Erosion Sites in Upper North Branch Oak Creek

Impaired Streambank Dimensions and Recession Rates									
Erosion ID	Erosion Length (feet)	Erosion Height (feet)	Lateral Recession	Recession Rate Range (feet/year)	Applied Recession Rate (feet/year)	BMP Efficiency Applied (0-1)	Soil Textural Class	Soil Dry Weight (ton/feet ³)	Nutrient Correction Factor
118	62	3.8	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
119	88	4	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
135	10	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
136	25	8	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
137	51	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
138	41	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
139	41	8	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
140	36	6.5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
141	141	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
142	138	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
143	196	9	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
144	145	9	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
145	45	8	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1

Pollutant Loads and Load Reductions													
Erosion ID	Pollutant Loads with no BMP				Pollutant Reduction				Pollutant Loads with BMP				
	N Load ^a	P Load ^a	BOD Load ^a	Sediment Load ^b	N Reduction ^{a,c}	P Reduction ^{a,c}	BOD Reduction ^{a,c}	Sediment Reduction ^{b,c}	N Load ^a	P Load ^a	BOD ^a	Sediment Load ^b	
118	2.0	0.8	3.9	1.2	1.5	0.6	2.9	0.9	0.5	0.2	1.0	0.3	
119	2.9	1.1	5.9	1.8	2.2	0.8	4.4	1.4	0.7	0.3	1.5	0.5	
135	0.4	0.2	0.8	0.3	0.3	0.1	0.6	0.2	0.1	0.0	0.2	0.1	
136	5.1	2.0	10.2	3.2	3.8	1.5	7.7	2.4	1.3	0.5	2.6	0.8	
137	2.5	1.0	5.1	1.6	1.9	0.7	3.8	1.2	0.6	0.2	1.3	0.4	
138	2.0	0.8	4.1	1.3	1.5	0.6	3.1	1.0	0.5	0.2	1.0	0.3	
139	2.7	1.1	5.5	1.7	2.0	0.8	4.1	1.3	0.7	0.3	1.4	0.4	
140	1.9	0.7	3.9	1.2	1.5	0.6	2.9	0.9	0.5	0.2	1.0	0.3	
141	7.0	2.7	14.1	4.4	5.3	2.0	10.6	3.3	1.8	0.7	3.5	1.1	
142	6.9	2.7	13.8	4.3	5.2	2.0	10.3	3.2	1.7	0.7	3.4	1.1	
143	14.7	5.7	29.4	9.2	11.0	4.2	22.0	6.9	3.7	1.4	7.3	2.3	
144	33.4	12.9	66.8	20.9	25.1	9.6	50.1	15.7	8.4	3.2	16.7	5.2	
145	9.2	3.5	18.4	5.8	6.9	2.7	13.8	4.3	2.3	0.9	4.6	1.4	
Total	90.9	35.0	181.8	56.8	68.2	26.3	136.4	42.6	22.7	8.8	45.5	14.2	

^a Measured in pounds per year.

^b Measured in tons per year.

^c Assuming 75 percent BMP efficiency.

Source: U.S. Environmental Protection Agency and SEWRPC

Table Z.9

STEPL Model Load Reduction Results for Streambank Erosion Sites in Lower Mitchell Field Drainage Ditch

Impaired Streambank Dimensions and Recession Rates									
Erosion ID	Erosion Length (feet)	Erosion Height (feet)	Lateral Recession	Recession Rate Range (feet/year)	Applied Recession Rate (feet/year)	BMP Efficiency Applied (0-1)	Soil Textural Class	Soil Dry Weight (ton/feet ³)	Nutrient Correction Factor
120	43	12	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
121	41	15	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
122	68	7	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
123	38	4	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
124	37	5	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
125	28	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
126	29	4	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
127	278	4	Slight	0.01 - 0.05	0.03	0.75	Organic	0.011	1.5
128	97	4.5	Slight	0.01 - 0.05	0.03	0.75	Silty clay loam, silty clay	0.04	1
129	143	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
130	50	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
131	52	6	Severe	0.3 - 0.5	0.4	0.75	Silty clay loam, silty clay	0.04	1
132	140	5	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
133	94	7	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1
134	45	6	Moderate	0.06 - 0.2	0.13	0.75	Silty clay loam, silty clay	0.04	1

Pollutant Loads and Load Reductions												
Erosion ID	Pollutant Loads with no BMP				Pollutant Reduction				Pollutant Loads with BMP			
	N Load ^a	P Load ^a	BOD Load ^a	Sediment Load ^b	N Reduction ^{a,c}	P Reduction ^{a,c}	BOD Reduction ^{a,c}	Sediment Reduction ^{b,c}	N Load ^a	P Load ^a	BOD ^a	Sediment Load ^b
120	13.2	5.1	26.4	8.3	9.9	3.8	19.8	6.2	3.3	1.3	6.6	2.1
121	15.7	6.1	31.5	9.8	11.8	4.5	23.6	7.4	3.9	1.5	7.9	2.5
122	4.0	1.5	7.9	2.5	3.0	1.1	5.9	1.9	1.0	0.4	2.0	0.6
123	1.3	0.5	2.5	0.8	0.9	0.4	1.9	0.6	0.3	0.1	0.6	0.2
124	0.4	0.1	0.7	0.2	0.3	0.1	0.5	0.2	0.1	0.0	0.2	0.1
125	1.2	0.4	2.3	0.7	0.9	0.3	1.7	0.5	0.3	0.1	0.6	0.2
126	1.0	0.4	1.9	0.6	0.7	0.3	1.4	0.5	0.2	0.1	0.5	0.2
127	0.9	0.3	1.8	0.4	0.7	0.3	1.3	0.3	0.2	0.1	0.4	0.1
128	0.8	0.3	1.7	0.5	0.6	0.2	1.3	0.4	0.2	0.1	0.4	0.1
129	7.1	2.7	14.3	4.5	5.4	2.1	10.7	3.3	1.8	0.7	3.6	1.1
130	2.1	0.8	4.2	1.3	1.6	0.6	3.1	1.0	0.5	0.2	1.0	0.3
131	8.0	3.1	16.0	5.0	6.0	2.3	12.0	3.7	2.0	0.8	4.0	1.2
132	5.8	2.2	11.6	3.6	4.4	1.7	8.7	2.7	1.5	0.6	2.9	0.9
133	5.5	2.1	10.9	3.4	4.1	1.6	8.2	2.6	1.4	0.5	2.7	0.9
134	2.2	0.9	4.5	1.4	1.7	0.6	3.4	1.1	0.6	0.2	1.1	0.4
Total	69.1	26.6	138.3	43.0	51.8	20.0	103.7	32.3	17.3	6.7	34.6	10.8

^a Measured in pounds per year.

^b Measured in tons per year.

^c Assuming 75 percent BMP efficiency.

Source: U.S. Environmental Protection Agency and SEWRPC