Appendix A

STORM DRAINAGE AREAS BY RECEIVING WATER BODY

Surface Water	Outfall	Total (acres)	Res. %	Comm. %	Ind. %	Public %	Open %	Rail %	Runoff Coeff.	Pop.
Mississippi River (Minneapolis)	10-xxx	18,077	0.53	0.16	0.16	0.04	0.07	0.04	0.46	263,400
Mississippi River (Columbia Heights)	10-100	348	0.48	0.11	0.33	0.00	0.08	0.00	0.37	2,765
Mississippi River (UofM)	15-xxx	100	0.00	0.00	0.00	1.00	0.00	0.00	0.55	0
Shingle Creek	20-xxx	1,365	0.62	0.17	0.06	0.03	0.04	0.07	0.44	11,493
Ryan Lake (Minneapolis)	21-xxx	49	1.00	0.00	0.00	0.00	0.05	0.00	0.45	388
Bassett Creek	40-xxx	2,293	0.58	0.12	0.13	0.03	0.08	0.05	0.44	26,756
New Bassett Creek Tunnel	41-xxx	219	0.22	0.26	0.26	0.04	0.10	0.11	0.45	669
Brownie Lake (Minneapolis)	51-xxx	34	0.99	0.00	0.01	0.00	0.00	0.00	0.45	193
Cedar Lake (Minneapolis)	52-xxx	224	0.79	0.01	0.00	0.00	0.17	0.03	0.38	1,674
Lake of the Isles	53-xxx	760	0.76	0.07	0.02	0.01	0.12	0.01	0.42	13,644
Lake Calhoun (Minneapolis)	54-xxx	1,249	0.69	0.11	0.03	0.10	0.07	0.00	0.46	13,640
Cemetary Lake	55-xxx	205	0.00	0.99	0.00	0.00	0.01	0.00	0.60	41
Sanctuary Pond	56-xxx	68	0.00	1.00	0.00	0.00	0.00	0.00	0.60	0
Lake Harriet	57-xxx	863	0.83	0.09	0.01	0.04	0.02	0.00	0.46	12,249
Hart Lake (Minneapolis)	61-xxx	3	0.32	0.68	0.00	0.00	0.00	0.00	0.55	0
Silver Lake (Minneapolis)	62-xxx	28	0.94	0.03	0.00	0.00	0.03	0.00	0.44	245
Crystal Lake (Minneapolis)	63-xxx	469	0.92	0.04	0.00	0.02	0.03	0.00	0.45	5,985
Legion Lake (Minneapolis)	64-xxx	49	1.00	0.00	0.00	0.00	0.00	0.00	0.45	332
Legion Lake (Richfield)	64-xxx	1,700	0.96	0.00	0.01	0.00	0.03	0.00	0.30	9,781
Richfield Lake (Minneapolis)	65-xxx	715	0.88	0.06	0.02	0.00	0.04	0.00	0.32	4,388
Richfield Lake (Richfield)	65-xxx	58	0.58	0.37	0.05	0.00	0.01	0.00	0.51	442
Wood Lake (Richfield)	66-xxx	627	0.75	0.05	0.02	0.00	0.18	0.00	0.29	7,316
Minnehaha Creek	70-xxx	3,213	0.85	0.07	0.01	0.04	0.03	0.00	0.44	38,399
Diamond Lake	71-xxx	685	0.72	0.11	0.09	0.03	0.05	0.00	0.47	6,456
Lake Nokomis	72-xxx	620	0.78	0.03	0.00	0.03	0.16	0.00	0.40	7,120
Taft Lake	73-xxx	100	0.76	0.00	0.00	0.00	0.24	0.00	0.37	675
Mother Lake (Minneapolis)	74-xxx	49	0.83	0.19	0.00	0.00	0.00	0.00	0.48	111
Mother Lake (Richfield)	74-xxx	245	0.71	0.09	0.00	0.00	0.20	0.00	0.30	2,025
Unnamed Wetland W of Mother Lake	75-xxx	41	0.91	0.00	0.00	0.00	0.00	0.09	0.41	344
Lake Hiawatha	76-xxx	1,008	0.87	0.07	0.02	0.03	0.02	0.00	0.46	14,707
Birch Pond	81-xxx	31	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
Powderhorn Lake	82-xxx	286	0.88	0.05	0.02	0.04	0.01	0.00	0.46	5,621
Grass Lake	83-xxx	386	0.90	0.04	0.00	0.05	0.02	0.00	0.46	4,128
Unnamed Wetland on Hwy 62	84-xxx	17	0.86	0.00	0.14	0.00	0.00	0.00	0.47	0
Unnamed Wetland on Ewing Ave S	85-xxx	22	0.86	0.00	0.14	0.00	0.00	0.00	0.47	0
GRAND TOTAL		**36,205**	**0.58**	**0.13**	**0.10**	**0.04**	**0.06**	**0.03**	**0.42**	**454,987**

STORM DRAINAGE AREAS CHARACTERIZATION

Outfall	Pipe Size(in)	Location of Outfall	Total(Ac)	Res	Comm	Ind	Public	Open	Rail	Runoff	Pop
10-010	60	53rd Ave N.	113.55	0.90	0.03	0.00	0.00	0.07	0.00	0.42	1,208
10-020	42	51st Ave. N (Mississippi Ct.)	7.81	0.82	0.00	0.00	0.00	0.18	0.00	0.39	40
10-030	15	49th Ave N.	4.05	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
10-040	78	49th Ave. N	167.42	0.65	0.12	0.12	0.00	0.10	0.01	0.45	1,176
10-050	42	46th Ave N (I-94)	114.18	0.83	0.08	0.08	0.00	0.00	0.01	0.47	1,312
10-060	15	St. Anthony Pkwy & 36th Ave NE	10.50	0.00	1.00	0.00	0.00	0.00	0.00	0.60	0
10-070	72	41st Ave N & Sooline R.R. (sanitary overflow)	30.66	0.00	0.33	0.30	0.00	0.05	0.32	0.38	0
10-080	36	1st St. N approx. 39th Ave N	30.66	0.00	0.33	0.30	0.00	0.05	0.32	0.38	0
10-090A	18	39th Ave N (At River)	0.99	0.00	0.00	1.00	0.00	0.00	0.00	0.60	0
10-090B	18	37th Ave N (At River)	1.47	0.00	0.00	1.00	0.00	0.00	0.00	0.60	0
10-090C	24	37th Ave N (Sooline R.R.)	12.77	0.00	0.00	0.90	0.00	0.02	0.08	0.54	0
10-090D	30	36th Ave N (Sooline R.R.)	4.41	0.00	0.00	1.00	0.00	0.00	0.00	0.60	0
10-100	24	Marshall St (31st Ave NE)	1392.10	0.59	0.02	0.11	0.01	0.16	0.11	0.36	8,400
10-110	48	Dowling Ave N (At River)	300.11	0.78	0.17	0.01	0.01	0.03	0.00	0.47	3,205
10-120A,B	(A)48, (B)36	(A) Approx. 34th Ave N, (B) Approx. 33rd Ave N (At River)	372.78	0.75	0.04	0.10	0.01	0.07	0.03	0.43	4,883
10-130	24	27th Ave NE (Monroe St NE)	336.00	0.30	0.07	0.45	0.00	0.05	0.13	0.45	1,669
10-140A	36	Lowry Ave NE (At River) North	2.59	0.04	0.69	0.20	0.03	0.04	0.00	0.57	2,136
10-140B	18	Lowry Ave NE (At River) South	220.65	0.05	0.70	0.20	0.02	0.03	0.00	0.58	2,136
10-150	27	Marshall St NE (Lowry Ave NE)	157.15	0.63	0.20	0.13	0.00	0.03	0.01	0.48	1,476
10-160	48	31st Ave N (Pacific St N)	17.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
10-170	42	30th Ave N (Mill St Extended)	176.01	0.57	0.07	0.33	0.00	0.03	0.00	0.50	2,702
10-180	78	22nd Ave NE (Grand St NE)	284.26	0.60	0.14	0.10	0.05	0.05	0.06	0.45	3,214
10-190	30	27th Ave N (Mill St N)	14.58	0.00	0.53	0.45	0.00	0.02	0.00	0.59	0
10-200	36	Marshall St NE (18th Ave NE)	42.44	0.30	0.07	0.43	0.00	0.02	0.18	0.44	433
10-210	54	26th Ave N (Mill St N)	98.32	0.50	0.03	0.41	0.00	0.05	0.01	0.49	837
10-220	18	22nd Ave N	18.83	0.00	0.33	0.60	0.00	0.01	0.06	0.56	0
10-230	60	21st Ave N	235.02	0.60	0.18	0.12	0.05	0.04	0.01	0.48	4,455
10-240	42	West Broadway	103.83	0.42	0.32	0.18	0.03	0.05	0.00	0.51	985
10-250	72	12th Ave NE (Vacated)	242.96	0.64	0.09	0.17	0.06	0.03	0.01	0.48	2,674
10-260	24	17th Ave N	23.77	0.00	0.05	0.85	0.00	0.02	0.08	0.54	0
10-270	48	10th Ave NE	72.45	0.76	0.05	0.15	0.00	0.04	0.00	0.47	922
10-280	54	14th Ave (extended)	55.08	0.00	0.02	0.54	0.14	0.20	0.10	0.44	0
10-290	21	Plymouth Ave N	6.83	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
10-300	27	8th Ave NE	17.74	0.66	0.29	0.05	0.00	0.00	0.00	0.50	125
10-310	42	Ramsey St NE (extension)	60.29	0.85	0.08	0.01	0.05	0.01	0.00	0.47	523
10-320	84	3rd Ave NE	341.99	0.65	0.12	0.10	0.04	0.06	0.03	0.45	4,680
10-330	18x60	W River Pkwy approx. 500' SE of 4th Ave N	21.61	0.14	0.00	0.06	0.00	0.80	0.00	0.18	126
10-340	30X'60	W River Pkwy at 1st Ave N (extended)	20.74	0.00	0.12	0.59	0.00	0.21	0.08	0.45	8
10-350	36	1st Ave NE	28.16	0.00	0.50	0.50	0.00	0.00	0.00	0.60	20
10-360	36	East Hennepin (on Nicollet Isld)	29.02	0.02	0.50	0.46	0.00	0.02	0.00	0.59	9
10-370	21	East Hennepin Ave	14.46	0.00	0.52	0.38	0.07	0.03	0.00	0.59	331
10-380	30X67	W River Pkwy at 2nd Ave S (extended)	14.38	0.15	0.09	0.00	0.50	0.25	0.01	0.45	0
10-390	tunnel	3rd Ave SE	41.97	0.13	0.26	0.58	0.00	0.01	0.02	0.56	456
10-400A	30	2nd St S at 3rd Ave S	1.07	0.14	0.32	0.34	0.00	0.15	0.05	0.47	280
10-400B	108	2nd St S tunnel btwn Hennepin Ave and 3rd Ave	17.66	0.02	0.50	0.46	0.00	0.02	0.00	0.59	19

STORM DRAINAGE AREAS CHARACTERIZATION

Outfall	Pipe Size(in)	Location of Outfall	Total(Ac)	Res	Comm	Ind	Public	Open	Rail	Runoff	Pop
10-400C	108	12th Ave N approx.150' W of 3rd St. N	50.25	0.20	0.00	0.00	0.79	0.01	0.00	0.57	134
10-410A	24	Washington Ave S at Chicago Ave S	46.22	0.00	0.49	0.35	0.00	0.05	0.11	0.51	2
10-410B	30	2nd St at Park Ave S (extended)	21.29	0.00	0.00	0.41	0.00	0.59	0.00	0.31	2
10-410C	36	Washington Ave S at Portland Ave S	22.80	0.00	0.03	0.50	0.25	0.22	0.00	0.49	193
10-410D	30	Washington Ave S at 5th Ave S	27.34	0.00	0.13	0.30	0.33	0.00	0.24	0.46	423
10-410E	tunnel	Washington,Marquette,Nicollet Tunnel	220.65	0.04	0.70	0.20	0.03	0.04	0.00	0.58	2,136
10-410F	36	10th St S@ 2nd Ave S	37.92	0.06	0.42	0.51	0.00	0.01	0.00	0.59	118
10-420A	21	W River Pkwy approx 200' E of 11th Ave S (extended)	23.05	0.00	0.58	0.15	0.00	0.02	0.25	0.44	13
10-420B	15	Washington Ave S at 11th Ave S	10.06	0.00	0.74	0.25	0.00	0.01	0.00	0.60	0
10-420C	60 X 78	Washington Ave S at 11th Ave S	7.42	0.00	0.96	0.03	0.00	0.00	0.01	0.59	2
10-420D	48	5th St S at 11th Ave S	20.73	0.00	0.90	0.00	0.00	0.00	0.10	0.54	0
10-420E	60	11th Ave S at 5th St S	127.89	0.08	0.38	0.33	0.13	0.08	0.00	0.55	2,096
10-430A	24	I-35W @ 1st St S	7.07	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
10-430B	48	I-35W @ 4th St S	54.72	0.10	0.25	0.60	0.00	0.00	0.05	0.56	2,867
10-430C	MNDOT	14th Ave S @ St. Pacific RR Bridge	44.83	0.10	0.65	0.05	0.00	0.10	0.10	0.48	17
10-430D	72	9th St S @ 13th Ave S	85.79	0.64	0.15	0.15	0.05	0.01	0.00	0.50	3,540
10-430E	36	I -35W @ W side of Portland Ave S Bridge	86.66	0.25	0.60	0.05	0.00	0.10	0.00	0.51	0
10-430F	30	Middle of I-35W 300' W of Portland Ave Bridge	12.27	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
10-430G	54	E. 18th St @ Clinton Ave S	82.63	0.53	0.30	0.12	0.00	0.05	0.00	0.50	5,054
10-430H	MNDOT	I-94 @ W side of 1st Ave S Bridge	33.18	0.64	0.20	0.15	0.00	0.01	0.00	0.50	658
10-430I	48	Nicollet Ave S 100' S of E 16th St	32.61	0.07	0.10	0.10	0.70	0.03	0.00	0.57	42
10-430J	120	W 15th St @ Willow St	532.36	0.45	0.20	0.08	0.08	0.18	0.01	0.44	12,300
10-430K	48	W 27th St (extended) 200' E of I-35W	337.06	0.50	0.27	0.10	0.03	0.10	0.00	0.48	8,015
10-430L	42	E 31st St @ 2nd Ave S	84.40	0.87	0.04	0.04	0.00	0.05	0.00	0.44	1,696
10-430M	48	E 31st St @ Stevens Ave S	75.94	0.32	0.47	0.15	0.04	0.01	0.01	0.54	1,681
10-430N	24	E 34th St @ 2nd Ave S	26.43	0.84	0.09	0.02	0.03	0.02	0.00	0.46	17,919
10-430O	66	E 35th St @ 2nd Ave S	109.53	0.80	0.06	0.00	0.10	0.04	0.00	0.46	1,978
10-430P	78	E 35th St @ Stevens Ave S	212.53	0.90	0.08	0.01	0.00	0.01	0.00	0.46	4,545
10-430Q	30	I-35W @ N side of W 35th St Bridge	8.03	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
10-430R	84	E 39th St @ 2nd Ave S	150.32	0.79	0.15	0.02	0.02	0.02	0.00	0.47	2,269
10-430S	21	I-35W @ S side of E 39th St Bridge	5.15	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
10-430T	78	W 39th St @ Stevens Ave S	262.47	0.93	0.04	0.01	0.01	0.01	0.00	0.46	5,157
10-430U	78	I-35W @ W 39th St Bridge	431.37	0.83	0.11	0.00	0.06	0.00	0.00	0.48	5,600
10-430V	72	King's Hwy Holding Pond @ 700' S of W 38th St	329.11	0.86	0.06	0.02	0.04	0.02	0.00	0.46	6,929
10-440A	18	35W Btwn University Ave SE 4th St SE	23.18	0.65	0.15	0.11	0.00	0.09	0.00	0.46	443
10-440B	18	35W @ 9th St SE (extended),	34.23	0.56	0.21	0.00	0.23	0.00	0.00	0.52	0
10-440C&D	(C) 18, (D) 18	(C) 35W @ Winter St, (D) Johnson St 400' S of E Broadway	56.00	0.26	0.40	0.33	0.00	0.01	0.00	0.56	60
10-440E	18	E Broadway @ New Brighton Blvd	831.25	0.45	0.35	0.15	0.02	0.02	0.01	0.52	3,677
10-440F	96	35W @ 13th Ave NE (extended)	538.85	0.59	0.15	0.14	0.04	0.04	0.04	0.47	12,569
10-450A	18	10th Ave SE @ 2nd St SE	338.26	0.50	0.16	0.21	0.03	0.04	0.06	0.47	6,510
10-450B	18	10th Ave SE 50' N of Univ. Ave SE	3.41	0.56	0.20	0.00	0.24	0.00	0.00	0.52	60
10-450C	18	10th Ave SE 50' N of 4th St SE	55.64	0.90	0.00	0.10	0.00	0.00	0.00	0.47	304
10-450D	18	10th Ave SE @ 5th St SE	4.62	1.00	0.00	0.00	0.00	0.00	0.00	0.45	219
10-450E	18	10th Ave SE @ 6th St SE	3.20	0.98	0.00	0.00	0.00	0.02	0.00	0.44	212
10-450F	18	8th St SE @ 15th Ave SE	158.55	0.10	0.31	0.38	0.00	0.02	0.19	0.46	1,473

STORM DRAINAGE AREAS CHARACTERIZATION

Outfall	Pipe Size(in)	Location of Outfall	Total(Ac)	Res	Comm	Ind	Public	Open	Rail	Runoff	Pop
10-450G&H	(G) 18, (H) 18	(G)Como Av SE 100' E 35W E Front. Rd, (H)12 Ave SE @ SCL E Henn.	73.97	0.71	0.15	0.04	0.01	0.08	0.01	0.45	1,342
10-450I	18	E Hennepin @ Pierce St NE	243.64	0.36	0.32	0.21	0.00	0.03	0.08	0.48	2,263
10-450J	18	E Hennepin @ Garfield St NE	17.16	0.03	0.20	0.61	0.00	0.02	0.14	0.50	78
10-450K	18	Winter St NE @ Garfield St NE	37.01	0.11	0.26	0.62	0.00	0.01	0.00	0.58	153
10-450L	66	Arthur St NE @ Kennedy St NE	213.41	0.00	0.21	0.63	0.00	0.02	0.14	0.51	0
10-460A	18	300' S of University Ave SE	0.00								
10-460B	18	University Ave SE 100' SE of 14th Ave SE	7.29	0.09	0.70	0.00	0.10	0.00	0.11	0.52	0
10-460C&D	18	(C) 5th St SE @ 16th Ave SE, (D) 8th St SE @ 17th Ave SE	112.22	0.00	0.03	0.15	0.41	0.05	0.36	0.36	0
10-460E	18	18th Ave SE @ Elm St. SE	231.41	0.48	0.05	0.37	0.00	0.02	0.08	0.47	1,376
10-460F	18	18th Ave SE @ Alley S of Como Ave SE	14.75	0.70	0.08	0.00	0.22	0.00	0.00	0.50	137
10-460G	18	Talmage Ave SE 50' E of 18th Ave SE	79.66	0.37	0.10	0.21	0.25	0.03	0.04	0.51	1,711
10-460H	18	18th Ave SE 50 S of E Hennepin	12.35	0.03	0.17	0.60	0.00	0.02	0.18	0.48	90
10-460I	18	Stinson Blvd @ Traffic St NE	74.29	0.01	0.21	0.69	0.00	0.02	0.07	0.55	28
10-460J	18	Como Ave @ 19th Ave SE	5.36	0.91	0.00	0.09	0.00	0.00	0.00	0.46	0
10-460K	18	Como Ave @ 20th Ave SE	5.48	0.77	0.00	0.00	0.00	0.03	0.20	0.35	45
10-460L	18	Como Ave @ 21st Ave SE	3.50	0.44	0.50	0.00	0.00	0.06	0.00	0.50	3
10-460M	18	Como Ave @ 122nd Ave SE	9.55	0.81	0.18	0.01	0.00	0.00	0.00	0.48	67
10-460N	18	Como Ave @ 23rd Ave SE	3.85	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
10-460O	18	Como Ave @ 24th Ave SE	4.15	0.98	0.02	0.00	0.00	0.00	0.00	0.45	5
10-460P	18	25th Ave SE 100' S of Como Ave SE	4.34	1.00	0.00	0.00	0.00	0.00	0.00	0.45	76
10-460Q	18	Como Ave SE @ 27th Ave SE	19.73	0.10	0.07	0.77	0.00	0.00	0.06	0.55	62
10-460R	18	25th Ave SE 200' N of Talmadge	50.46	0.03	0.11	0.78	0.00	0.00	0.08	0.55	0
10-460S	60	Hoover St NE @ E Hennepin	233.54	0.00	0.17	0.75	0.00	0.02	0.06	0.55	0
10-465	12	West River Pkwy @ RR Bridge	8.56	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
10-470	24	West River Road 200' N of Washington Ave	25.60	0.70	0.00	0.12	0.00	0.13	0.05	0.40	407
10-480	60	West River Road 100' N of Washington Ave	39.66	0.15	0.05	0.10	0.69	0.01	0.00	0.57	0
10-485	12	West River Road 100' S of Washington Ave	7.27	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
10-490	84	West River Road @ 4th St S	150.96	0.45	0.20	0.15	0.01	0.18	0.01	0.44	1,822
10-500A	54	7th St S (vacated) 15' SE of 17th Ave S	26.21	0.00	0.34	0.10	0.00	0.00	0.56	0.27	571
10-500B	18	17th Ave S Under I-94	8.48	0.00	0.00	0.60	0.00	0.36	0.04	0.40	0
10-500C	72	East Franklin Av 250' E of Cedar Ave S	218.00	0.73	0.10	0.05	0.02	0.10	0.00	0.44	2,090
10-500D	12	Cedar Ave S 500' S of I-94	3.83	0.00	0.11	0.29	0.00	0.00	0.60	0.24	0
10-500E	24	19th Ave S	23.34	0.50	0.25	0.10	0.08	0.07	0.00	0.49	5,884
10-500F	48	E 18th St @ 14th Ave S	270.00	0.14	0.00	0.00	0.00	0.86	0.00	0.15	183
10-500G	60	E 24th St @ Snelling Ave S	112.94	0.67	0.09	0.18	0.03	0.03	0.00	0.48	2,090
10-505	12	West River Road below St Marys' Hospital	7.85	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
10-510	30X60	West River Road @ 27th Ave S (extended)	62.36	0.47	0.06	0.15	0.22	0.10	0.00	0.48	1,138
10-520	U of M	U of M Outfall	139.98	0.08	0.25	0.35	0.13	0.19	0.00	0.49	2,813
10-530	96	Oak St SE	116.15	0.15	0.23	0.23	0.12	0.25	0.02	0.44	789
10-540	30	West River Road @ I-94	53.90	0.05	0.00	0.00	0.00	0.95	0.00	0.12	72
10-550	36	West River Road @ E Franklin Av	25.83	0.90	0.07	0.02	0.00	0.01	0.00	0.46	629
10-560A&B	96	26th Ave SE Bridal Vail Creek Tunnel	600.63	0.18	0.27	0.28	0.02	0.05	0.20	0.43	2,921
10-570A	24	West River Road @ 33rd Ave S	14.64	1.00	0.00	0.00	0.00	0.00	0.00	0.45	93
10-570B	48	West River Road @ 33rd Ave S	228.18	0.58	0.14	0.10	0.03	0.15	0.00	0.44	2,847
10-580	30	Seymour Ave SE	73.39	1.00	0.00	0.00	0.00	0.00	0.00	0.45	760

STORM DRAINAGE AREAS CHARACTERIZATION

Outfall	Pipe Size(in)	Location of Outfall	Total(Ac)	Res	Comm	Ind	Public	Open	Rail	Runoff	Pop
10-600	36	Cecil St SE	89.24	0.75	0.15	0.00	0.00	0.10	0.00	0.44	859
10-610	12	East City Limits	25.60	0.88	0.08	0.02	0.00	0.00	0.02	0.46	239
10-630A	12	West River Rd @ 28th Ave S (extended)	9.80	0.95	0.02	0.00	0.03	0.00	0.00	0.46	1,641
10-630B	16	E 28th St @ Dorman Ave S	6.24	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
10-630C	60	E 28th St @ 42nd Ave S	4.68	1.00	0.00	0.00	0.00	0.00	0.00	0.45	102
10-630D	21	E 28th St @ 42nd Ave S	96.03	0.76	0.19	0.03	0.01	0.01	0.00	0.48	1,071
10-630E	16	28th Ave S	6.37	1.00	0.00	0.00	0.00	0.00	0.00	0.45	40
10-630F	16	E 28th St @ 38th Ave S	8.52	1.00	0.00	0.00	0.00	0.00	0.00	0.45	254
10-630G	60	E 28th St and 36th Ave S	17.56	0.40	0.60	0.00	0.00	0.00	0.00	0.54	170
10-630H	24	36th Ave S 100' S of E 27th St	5.90	1.00	0.00	0.00	0.00	0.00	0.00	0.45	58
10-630I	16	E 28th St @ 34th Ave S	25.63	0.42	0.05	0.14	0.00	0.00	0.39	0.30	196
10-630J	12	E 28th St @ Alleyway btwn 32nd & 33rd Ave S	12.48	0.42	0.00	0.43	0.00	0.00	0.15	0.45	52
10-630K	54	E 28th St @ 31st Ave S	95.29	0.36	0.12	0.38	0.00	0.09	0.05	0.47	440
10-630L	48	E 28th St @ 31st Ave S	100.42	0.48	0.40	0.07	0.04	0.01	0.00	0.52	1,201
10-630M	15	E 28th St @ 31st Ave S	11.71	0.65	0.00	0.33	0.00	0.02	0.00	0.49	67
10-630N	12	E 28th St @ 29th Ave S	8.45	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
10-630O	12	E 28th St @ Alley btwn 27th & 28th Ave S,	5.77	0.01	0.24	0.23	0.00	0.50	0.02	0.34	0
10-630P&Q	36	E 28th St @ 26th Ave S	66.45	0.01	0.28	0.09	0.00	0.60	0.02	0.29	0
10-630R	60	E 29th St @ 22nd Ave S	83.89	0.15	0.25	0.15	0.10	0.05	0.30	0.37	920
10-630S	21	E 29th St @ Layman Ave S	37.02	0.00	0.02	0.37	0.00	0.60	0.01	0.29	60
10-630T	16	E 29th St @ 21st Ave S	7.72	0.25	0.75	0.00	0.00	0.00	0.00	0.56	0
10-630U	16	Drill Hole along 29th Ave S	115.42	0.36	0.24	0.14	0.02	0.08	0.16	0.41	1,443
10-630V	36	E 29th St @ 14th Ave S	33.85	0.52	0.25	0.10	0.05	0.08	0.00	0.48	2,240
10-630W	16	14th Ave S @ E 28th St	23.68	0.62	0.08	0.24	0.00	0.03	0.03	0.47	458
10-630X	21	E 27th St @ 13th Ave S	14.78	0.83	0.05	0.02	0.02	0.08	0.00	0.44	549
10-630Y	60	E 27th St @ 12th Ave S	111.54	0.44	0.29	0.11	0.06	0.10	0.00	0.48	1,290
10-630Z	36	14th Ave S 200' S of E Lake St	45.66	0.82	0.11	0.04	0.02	0.01	0.00	0.47	950
10-640	40X72	W River Pkwy at E Lake St	258.18	0.83	0.07	0.03	0.03	0.02	0.02	0.45	2,980
10-650	12	W River Pkwy at E 32nd St	19.53	0.29	0.71	0.00	0.00	0.00	0.00	0.56	203
10-660	48X 72	W River Pkwy at E 33rd St	306.37	0.86	0.05	0.03	0.04	0.02	0.00	0.46	3,816
10-670	36	W River Pkwy at E 36th St	137.88	1.00	0.00	0.00	0.00	0.00	0.00	0.45	1,408
10-680	120	W River Pkwy at E 38th St	707.95	0.71	0.06	0.08	0.07	0.04	0.04	0.45	7,782
10-690	27	W River Pkwy at E 42nd St	70.63	0.66	0.04	0.00	0.30	0.00	0.00	0.50	654
10-700	60	W River Pkwy at E 44th St	222.07	0.87	0.05	0.04	0.03	0.01	0.00	0.46	2,606
10-710	36	W River Pkwy 250' S of E 46th St	29.95	0.60	0.02	0.00	0.00	0.38	0.00	0.32	244
10-720A	12	Riverview Rd 250' N of E 54th St	15.77	0.98	0.00	0.00	0.00	0.02	0.00	0.44	75
10-720B	66	E 53rd St at 48th Ave S	422.18	0.74	0.01	0.23	0.01	0.01	0.00	0.48	4,182
10-720C	24	E 52nd St at 47th Ave S	26.35	0.76	0.08	0.01	0.00	0.15	0.00	0.41	261
10-720D	21	E 54th at 38th Ave S	22.95	0.96	0.04	0.00	0.00	0.00	0.00	0.46	337
10-720E	12	Boardman Ave S at 35th Ave S (extended)	18.39	0.96	0.04	0.00	0.00	0.00	0.00	0.46	350
10-720F	84	E 55th at 33rd Ave S	317.75	0.80	0.20	0.00	0.00	0.00	0.00	0.48	3,710
10-720G	15	Hiawatha Ave at E 51st St	13.25	1.00	0.00	0.00	0.00	0.00	0.00	0.45	246
10-720H	12	Hiawatha Ave at 44th Ave S	4.55	1.00	0.00	0.00	0.00	0.00	0.00	0.45	71
10-720I	36	Hiawatha Ave at E 50th St	87.27	0.91	0.05	0.00	0.00	0.04	0.00	0.44	802
10-720J	12	Hiawatha Ave at 42nd Ave S	3.71	0.75	0.00	0.00	0.00	0.25	0.00	0.36	47

STORM DRAINAGE AREAS CHARACTERIZATION

Outfall	Pipe Size(in)	Location of Outfall	Total(Ac)	Res	Comm	Ind	Public	Open	Rail	Runoff	Pop
10-720K	12	Hiawatha Ave at E Minnehaha Pkwy	32.76	0.00	0.80	0.10	0.00	0.04	0.06	0.54	0
10-720L	12	E 59th St at 46th Ave S	5.00	1.00	0.00	0.00	0.00	0.00	0.00	0.45	102
20-010	18	Penn Ave N	93.99	0.89	0.00	0.00	0.00	0.11	0.00	0.41	990
20-020	12	52nd Ave N (Penn Av N)	15.09	0.95	0.00	0.00	0.00	0.05	0.00	0.43	170
20-030	21	52nd Ave N (Oliver Ave N)	7.95	1.00	0.00	0.00	0.00	0.00	0.00	0.45	65
20-040	12	Newton Ave N	6.79	0.80	0.00	0.00	0.00	0.20	0.00	0.38	37
20-050	12	51st Ave N (Newton Av N)	1.59	0.80	0.00	0.00	0.00	0.20	0.00	0.38	37
20-060	36	Knox Ave N	5.91	1.00	0.00	0.00	0.00	0.00	0.00	0.45	63
20-070	30	50th Ave N (Knox Ave N)	39.07	0.91	0.04	0.00	0.00	0.05	0.00	0.44	441
20-080	24	50th Ave N (James Ave N)	33.72	0.94	0.04	0.00	0.00	0.02	0.00	0.45	438
20-090	12	Alley W of Humboldt Ave N	9.95	0.32	0.00	0.00	0.68	0.00	0.00	0.55	85
20-100	54	49th Ave N (Ryan Creek)	0.99	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
20-110	21	49th Ave N (Humboldt Ave N)	216.04	0.13	0.04	0.23	0.00	0.15	0.45	0.24	370
20-120	24	48th Ave N (Humboldt Ave N)	10.22	0.89	0.06	0.00	0.05	0.00	0.00	0.47	55
20-130	12	47th Ave N (Shingle Crk Pkwy)	16.12	1.00	0.00	0.00	0.00	0.00	0.00	0.45	168
20-140	24	47th Ave N (Girard Ave N)	2.97	0.95	0.00	0.00	0.00	0.05	0.00	0.43	61
20-150	12	Malmquist Lane	14.48	1.00	0.00	0.00	0.00	0.00	0.00	0.45	182
20-160	12	Fremont Ave N (Shingle Crk Pkwy)	3.21	0.45	0.20	0.00	0.35	0.00	0.00	0.53	0
20-170	12	46th Ave N (Mamquist Lane)	4.94	0.74	0.00	0.00	0.00	0.26	0.00	0.36	44
20-180	12	46th Ave N (Shingle Crk Pkwy)	5.30	0.64	0.36	0.00	0.00	0.00	0.00	0.50	20
20-190	24	Dupont Ave N (Shingle Crk Pkwy)	1.35	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
20-200	60	45th Ave N (Dupont Ave N)	13.84	1.00	0.00	0.00	0.00	0.00	0.00	0.45	191
20-210A	60	44th Ave N (Soo Line RR)	92.90	0.96	0.00	0.00	0.00	0.03	0.01	0.44	710
20-210B	30	45th Ave N (Colfax Ave N)	620.78	0.62	0.32	0.03	0.03	0.00	0.00	0.51	5,932
20-220	24	43rd Ave N	26.38	0.60	0.10	0.20	0.00	0.10	0.00	0.46	202
20-230	24	Weber Pkwy (Aldrich Ave N)	21.16	1.00	0.00	0.00	0.00	0.00	0.00	0.45	115
20-240	21	Lyndale Ave N (S of Creek)	30.06	0.77	0.13	0.10	0.00	0.00	0.00	0.48	337
20-250	15	Lyndale Ave N (N of Creek)	6.28	0.00	0.80	0.10	0.00	0.10	0.00	0.55	0
20-260	60	I- 94 (S of Creek)	3.50	0.00	0.00	1.00	0.00	0.00	0.00	0.60	115
20-270	40	I-94 (E of I-94 at Creek)	42.81	0.75	0.02	0.03	0.20	0.00	0.00	0.49	665
20-280	24	I-94 (N of Creek)	8.98	0.00	0.90	0.00	0.00	0.05	0.05	0.55	0
20-290	54	47th Ave N @ Xerxes Ave N	8.41	0.00	0.50	0.40	0.00	0.10	0.00	0.55	0
21-010	96	14th Ave N @ Xerxes Ave N	49.49	1.00	0.00	0.00	0.00	0.05	0.00	0.45	388
40-010	future	Xerxes Ave N (S of T.H. 55)	719.17	0.87	0.05	0.01	0.02	0.05	0.00	0.44	10,605
40-020	36	Vincent Ave N (N. of T.H. 55)	15.36	1.00	0.00	0.00	0.00	0.00	0.00	0.45	85
40-030	42	Upton Ave N (N of T.H.)	51.02	0.91	0.00	0.00	0.00	0.09	0.00	0.42	426
40-040	15	T.H. 55 @ Upton Av N	65.39	0.93	0.02	0.00	0.00	0.05	0.00	0.44	987
40-050	12	100' N of 5th Av N @ Thomas Av N	10.28	1.00	0.00	0.00	0.00	0.00	0.00	0.45	65
40-060	future	S of Thomas Av N @ Inglewood St N	3.20	1.00	0.00	0.00	0.00	0.00	0.00	0.45	8
40-070	24	Thomas Av N (N of Chestnut Av N)	7.98	0.80	0.00	0.00	0.00	0.20	0.00	0.38	59
40-080	30	Queen Av N (N of Chestnut Av N)	60.51	0.81	0.00	0.00	0.00	0.19	0.00	0.38	376
40-090	15	Queen Av N -S of 2nd Av N	20.65	0.90	0.02	0.05	0.00	0.03	0.00	0.45	587
40-100	30	Oliver Av N - S of 2nd Av N	10.70	0.93	0.03	0.02	0.00	0.02	0.00	0.45	471
40-110	36	Newton Av N (S of Bassett Creek)	2.61	0.98	0.00	0.00	0.00	0.02	0.00	0.44	0
40-120	30	Morgan Av N (N of Bassett Creek)	65.87	0.87	0.04	0.03	0.00	0.03	0.03	0.44	644

STORM DRAINAGE AREAS CHARACTERIZATION

Outfall	Pipe Size(in)	Location of Outfall	Total(Ac)	Res	Comm	Ind	Public	Open	Rail	Runoff	Pop
40-130	66	Morgan Av N extended (S of Bassett Creek)	35.01	0.89	0.05	0.03	0.00	0.03	0.00	0.45	610
40-140	future	Irving Av N	125.46	0.27	0.36	0.00	0.00	0.05	0.32	0.34	572
40-150	18	2nd Av N - !00' Dupont Av N	24.31	0.38	0.16	0.33	0.00	0.05	0.08	0.47	181
40-160	36	Dupont Av N @ 2nd Av N	30.99	0.16	0.09	0.60	0.00	0.02	0.13	0.49	201
40-170	27	Glenwood Av N @ Dupont Av N (west MH)	194.89	0.12	0.29	0.14	0.03	0.25	0.17	0.36	131
40-180	42	Glenwood Av N @ Dupont Av N (east MH)	16.80	0.17	0.33	0.31	0.12	0.07	0.00	0.54	210
40-190	24	4th Av N @ Dupont Av N (west MH)	65.53	0.00	0.36	0.51	0.00	0.05	0.08	0.53	184
40-200	27	4th Av N @ Dupont Av N (east MH)	24.75	0.40	0.06	0.00	0.38	0.16	0.00	0.46	572
40-210	42	5th Av N @ Dupont Av N (west MH)	17.26	0.72	0.15	0.08	0.01	0.04	0.00	0.47	2,368
40-220	21	5th Av N @ Dupont Av N (east MH)	100.58	0.77	0.17	0.01	0.01	0.04	0.00	0.46	1,559
40-230	48	TH 55 @ Dupont Av N (west MH)	13.78	0.82	0.00	0.00	0.12	0.06	0.00	0.45	200
40-240	54	8th Av N @ Aldrich Av N	341.00	0.55	0.09	0.10	0.13	0.13	0.00	0.45	5,292
40-250	18	TH 55 @ Dupont Av N (east MH)	1.15	0.00	1.00	0.00	0.00	0.00	0.00	0.60	0
40-260	15	T H 55 (N frontage Rd) @ Dupont	3.49	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
40-270	21	T H 55 (West Bound) @ Sumner Av	9.59	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
40-280	48	Alley - NW of 8th Av N & 10th Av N	12.76	0.09	0.13	0.70	0.00	0.08	0.00	0.55	23
40-290	future	10th Av SE - 200' NE of 8th Av NE	13.73	0.04	0.66	0.15	0.00	0.08	0.07	0.51	0
40-300	42	6th St N - 100' N of 8th Av N	10.38	0.05	0.06	0.69	0.00	0.11	0.09	0.48	0
40-310	24	4th St N @ 8th Av N (extended) South MH	97.86	0.00	0.09	0.66	0.00	0.05	0.20	0.46	0
40-320	24	4th St N @ 8th Av N (extended) North MH	9.43	0.00	0.00	1.00	0.00	0.00	0.00	0.60	0
40-330	future	3rd St N @ 7th Av N (vacated) South MH	15.34	0.00	0.27	0.71	0.00	0.01	0.01	0.59	136
40-340	future	3rd St N -200' SE of 8th Av N	35.27	0.00	0.08	0.80	0.00	0.04	0.08	0.53	0
40-350	30	Washington Av N -200' S of 8th Av N	8.99	0.00	0.09	0.81	0.00	0.00	0.10	0.54	0
40-360	30	2nd St N - 100' SE of 8th Av N	8.09	0.00	0.03	0.97	0.00	0.00	0.00	0.60	0
40-370	18	1stSt N - 100' SE of 8th Av N	12.41	0.00	0.44	0.51	0.00	0.05	0.00	0.58	0
40-380	15	West River Parkway @ Bassett Creek (west curb)	24.92	0.13	0.12	0.40	0.00	0.25	0.10	0.40	204
40-390	15	Bassett Creek outlet to Mississippi River	5.72	0.00	0.96	0.00	0.00	0.04	0.00	0.58	0
40-400	60	I-394 at Penn Av S (Penn Av Holding Pond)	1.07	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
41-010	none	BNRR tracks at 16th St (extended)	94.73	0.50	0.15	0.10	0.00	0.10	0.15	0.39	142
41-020	72	Washington Av N at 3rd Av N	14.89	0.00	0.03	0.12	0.35	0.05	0.45	0.31	0
41-030	48	6th St at 2nd Av N	60.47	0.03	0.37	0.40	0.00	0.14	0.06	0.49	402
41-040	24	2nd Av N at 5th St N	35.59	0.00	0.35	0.45	0.10	0.10	0.00	0.55	125
41-050	15	2nd Av N at 4th St N	10.48	0.00	0.62	0.38	0.00	0.00	0.00	0.60	0
41-060	36	North edge of Brownie Lake	2.95	0.00	0.66	0.34	0.00	0.00	0.00	0.60	0
51-010	12	Cedar Lake Road - 250' SW of Lake View	29.63	0.99	0.00	0.01	0.00	0.00	0.00	0.45	162
51-020	21	W '21st St (extended)	4.00	1.00	0.00	0.00	0.00	0.00	0.00	0.45	31
52-010	12	Burnham Road @ Kenilworth Lagoon	45.29	0.53	0.00	0.00	0.00	0.36	0.11	0.27	147
52-020	12	Park Lane - 500' North of Burnham Road	6.09	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
52-030	12	Burnham Road - '100' North of Cedar Lake Pkwy	7.18	1.00	0.00	0.00	0.00	0.00	0.00	0.45	16
52-040	24	Cedar Lake Pkwy @ Depot	4.54	0.90	0.00	0.00	0.00	0.10	0.00	0.42	0
52-050	18	Cedar Lake Pkwy @ Chowen (extended)	15.30	0.95	0.00	0.00	0.00	0.05	0.00	0.43	74
52-060	36	Cedar Lake Pkwy @ Drew Ave S (extended)	3.22	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
52-070	24	Cedar Lake Pkwy @ Ewing Av S (extended	86.94	0.88	0.02	0.00	0.00	0.10	0.00	0.42	1,095
52-080	18	Cedar Lake Pkwy @ at Basswood Road	8.08	0.41	0.00	0.00	0.00	0.59	0.00	0.24	0
52-090	42	Cedar Lake Pkwy @ West 24th St	4.89	1.00	0.00	0.00	0.00	0.00	0.00	0.45	19

STORM DRAINAGE AREAS CHARACTERIZATION

Outfall	Pipe Size(in)	Location of Outfall	Total(Ac)	Res	Comm	Ind	Public	Open	Rail	Runoff	Pop
52-100	48	Cedar Lake Pkwy @ West 22nd St	11.89	0.58	0.00	0.00	0.00	0.39	0.03	0.30	92
52-110	24	Cedar Lake Pkwy @ West Franklin Av	8.84	0.99	0.00	0.00	0.00	0.01	0.00	0.45	45
52-120	8	Cedar Lake Pkwy @ Cedar Lake Road	14.74	1.00	0.00	0.00	0.00	0.00	0.00	0.45	168
52-130	12	Upton Av S @ West 26th St	7.18	0.70	0.00	0.00	0.00	0.00	0.30	0.32	18
53-010	24	West 26th St @ Lake of the Isles Parkway	7.03	1.00	0.00	0.00	0.00	0.00	0.00	0.45	66
53-020	15	Thomas Av S (Dean Blvd)	12.38	0.61	0.00	0.00	0.00	0.00	0.39	0.28	57
53-030	18	Lake of the Isles Parkway ('200' E of Russell Av S)	11.37	0.96	0.00	0.00	0.00	0.04	0.00	0.44	65
53-040	24	Lake of the Isles Parkway (West 24th ST)	2.78	1.00	0.00	0.00	0.00	0.00	0.00	0.45	71
53-050	30	Lake of the Isles Parkway (Penn Av S)	13.66	1.00	0.00	0.00	0.00	0.00	0.00	0.45	149
53-060	18	Lake of the Isles Parkway (Newton Av S)	20.37	1.00	0.00	0.00	0.00	0.00	0.00	0.45	284
53-070	24	Lake of the Isles Parkway (Oliver Av S)	4.89	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
53-080	24	West 21st St @ Lake of the Isles Blvd	5.81	0.84	0.00	0.00	0.00	0.16	0.00	0.39	36
53-090	24	Lake of the Isles Blvd @Franklin Av	59.59	0.68	0.01	0.00	0.03	0.28	0.00	0.36	1,555
53-100	12	Lake of the Isles Blvd @Franklin Av	107.81	0.54	0.01	0.00	0.00	0.45	0.00	0.29	634
53-110	36	Lake of the Isles Pkwy @ West 22nd St	4.59	0.81	0.00	0.00	0.00	0.19	0.00	0.38	26
53-120	12	Lake of the Isles Pkwy @ West 25th St	129.79	0.95	0.04	0.01	0.00	0.00	0.00	0.46	2,688
53-130	15	Lake of the Isles Pkwy @ West 26th St	5.02	1.00	0.00	0.00	0.00	0.00	0.00	0.45	14
53-140	42	Lake of the Isles Pkwy @ Euclid Place	6.36	1.00	0.00	0.00	0.00	0.00	0.00	0.45	60
53-150	54	Lake of the Isles Pkwy @ West 27th St	90.40	0.70	0.20	0.02	0.06	0.02	0.00	0.49	1,586
53-160	15	Lake of the Isles Pkwy @ '250' SW of James Av S	252.19	0.78	0.12	0.06	0.01	0.03	0.00	0.47	6,244
53-170	15	Lake of the Isles Pkwy @ '500' W of Lagoon	6.39	0.75	0.00	0.00	0.00	0.25	0.00	0.36	33
53-180	18	Lake of the Isles Pkwy @ West 28th St	8.09	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
53-190	36	E. Isles Pkwy at The Mall	11.41	0.57	0.00	0.00	0.00	0.43	0.00	0.30	76
54-010	42	E. Calhoun Pkwy at 33rd St. W	84.93	0.67	0.15	0.05	0.00	0.13	0.00	0.43	2,220
54-040	18	E. Calhoun Pkwy at 36th St W.	255.14	0.68	0.22	0.08	0.02	0.00	0.00	0.50	3,792
54-050	18	W. Calhoun Pkwy at Sheridan Av S.	9.27	0.21	0.00	0.00	0.00	0.79	0.00	0.17	27
54-060	30	W. Calhoun Pkwy at Vincent Av S	32.13	0.95	0.00	0.00	0.00	0.05	0.00	0.43	69
54-070	60	W. Calhoun Pwky at Xerxes Av S	60.80	0.74	0.00	0.00	0.00	0.26	0.00	0.36	595
54-080	12	W. Calhoun Pwky approx. '250' S. of W 36th St	414.26	0.89	0.03	0.01	0.05	0.02	0.00	0.46	4,180
54-090	36	W. Calhoun Pwky at W. 36th St	3.55	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
54-100	18	W. Calhoun Pwky at Rose Lane	114.24	0.20	0.00	0.00	0.78	0.02	0.00	0.56	134
54-110	24	W. Calhoun Pwky at Ivy Lane	24.55	1.00	0.00	0.00	0.00	0.00	0.00	0.45	20
54-120	12	W. Calhoun Pwky approx. '200' N of W 32nd St	62.08	0.76	0.08	0.01	0.09	0.06	0.00	0.46	378
54-130	30	W. Calhoun Pwky at Market Place (extended)	1.07	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
54-140	24	W. Calhoun Pwky at Calhoun Blvd (extended)	113.01	0.32	0.35	0.04	0.00	0.25	0.04	0.40	1,729
54-150	9	W. Calhoun Pwky at Dean Pwky	55.34	0.94	0.02	0.01	0.00	0.03	0.00	0.44	455
54-160	12	W. Calhoun Pwky approx. 200' E of Thomas Av S	2.62	0.00	1.00	0.00	0.00	0.00	0.00	0.60	0
54-170	12	W. Calhoun Pwky approx. 500' E of Thomas Av S	8.08	0.13	0.42	0.44	0.00	0.01	0.00	0.58	0
54-180	12	W. Calhoun Pwky approx 750' E of Thomas Av S	2.82	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
54-190	12	W. Calhoun Pwky approx. 1000' E of Thomas Av S	2.20	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
54-200	12	W. Calhoun Pwky approx. 1200' E of Thomas Av S	2.13	0.00	0.00	0.00	0.00	1.00	0.00	0.10	41
54-210	12	E. Calhoun Pkwy approx. 1000' NE of Wm Berry Pkwy	1.14	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
55-010	12	Lakewood Cemetary	14.98	0.00	1.00	0.00	0.00	0.00	0.00	0.60	0
55-020	12	Lake Harriet Pkwy at Roseway Rd	189.58	0.00	0.99	0.00	0.00	0.01	0.00	0.60	41
56-010	15	E. Harriet Pwky at 43rd St	67.62	0.00	1.00	0.00	0.00	0.00	0.00	0.60	0

STORM DRAINAGE AREAS CHARACTERIZATION

Outfall	Pipe Size(in)	Location of Outfall	Total(Ac)	Res	Comm	Ind	Public	Open	Rail	Runoff	Pop
57-010	36	E. Harriet Pwky at 44th St	26.10	0.44	0.56	0.00	0.00	0.00	0.00	0.53	130
57-020	12	E. Harriet Pwky at Kings Highway	143.08	0.95	0.02	0.00	0.03	0.00	0.00	0.46	1,641
57-030	24	E. Harriet Pwky at W 47th St	18.22	1.00	0.00	0.00	0.00	0.00	0.00	0.45	157
57-040	12	Harriet Pwky at Morgan Av S	39.88	0.71	0.00	0.00	0.00	0.29	0.00	0.35	390
57-050	24	Harriet Pwky at Oliver Ave S.	7.90	1.00	0.00	0.00	0.00	0.00	0.00	0.45	51
57-060	36	W. Harriet Pwky @ Queen Av S	26.11	0.91	0.08	0.01	0.00	0.00	0.00	0.46	436
57-070	12	W. Harriet Pwky @ Russel Av S	81.33	0.98	0.02	0.00	0.00	0.00	0.00	0.45	1,011
57-080	42	W. Harriet Pwky @ Thomas Av S	5.54	0.92	0.00	0.00	0.00	0.08	0.00	0.42	45
57-090	60	W. Harriet Pwky @ W. 47th St	77.77	0.85	0.05	0.01	0.09	0.00	0.00	0.47	833
57-100	12	W. Harriet Pwky @ W.46th St (extended)	313.43	0.81	0.11	0.02	0.06	0.00	0.00	0.48	3,458
57-110	30	W. Harriet Pwky @ W. 44th St.	21.60	0.40	0.60	0.00	0.00	0.00	0.00	0.54	275
57-120	18	W. Harriet Pwky @ approx. 400' N of W 44th St	62.08	0.81	0.11	0.02	0.06	0.00	0.00	0.48	3,458
57-130	18	W. Harriet Pwky @ approx. 500' S W 42nd St	1.16	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
57-140	15	W. Harriet Pwky @ W 42nd St	1.55	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
57-150	12	Lake Harriet Pkwy approx. 50' N of W 42nd St	35.68	0.88	0.02	0.00	0.00	0.10	0.00	0.42	364
57-160	future	Cleveland St NE at 37th Av NE	1.89	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
61-010	36	Silver Lake Stinson Blvd and 37th Av NE	2.86	0.32	0.68	0.00	0.00	0.00	0.00	0.55	0
62-010	66	Victory Pkwy @ Dowling Av N	27.84	0.94	0.03	0.00	0.00	0.03	0.00	0.44	245
63-010	24	W Broadwy Av at Xerxes Av N	455.67	0.92	0.04	0.00	0.02	0.02	0.00	0.45	5,985
63-020	24	Columbus Av S (extended) 200' S of E 61st St	13.62	0.75	0.00	0.00	0.00	0.25	0.00	0.36	0
64-100	12	Elliot Av S (extended) S side of Hwy 62	24.92	1.00	0.00	0.00	0.00	0.00	0.00	0.45	314
64-110	30	Oakland Av S (extended) @ 50' N of Hwy 62	6.01	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
64-120	12	Park Av S 300' E of Portland Av (at curve)	16.04	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
64-130	30	Mn Hwy 190 @ Hwy 62	2.44	1.00	0.00	0.00	0.00	0.00	0.00	0.45	18
65-010	33	W 62nd St (extended) @ State Hwy 190	18.97	0.86	0.00	0.14	0.00	0.00	0.00	0.47	0
65-020	12	W 54th @ France Av S	39.13	0.44	0.55	0.00	0.00	0.01	0.00	0.53	442
70 -265	21	Pratt St @ W M'haha Pkwy (north bank)	185.98	0.81	0.15	0.02	0.00	0.02	0.00	0.47	2,415
70-010	24	W 54th St 150' E of Zenith Av S	6.23	0.93	0.07	0.00	0.00	0.00	0.00	0.46	55
70-015	24	York Av S @ W 54th St (extended)	11.69	1.00	0.00	0.00	0.00	0.00	0.00	0.45	124
70-020	12	Xerxes Av S @ 54th St	37.55	1.00	0.00	0.00	0.00	0.00	0.00	0.45	576
70-025	18	Washburn Av S @ N Bank of Creek	3.67	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-030	12	Washburn Av S	13.48	1.00	0.00	0.00	0.00	0.00	0.00	0.45	106
70-035	12	Vincent Av S @ W 54th St	4.53	1.00	0.00	0.00	0.00	0.00	0.00	0.45	57
70-040	12	W 54th St 50' W of Upton Av S	2.42	1.00	0.00	0.00	0.00	0.00	0.00	0.45	55
70-045	18	Upton Av S - N Bank of Creek	0.22	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-050	60	W 54th St 250' E of Upton Av S	17.41	1.00	0.00	0.00	0.00	0.00	0.00	0.45	216
70-055	12	Forest Dale Rd 250' E of Upton Av S	333.43	0.87	0.09	0.00	0.02	0.02	0.00	0.46	3,186
70-060	12	Forest Dale Rd 750' E of Upton Av S	3.53	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-065	12	Forest Dale Rd @ Sheridan Av S (extended)	1.89	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-070	12	Queen Av S @ W 53rd St S	5.80	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-075	15	Penn Av S - S Bank of Creek	5.00	0.95	0.00	0.00	0.00	0.05	0.00	0.43	96
70-080	48	Morgan Av S 300' N of 53rd St	11.96	0.94	0.03	0.00	0.00	0.03	0.00	0.44	2,796
70-085	15	W 52nd St - W Bank of Creek	229.48	0.94	0.03	0.00	0.00	0.03	0.00	0.44	2,702
70-090	15	W 52nd St -E Bank of Creek	18.57	1.00	0.00	0.00	0.00	0.00	0.00	0.45	271
70-095	12	300' SE of Newton Av S @ W 51st St	9.99	1.00	0.00	0.00	0.00	0.00	0.00	0.45	129

STORM DRAINAGE AREAS CHARACTERIZATION

Outfall	Pipe Size(in)	Location of Outfall	Total(Ac)	Res	Comm	Ind	Public	Open	Rail	Runoff	Pop
70-100	12	Morgan Av S '500' N of W 52nd St	9.64	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-105	21	Morgan Av S @ 51st St	1.63	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-110	12	Logan Av S at W M' haha Pkwy (South bank)	18.13	1.00	0.00	0.00	0.00	0.00	0.00	0.45	217
70-115	21	Logan Av S at W M' haha Pkwy (north bank)	3.71	1.00	0.00	0.00	0.00	0.00	0.00	0.45	40
70-120	12	Knox Av S @ W M' haha Pkwy (south)	4.22	1.00	0.00	0.00	0.00	0.00	0.00	0.45	61
70-125	36	James Av S @ N Bank of Creek	5.23	1.00	0.00	0.00	0.00	0.00	0.00	0.45	66
70-130	12	Irving Av S @ W 51st St	34.29	0.70	0.23	0.00	0.07	0.00	0.00	0.50	218
70-135	12	Humboldt Av S @ N Bank of Creek	7.46	1.00	0.00	0.00	0.00	0.00	0.00	0.45	115
70-140	20	W 50th St @ W M' haha Pkwy	0.78	0.00	0.00	0.00	1.00	0.00	0.00	0.60	0
70-145	30	W 49th St @ Humboldt Av S (vacated)	9.19	0.00	0.60	0.00	0.40	0.00	0.00	0.60	0
70-150	15	Humboldt Av S '50' N of W 49th St	4.51	1.00	0.00	0.00	0.00	0.00	0.00	0.45	77
70-155	12	Harriet Pkwy @ Irving Av S	2.05	1.00	0.00	0.00	0.00	0.00	0.00	0.45	66
70-160	15	W 48th St @ Humboldt Av S	2.95	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-165	15	W 49th St @ W M'haha Pkwy	27.77	1.00	0.00	0.00	0.00	0.00	0.00	0.45	286
70-170	18	W 50th St @ W M' haha (east bank)	23.74	1.00	0.00	0.00	0.00	0.00	0.00	0.45	179
70-175	12	W M 'haha Pkwy 400' S of W 50th St	30.89	0.95	0.02	0.00	0.03	0.00	0.00	0.46	420
70-180	12	W 51st St @ Humboldt Av S	1.14	1.00	0.00	0.00	0.00	0.00	0.00	0.45	17
70-185	18	Humboldt Av S @ W M ' haha Pkwy (west bank)	1.53	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-190	21	Fremont Av S @ W M' haha Pkwy (east bank)	15.04	0.21	0.00	0.00	0.00	0.79	0.00	0.17	171
70-195	24	Girard Av S @ W M' haha Pkwy	46.02	0.96	0.04	0.00	0.00	0.00	0.00	0.46	554
70-200	12	W M 'haha Pkwy 250' W of Emerson Av S (east bank)	31.52	1.00	0.00	0.00	0.00	0.00	0.00	0.45	342
70-205	12	W M 'haha Pkwy @ Fremont Av S (extended)	1.39	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-210	12	Emerson Av S @ W M' haha	3.58	1.00	0.00	0.00	0.00	0.00	0.00	0.45	111
70-215	12	Dupont Av S @ W M' haha Pkwy (south bank)	5.93	1.00	0.00	0.00	0.00	0.00	0.00	0.45	60
70-220	12	Dupont Av S @ W M' haha Pkwy (northbank)	4.54	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-225	12	Colfax Av S @ W M 'haha Pkwy (north bank)	4.99	1.00	0.00	0.00	0.00	0.00	0.00	0.45	65
70-230	12	Bryant Av S @ W M' haha Pkwy (north bank)	4.72	1.00	0.00	0.00	0.00	0.00	0.00	0.45	66
70-235	30	Bryant Av S @ W M' haha Pkwy (south bank)	5.04	1.00	0.00	0.00	0.00	0.00	0.00	0.45	68
70-240	12	Aldrich Av S @ W M"haha Pkwy (north bank)	4.52	1.00	0.00	0.00	0.00	0.00	0.00	0.45	93
70-245	27	Lyndale Av S @ W M ' haha Pkwy (south bank)	9.98	0.95	0.00	0.00	0.00	0.05	0.00	0.43	187
70-250	24	Harriet Av S @ W M' haha Pkwy (north bank)	41.27	0.78	0.20	0.02	0.00	0.00	0.00	0.48	398
70-255	30	Gladstone Av S (ext) @ W M haha Pkwy (north bank)	45.37	1.00	0.00	0.00	0.00	0.00	0.00	0.45	388
70-260	48	Pleasant Av S @ W M'haha Pkwy (south bank)	24.90	0.94	0.00	0.06	0.00	0.00	0.00	0.46	341
70-270	24	W M 'haha Pkwy 250' W of Nicollet Ave S (east bank)	4.66	1.00	0.00	0.00	0.00	0.00	0.00	0.45	119
70-275	21	W M' haha Pkwy 300' S of Valley View (north bank)	4.28	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-280	18	Nicollet Ave S at M ' haha Pkwy (north bank)	9.39	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-285	12	E M' haha Pkwy 300' E of Nicollet Ave S (n bank)	19.03	1.00	0.00	0.00	0.00	0.00	0.00	0.45	60
70-290	15	E M ' haha Pkwy 50' W of Stevens Av S (south bank)	2.37	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-295	12	E M ' haha Pkwy 50' W of Stevens Av S (south bank)	7.18	1.00	0.00	0.00	0.00	0.00	0.00	0.45	90
70-300	12	E M ' haha Pkwy at Luverne Av S (north bank)	0.40	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
70-305	12	E M ' haha Pkwy at 3rd Av S (north bank)	12.68	0.99	0.00	0.00	0.00	0.01	0.00	0.45	118
70-310	21	E M ' haha Pkwy at 200' W of Tarrymore Av S (S bank)	5.36	0.82	0.00	0.00	0.00	0.18	0.00	0.39	0
70-315	36	E M ' haha Pkwy at E 50th St (north Bank)	5.79	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-320	9	E M ' haha Pkwy at 5th Av S (north bank)	2.32	0.82	0.00	0.00	0.00	0.18	0.00	0.39	394
70-325	54	E M ' haha Pkwy at 5th Av S (north bank)	2.35	1.00	0.00	0.00	0.00	0.00	0.00	0.45	394

STORM DRAINAGE AREAS CHARACTERIZATION

Outfall	Pipe Size(in)	Location of Outfall	Total(Ac)	Res	Comm	Ind	Public	Open	Rail	Runoff	Pop
70-330	18	E M ' haha Pkwy at 100' W of Portland Av S (s bank)	279.41	0.83	0.03	0.00	0.14	0.00	0.00	0.48	3,211
70-335	12	E M ' haha Pkwy at Portland Av S (s bank)	1.99	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-340	12	E M ' haha Pkwy at Oakland Av S (s bank)	21.97	0.12	0.12	0.40	0.00	0.25	0.11	0.39	204
70-345	60	E M ' haha Pkwy at Oakland Av S (n bank)	3.81	1.00	0.00	0.00	0.00	0.00	0.00	0.45	60
70-350	12	E M ' haha Pkwy at Park Av S (s bank)	314.40	0.70	0.25	0.01	0.04	0.00	0.00	0.50	4,075
70-355	42	E M ' haha Pkwy at Park Av S (s bank)	1.29	1.00	0.00	0.00	0.00	0.00	0.00	0.45	18
70-360	12	E M ' haha Pkwy at Columbus Av S (s bank)	131.96	0.96	0.02	0.01	0.01	0.00	0.00	0.46	1,253
70-365	21	E M ' haha Pkwy at Chicago Av S (n bank)	6.70	1.00	0.00	0.00	0.00	0.00	0.00	0.45	116
70-370	12	E M ' haha Pkwy at Chicago Av S (s bank)	3.75	0.96	0.00	0.00	0.00	0.04	0.00	0.44	33
70-375	15	E M' haha Pkwy at 11th Av S (s bank)	7.10	0.85	0.15	0.00	0.00	0.00	0.00	0.47	64
70-380	127	E M ' haha Pkwy 150 ' W of 11th Av S (n bank)	14.40	1.00	0.00	0.00	0.00	0.00	0.00	0.45	222
70-385	24	E M' haha Pkwy at 12th Av S (s bank)	14.97	1.00	0.00	0.00	0.00	0.00	0.00	0.45	243
70-390	30	E M' haha Pkwy at 12th Av S (n bank)	58.11	0.90	0.00	0.00	0.10	0.00	0.00	0.47	770
70-395	12	E 50th St at 13th Av S (s bank)	57.19	0.94	0.00	0.00	0.00	0.06	0.00	0.43	713
70-400	15	E 50th St at Bloomington Av S (south bank)	9.67	0.95	0.00	0.00	0.00	0.05	0.00	0.43	119
70-405	12	E 49th St at 16th Av S (south bank)	7.16	0.40	0.00	0.00	0.00	0.60	0.00	0.24	0
70-410	36x96	E M' haha Pkwy at 16th Av S (north bank)	5.80	0.90	0.00	0.00	0.00	0.10	0.00	0.42	67
70-415	15	E M' haha Pkwy at 18th Av S (south bank)	120.75	0.96	0.02	0.00	0.02	0.00	0.00	0.46	947
70-420	30	E M' haha Pkwy at Cedar Av S (north bank)	16.99	1.00	0.00	0.00	0.00	0.00	0.00	0.45	164
70-425	15	E M' haha Pkwy 1/2 mi. E of Longfellow Av (w bank)	20.63	0.59	0.34	0.07	0.00	0.00	0.00	0.51	163
70-430	18	E M' haha Pkwy 1/2 mi. E of Longfellow Av (e bank)	6.19	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
70-435	42	47th St E (extended) 1/2 mi. E Longfellow Av	9.16	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
70-440	12	28th Av S @ W 47th St (s bank)	34.48	0.68	0.06	0.06	0.20	0.00	0.00	0.50	236
70-445	12	28th Av S 500' S of 46th St E (n band)	5.60	1.00	0.00	0.00	0.00	0.00	0.00	0.45	65
70-450	12	29th Av S 500' N E M' haha Pkwy (s band)	2.65	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-455	12	29th Av S 500' S of 46th St E (n bank)	2.66	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-460	15	'30th Av S 500' N of E M ' haha Pkwy (s band)	2.67	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-465	15	30th Av S 500' S of E 46th St (n bank)	2.58	1.00	0.00	0.00	0.00	0.00	0.00	0.45	92
70-470	60	Nokomis Av 200' S of 46th St (n bank)	8.55	0.81	0.00	0.00	0.00	0.19	0.00	0.38	164
70-475	12	31st Av S @ E 46th St (n bank)	229.14	0.85	0.02	0.00	0.10	0.03	0.00	0.46	2,806
70-480	24	E 31st St 600' N of 47th St (s bank)	0.68	0.00	0.00	0.00	1.00	0.00	0.00	0.60	0
70-485	48	31st Av @ E 46th St (s bank)	13.36	1.00	0.00	0.00	0.00	0.00	0.00	0.45	140
70-490	15	32nd Av S @ E 46th St	48.75	0.85	0.00	0.00	0.15	0.00	0.00	0.47	466
70-495	12	32nd Av S 250' N of E M' haha Pkwy (s bank)	7.74	1.00	0.00	0.00	0.00	0.00	0.00	0.45	66
70-500	15	E 47th St 200' W of 32nd Av S	0.56	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-505	27	32nd Av S 300' N of E M' haha Pkwy (s bank)	8.12	0.89	0.00	0.00	0.00	0.11	0.00	0.41	110
70-510	30	33rd Av S '250' NE of E M' haha Pkwy (s bank)	41.82	0.99	0.01	0.00	0.00	0.00	0.00	0.45	360
70-515	18	34th Av S '150 N of E M' haha Pkwy (s bank)	62.73	0.86	0.14	0.00	0.00	0.00	0.00	0.47	778
70-520	15	35th Av S @ E M' haha Pkwy (s bank)	6.05	1.00	0.00	0.00	0.00	0.00	0.00	0.45	74
70-525	12	35th Av S @ e 47th St	6.23	1.00	0.00	0.00	0.00	0.00	0.00	0.45	110
70-530	24	35th Av S 100' S of Crosby Av S	1.67	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-535	12	35th Av S @ E 47th St (s bank)	30.24	0.75	0.05	0.00	0.00	0.20	0.00	0.39	370
70-540	12	36th Av S @ Crosby Av (n bank)	5.10	0.32	0.00	0.00	0.00	0.68	0.00	0.21	63
70-545	12	37th Av S 100' N of E 47th St (s bank)	1.89	1.00	0.00	0.00	0.00	0.00	0.00	0.45	55
70-550	12	37th Av S Crosby Av S	1.77	1.00	0.00	0.00	0.00	0.00	0.00	0.45	55

STORM DRAINAGE AREAS CHARACTERIZATION

Outfall	Pipe Size(in)	Location of Outfall	Total(Ac)	Res	Comm	Ind	Public	Open	Rail	Runoff	Pop
70-555	12	E 47th St @ 38th Av S (s bank)	1.73	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-560	12	E M' haha Pkwy @ 39th Av S (s bank)	3.33	1.00	0.00	0.00	0.00	0.00	0.00	0.45	39
70-565	12	39th Av S 250' N of E 49th St (s bank)	16.63	0.40	0.00	0.00	0.00	0.60	0.00	0.24	143
70-570	24	E 49th St @ 30th Av S	1.23	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
70-575	48	Godfrey Rd @ 46th Av S (extended)	15.39	1.00	0.00	0.00	0.00	0.00	0.00	0.45	175
70-580	12	Portland Av S 250' S of Diamond Lake Rd	119.93	0.73	0.10	0.05	0.00	0.12	0.00	0.43	1,025
71-010	18	E 55th St @ Portland Av S	1.12	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
71-020	24	E 56th St @ Park Av S	14.05	1.00	0.00	0.00	0.00	0.00	0.00	0.45	115
71-030	12	E 57th St @ Portland Av S	28.58	0.98	0.02	0.00	0.00	0.00	0.00	0.45	328
71-040	36	E 58th St @ Portland Av S	20.93	0.34	0.00	0.00	0.00	0.66	0.00	0.22	131
71-050	12	Diamond Lake Lane @ E 59th St	120.42	0.95	0.05	0.00	0.00	0.00	0.00	0.46	1,218
71-060	66	W 58th St @ Clinton Av S	3.11	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
71-070	54	E Diamond Lake Road @ Clinton Av S	386.69	0.60	0.15	0.15	0.05	0.05	0.00	0.49	3,657
71-080	12	Hampshire Drive @ E Diamond Lake Rd	101.79	0.85	0.10	0.05	0.00	0.00	0.00	0.47	938
71-090	12	Diamond Lake Rd 250' E of Hampshire Drive	6.50	0.99	0.00	0.00	0.00	0.01	0.00	0.45	69
71-100	21	Nokomis Pkwy at Parking Lot on North Shore	1.99	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
72-010	18	E Nokomis Pkwy approx. 100' N of 50th St	17.32	0.00	0.00	0.00	0.15	0.85	0.00	0.18	0
72-020	21	E Nokomis Pkwy approx 200 N of 52nd St E	24.70	0.77	0.05	0.00	0.00	0.18	0.00	0.39	205
72-030	36	E Nokomis Pkwy @ E 53rd St	5.25	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
72-040	18	E Nokomis Pkwy @ 54th St (extended)	166.54	0.80	0.04	0.00	0.03	0.13	0.00	0.42	1,911
72-050	36	E Nokomis Pkwy E 56th St	5.16	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
72-060	12	Cedar Av S 500' N of Nokomis Pkwy	113.04	0.69	0.00	0.00	0.04	0.27	0.00	0.36	947
72-070	12	W Nokomis Pkwy 500' W of Cedar Av S	2.21	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
72-080	73x115	Edgewater Blvd at Nokomis Lane	4.74	0.00	1.00	0.00	0.00	0.00	0.00	0.60	0
72-090	42	Edgewater Blvd 50' W of Nokomis Lane	68.71	0.92	0.00	0.00	0.05	0.03	0.00	0.45	717
72-100	12	Nokomis Pkwy 600' W of Cedar Av S	68.32	0.91	0.09	0.00	0.00	0.00	0.00	0.46	760
72-110	27	E Nokomis Pkwy at 54th St	3.22	1.00	0.00	0.00	0.00	0.00	0.00	0.45	610
72-120	30	Cedar Av S at E 52nd St	62.98	1.00	0.00	0.00	0.00	0.00	0.00	0.45	589
72-130	12	E Nokomis Pkwy at Parking Lot on NW Shore	58.06	0.96	0.04	0.00	0.00	0.00	0.00	0.46	706
72-140	24	Nokomis Pkwy at Parking Lot on N Shore	10.19	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
72-150	12	W Nokomis Pkwy 500' S of Minnehaha Creek	4.76	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
72-160	48	E 61st St @ Bloomington Av S	4.55	0.95	0.00	0.00	0.00	0.05	0.00	0.43	675
73-010	42	E 61st St @ Bloomington Av S	20.76	0.98	0.00	0.00	0.00	0.02	0.00	0.44	92
73-020	12	North Shore of Taft Lake	57.47	0.97	0.00	0.00	0.00	0.03	0.00	0.44	583
73-030	12	Hwy 62 at NW Shore of Mother Lake	21.56	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
74-010	18	59th St E at 26th Ave S	44.39	0.81	0.19	0.00	0.00	0.00	0.00	0.48	111
74-020	12	Highway 62 @ SW shore of Wetland	4.41	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
75-005	12	Highway 62 frontage Rd @ 15th Av S	12.39	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
75-010	12	E 60th St 50' W of 15th Av S	3.65	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
75-020	15	14th Av S @ E 59th St	1.53	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
75-030	15	E 59th St @ 12th Av S	8.38	1.00	0.00	0.00	0.00	0.00	0.00	0.45	35
75-040	60x69	E 43rd St @ 23rd Av S (extended)	14.74	1.00	0.00	0.00	0.00	0.00	0.00	0.45	309
76-010	42	27th Av S @ E44th St	907.31	0.86	0.07	0.02	0.03	0.02	0.00	0.46	13,563
76-020	15	E 44th St @ 27th Av S	88.62	0.96	0.04	0.00	0.00	0.00	0.00	0.46	1,074
76-030	15	E 45th St @ 28th Av S	7.55	1.00	0.00	0.00	0.00	0.00	0.00	0.45	70

STORM DRAINAGE AREAS CHARACTERIZATION

Outfall	Pipe Size(in)	Location of Outfall	Total(Ac)	Res	Comm	Ind	Public	Open	Rail	Runoff	Pop
76-040	15	E 46th St @ 28th Av S	4.67	0.25	0.00	0.00	0.00	0.75	0.00	0.19	0
81-010	18	Wirth Pkwy @ S side of Birch Pond	31.17	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
82-010	36	Powderhorn Terrace @ 12th Av S	23.53	0.72	0.22	0.06	0.00	0.00	0.00	0.49	457
82-020	36	15th Av S 300' S of E 34th St	73.45	0.94	0.03	0.01	0.02	0.00	0.00	0.46	1,285
82-030	30	E 35th St @ 13th Av S	90.04	0.91	0.04	0.01	0.02	0.02	0.00	0.45	1,998
82-040	36	10th Av S 200' S of E 33rd St	98.49	0.85	0.03	0.02	0.08	0.02	0.00	0.46	1,881
83-010		W 61st St @ Grass Lake Terrace	6.59	1.00	0.00	0.00	0.00	0.00	0.00	0.45	39
83-015	24	S Shore of Grass Lake @ Grass Lake Terrace	0.99	1.00	0.00	0.00	0.00	0.00	0.00	0.45	0
83-020	48	Road btwn W 61st St & Grass Lake Terrace	85.96	0.96	0.00	0.00	0.00	0.04	0.00	0.44	241
83-025	36	Road btwn W 61st St & Grass Lake Terrace	51.23	1.00	0.00	0.00	0.00	0.00	0.00	0.45	474
83-030	24	W Grass Lake Terr. @ SW corner of Grass Lake	0.82	0.00	0.00	1.00	0.00	0.00	0.00	0.60	0
83-040	32	W Grass Lake Terr. @ W shore of Grass Lake	1.08	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0
83-050	24	W 59th St (extended) @ Grass Lake Terrace	40.40	0.99	0.00	0.01	0.00	0.00	0.00	0.45	295
83-060	15	Girard Av S 250' S Grass Lake Terrace	10.05	1.00	0.00	0.00	0.00	0.00	0.00	0.45	149
83-070	24	Girard Av S @ W 60th St	1.19	0.82	0.08	0.00	0.10	0.00	0.00	0.48	1,426
83-080	60	Girard Av S 250' N of Dupont Av S	178.63	0.82	0.08	0.00	0.10	0.00	0.00	0.48	1,426
83-090	15	Dupont Av S @ Girard Av S	9.16	0.85	0.00	0.00	0.00	0.15	0.00	0.40	78
84-010	12	Hwy 62 between 28th and 34th Ave S	16.93	0.86	0.00	0.14	0.00	0.00	0.00	0.47	0
85-010	12	Ewing Ave S & W 22nd St.	21.56	0.86	0.00	0.14	0.00	0.00	0.00	0.47	0

SOURCES OF POLLUTANTS IN STORM WATER RUNOFF
Minneapolis Public Works

	Fossil Fuel Combustion Incinerators	Gasoline Consumption	Metal Corrosion Metal Protection	Road Salts	Tires	Asphalt	Fertilizers, Pesticides, Soil Treatments	Wood Preservatives	Paints and Stains	Plastics	Soil Erosion	Sanitary Waste	Manufacturing	Animal Waste	Atmospheric Deposition	Plant Materials
Organic Toxic Pollutants																
Volatiles	√	√		√		√	√		√	√		√	√	√	√	
Acid Compounds	√	√					√	√	√			√		√		
Base/Neutral	√					√	√	√	√	√		√	√	√		
Pesticides					√		√								√	√
Other Toxic Pollutants (Metals and Cyanide) and Total Phenols																
Antimony			√						√	√	√		√		√	
Arsenic	√						√				√		√		√	
Beryllium	√		√								√		√			
Cadimum	√		√		√		√						√		√	
Chromium			√					√	√				√			
Copper			√				√		√				√			
Lead		√	√		√				√				√		√	
Mercury	√						√		√		√		√		√	
Nickel	√	√				√							√		√	
Selenium	√								√		√		√	√	√	
Silver			√								√		√			
Thallium							√				√		√		√	
Zinc			√	√	√				√				√			
Cyanide		√	√	√												
Phenols						?		√		√						

SOURCES OF POLLUTANTS IN STORM WATER RUNOFF
Minneapolis Public Works

	Fossil Fuel Combustion Incinerators	Gasoline Consumption	Metal Corrosion Metal Protection	Road Salts	Tires	Asphalt	Fertilizers, Pesticides, Soil Treatments	Wood Preservatives	Paints and Stains	Plastics	Soil Erosion	Sanitary Waste	Manufacturing	Animal Waste	Atmospheric Deposition	Plant Materials
Other Conventional and Non-Conventional Pollutants																
Total Dissolved Solids (TDS)	√			√		√	√					√		√	√	√
Total Suspended Solids (TSS)	√		√	√	√	√	√			√	√	√	√	√	√	√
Biochemical Oxygen Demand (BOD_5)											√	√		√	√	√
Chemical Oxygen Demand (COD)									√				√		√	√
Oil and Grease		√				√							√			
Fecal Coliform											?	√		√	√	
Fecal Streptococcus											?	√		√	√	
Phosphorus, Total	√	√			?	?	√				√	√	√	√	√	√
Phosphorus, Dissolved	√	√			?	?	√				√	√		√	√	√
pH			√	√												
Total Kjehdahl Nitrogen							√					√		√	√	√
Nitrate + Nitrite		√					√				√	√	√	√	√	√
Total Ammonia and Organic Nitrogen							√					√		√	√	√
Total Residual Chlorine			√	√						√		√	√		√	

23 National Pollutant Discharge Elimination System (NPDES) Monitoring

Background

The Minneapolis Park and Recreation Board (MPRB) and Minneapolis Public Works (MPW) Department are responsible for compliance with the National Pollutant Discharge Ellimination System (NPDES) stormwater permit. The MPRB is responsible for monitoring and reporting the data to the City. The purpose of monitoring for the NPDES permit is to characterize the impacts of stormwater discharges. Previously, the MPRB and MPW partnered with the City of St. Paul to fulfill the NPDES permit requirements. Five sites were monitored for 2001-2004 located in Minneapolis and St. Paul. In 2005, four new sites were selected for monitoring located in Minneapolis. The new sites were selected to comply with the original NPDES permit and to assist MPW with their modeling efforts.

Methods

This summary includes the equipment installation at each site, the parameters monitored, field quality assurance sampling, data handling, validation and reporting.

Site Installation

Equipment installation began when freezing temperatures were no longer a concern in the spring since freezing temperatures can damage transducers. See Table 23A for site locations and characteristics. See Figure 23A for a map of site locations.

The equipment installed at each site included an ISCO 3700 sampler, an area/velocity pressure transducer and ISCO 4150 datalogger. The dataloggers were flow paced and adjusted accordingly throughout the year to collect samples over the entire hydrograph.

Sites 6 and 7 were installed on 5/23/05. Sites 8 and 9 were installed on 5/24/05.

Monitored Parameters

Storm event samples were collected May through October and one snowmelt grab sample was collected in February. The target frequency for sample collection was once a month. If a sample was missed one month due to lack of events, then two were taken the next month. Total volume sampled for each site and total recorded volumes are given in Table 23B along with the percentage sampled per season. For detailed information on sampling events see Table 23C. Multiple bacteria grab samples were taken throughout the season. Fecal coliform samples were also taken from the third composite bottle for each collected event.

Table 23A. NPDES stormwater monitoring sites for Minneapolis, MN.

	SD006	SD007	SD008	SD009
Location	22nd St. and Aldrich Ave.	E. 14th St. and Park Ave. S.	Kenwood Pkwy- north end of Parade Stadium	335 ft east of 61st St. and Harriet Ave.
Land Use	Multi-Family Residential	Commercial/Industrial/ High Rise Residential	Recreational/Parkland	Commercial/Industrial
Area (acres)	8.9	13.1	1.9	34.9
Pipe Diameter (inches)	18	42	18	36
Outfall ID#	10-430J	10-430D	10-430J	71-070

Table 23B. NPDES site volume totals for the sampling period 5/25/05-10/31/05.

	Site 6	Site 7	Site 8	Site 9
Total volume of sampled events (cf)	53,780	279,240	3,756	629,020
Total volume recorded for 2005 (cf)	118,080	601,640	25,600	1,796,810
% sampled ANNUAL	46%	46%	15%	35%
% sampled SPRING (April- June)	6%	8%	9%	5%
% sampled SUMMER (July- September)	8%	15%	6%	14%
% sampled FALL (October- November)	31%	24%	0%	17%

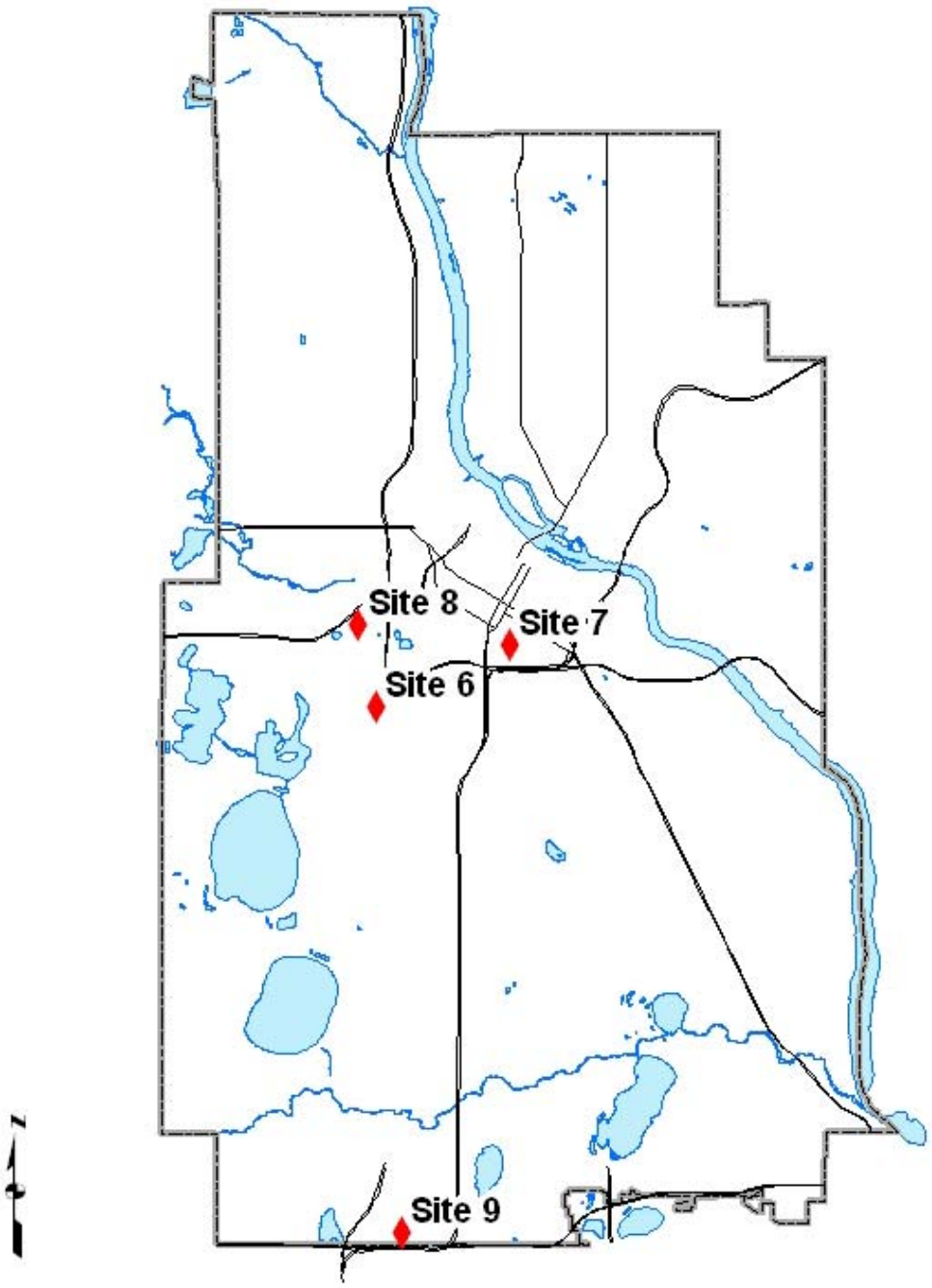

Figure 23A. Map of the 2005 NPDES sites located in Minneapolis, MN.

Table 23C. Precipitation event data and samples collected for NDPES sites in 2005. A precipitation event is defined as being greater than 0.10 inches and separated by 8 hours. Rain gage located at 3800 Bryant Ave. S., Minneapolis, MN.

Event	Start Date	Start Time	End Date	End Time	Rainfall (inches)	Duration (hours)	Intensity (in/hr)	Sample Type	2005 NPDES Events Collected			
									Site 6	Site 7	Site 8	Site 9
1	2/3/2005+	n/a	2/3/2005	n/a	n/a	n/a	n/a	grab	X	X		X
2	2/14/2005+	n/a	2/14/2005	n/a	n/a	n/a	n/a	grab			X	
3	5/12/2005	750	5/12/2005	1255	0.61	5.08	0.12	grab	X	X		X
4	5/25/2005	820	5/25/2005	1820	0.30	10.00	0.03	composite				X
5	6/5/2005	1600	6/5/2005	1845	0.10	2.75	0.04	composite		X		X
6	6/8/2005	55	6/8/2005	810	0.81	7.25	0.11	composite	X	X		X
7	6/10/2005	840	6/10/2005	1700	0.32	8.33	0.04	composite		X	X*	
8	6/13/2005	1840	6/13/2005	2325	0.38	4.75	0.08	composite	X		X	
9	6/20/2005	930	6/20/2005	1440	0.99	5.17	0.19	composite	X		X	
10	6/27/2005	1515	6/27/2005	2135	0.85	6.33	0.13	composite			X	
11	7/20/2005	540	7/20/2005	650	0.26	1.17	0.22	composite	X	X	X	X
12	7/25/2005	1645	7/25/2005	1945	1.78	3.00	0.59	composite	X	X	X	X
13	8/8/2005	555	8/8/2005	845	0.11	2.83	0.04	composite		X		
14	8/9/2005	1450	8/9/2005	1550	0.49	1.00	0.49	composite				X
15	8/16/2005	2155	8/16/2005	2235	0.45	0.67	0.67	composite			X	
16	8/18/2005	615	8/18/2005	1405	0.26	7.83	0.03	composite	X			
17	9/7/2005	835	9/7/2005	1250	0.22	4.25	0.05	composite			X	X
18	9/12/2005	950	9/13/2005	1310	0.84	15.33	0.05	composite	X	X		
19	10/4/2005	540	10/5/2005	1025	4.81	28.75	0.17	composite	X	X		X
			Totals		**13.58**				**10**	**10**	**9**	**10**

*** sample was >24hrs old, cBOD, TDP, and F. Coli were not sampled**
+ snowmelt event
n/a= not applicable

The parameters listed in Table 23D were monitored as part of the NPDES permit for each sample collected. Table 23E gives the method used for analysis, reporting limit and holding time for each parameter as reported by the contract laboratory Instrumental Research Inc. (IRI).

Table 23D. List of monitored parameters for the NPDES permit, 2005.

Parameter	Abbreviation	Units	Sample Type
BOD –carbonaceous, 5 Day	cBOD	mg/L	Composite
Cadmium, Total	Cd	µg/L	Composite
Chloride, Total	Cl	mg/L	Composite
Specific Conductivity	Sp. Cond	µmhos/cm	Composite
Copper, Total	Cu	µg/L	Composite
Fecal Coliform	F. Coli	#/100mL	Grab -3rd Bottle
Lead, Total	Pb	µg/L	Composite
Nitrite+Nitrate, Total as N	NO2NO3	mg/L	Composite
Ammonia, Un-ionized as N	NH3	mg/L	Composite
Kjeldahl Nitrogen, Total	TKN	mg/L	Composite
pH	pH	standard unit	Grab -3rd Bottle
Phosphorus, Total Dissolved	TDP	mg/L	Composite
Phosphorus, Total	TP	mg/L	Composite
Solids, Total Dissolved	TDS	mg/L	Composite
Solids, Total Suspended	TSS	mg/L	Composite
Zinc, Total	Zn	µg/L	Composite

Notes:

- **BOD is biochemical oxygen demand.**
- **pH was measured in the field using an Oakton Waterproof pHTestr 2. The pH meter was calibrated each sampling trip.**
- **Fecal coliform and pH samples were generally collected from the third composite bottle.**
- **Some samples were collected more than 24 hours after the storm event (Table F). Expired parameters were not collected for these events as noted.**

Table 23E. Analysis method, reporting limit and holding times for parameters used by Instrumental Research Inc.

Parameter	Method	Reporting Limit	Holding Times
cBOD, carbonaceous, 5 Day (20°C)	SM 5210 B	1.0 mg/L	24 hours
Cadmium, Total	EPA 200.9	5 µg/L	6 months
Chloride, Total	SM 4500-Cl^- B	2.0 mg/L	28 days
Specific Conductivity	SM 2510 B	10 µmhos/cm	28 days
Copper, Total	EPA 200.9	5 µg/L	6 months
Fecal Coliform, <10°C	SM 9222D	<1 per 100ml	< 24hrs
Lead, Total	SM 3500-Pb B	5 µg/L	6 months
Nitrite+Nitrate, Total as N	SM 4500-NO_3 E	0.030 mg/L	28 days
Ammonia, Un-ionized as N	SM 4500-NH_3 F	0.500 mg/L	7 days
Kjeldahl Nitrogen, Total	SM 4500-Norg B	0.500 mg/L	7 days
Phosphorus, Total Dissolved	SM 4500-P A, B, G	0.010 mg/L	48 hours
Phosphorus, Total	SM 4500-P A, B, E	0.010 mg/L	48 hours
Solids, Total Dissolved	SM 2540 C	10.0 mg/L	7 days
Solids, Total Suspended	SM 2540 D	1.0 mg/L	7 days
Zinc, Total	SM 3500-Zn B	20-50 µg/L	6 months

Field Quality Assurance Samples

A number of quality assurance samples (10% of samples) were used during the sampling season. The purpose of these samples was to ensure sample integrity. Field blanks consisting of deionized water accompanied samples from the sites to the analytical laboratory. One field blank was used for the four sites each sampling trip for a complete analysis of NPDES parameters. All field blank parameters came back from the laboratory below the minimum detection limits.

An equipment blank (1-2 L sample) was collected on 11/7/05. To collect the equipment blank, a large bottle of deionized water was placed at the end of the sampler tubing. The intake line was flushed and pumped by pulling deionized water through the sampler, simulating the pre-sample flush. The flush water was back-pumped to waste and then a sample of deionized water was collected. The sample was of sufficient volume to allow analysis of all parameters. The equipment blank parameters came back from the laboratory below the minimum detection limits.

Data Handling, Validation and Reporting

Manual transcription of data was minimized to reduce the need for data validation. A minimum of 10% of the final data were checked by hand against the raw data sent by the laboratory to ensure there were no errors entering or transferring data. See Section 27, Quality Assurance/Quality Control Assessment Report for details.

Field measurements were recorded on the Field Measurement Form in the Field Log Book and then entered into a computer database. Computerized data from the laboratory were forwarded to the MPRB. Computerized data from the laboratory were checked and passed laboratory

quality assurance procedures. Protocols for data validity followed those defined in the Storm Water Monitoring Program Manual (MPRB, 2001). For data reported below the reporting limit, the reporting limit value was divided in half and then used for all calculations.

A Chain of Custody form accompanied each set of sample bottles delivered to the lab. Each sampler tray was labeled indicating the date and time of collection, site location and the field personnel's initials. The time each sample was collected was recorded from the ISCO sampler onto field sheets. A complete description of methods can be found in the Storm Water Monitoring Program Manual (MPRB, 2001).

Results of this season's monitoring can be found in the following results section. Statistics for event mean concentrations were calculated using Microsoft Excel spreadsheets. The computer program FLUX and computer model P8 were used to calculate flow-weighted mean concentrations and estimate snowmelt runoff volume respectively.

A description of FLUX as described in the FLUX manual (Walker, 1996):

> "FLUX is an interactive program designed for use in estimating the loadings of nutrients or other water quality components passing a tributary sampling station over a given period of time. These estimates can be used in formulating reservoir nutrient balances over annual or seasonal averaging periods appropriate for application of empirical eutrophication models.
>
> Using six calculation techniques, FLUX maps the flow/concentration relationship developed from the sample record onto the entire flow record to calculate total mass discharge and associated error statistics. In many cases, stratifying the data increases the accuracy and precision of loading estimates."

A description of P8 as described in the software's introduction:

> "P8 is a model for predicting the generation and transport of stormwater runoff pollutants in small urban catchments...
>
> Simulations are driven by hourly rainfall and daily air-temperature time series..."

RESULTS & DISCUSSION

Event mean concentrations are listed in Table 23F. One *E. coli* grab sample was collected on 8/18/05 for sites 6, 7, and 9. There was not enough flow to collect a grab sample at Site 8. The 6/10/05 event for Site 8 was collected after 24 hours and expired parameters were dropped (cBOD, TDP, F. Coli).

A significant land use change occurred at Site 8 in late summer. In August, Cirque du Soleil used Parade Stadium for their performances. On 8/22/05 the site was transformed from a MPRB baseball field into blacktop and circus tents. The Site 8 land use was dramatically

changed from open parkland to paved, impervious area. Increased pipe volumes for storm events were evident. One water quality sample was taken after the land use change on 9/7/05. The land use changes should be considered when analyzing the data for Site 8.

Data with questionable usability were underlined. In 2005, four records were flagged. These data failed the monthly performance standard and are suspect, but the data were still used because the values were deemed reasonable. These data were used for all analyses in this report. Further quality assurance protocols can be found in Section 27.

Table 23G lists the statistical calculations for all measured parameters. *E. coli* statistics for individual sites were not run because there was only a single sample per site. Many parameters fluctuate with season. Typically, maximums for most parameters were reached during early spring and fall. This was probably due to snowmelt accumulations and leaf litter, respectively. The event on 7/20/05 also showed increased concentrations for some parameters which is most likely due to the lack of rain for an extended period of time. The last event prior to 7/20/05 was on 7/3/05 which could have allowed a large accumulation of nutrients and pollutants.

Peak phosphorus levels during snowmelt were probably due to an accumulation of animal, lawn, and leaf litter waste in late fall and during winter months. The maximum TP of 1.80 mg/L at Site 8 was on 2/14/05. Most snowmelt samples were dark brown and very turbid except Site 8 which was tan colored and clear. This is most likely due to the filtering effect of the park land use (prior to Cirque du Soleil). High Cl concentrations are typical for stormwater runoff during winter and early spring months when street salt is used. Sites 8 and 9 showed increased amounts of chloride during the summer months. Fertilizers could be a possible source of chloride at Site 8 which leaches readily through the soil. There are many industries surrounding Site 9 which may be contributing to chloride levels during the summer months. Site 9 also has a small baseflow indicating that there is discharge coming from some unknown source. Chloride levels did not exceed U.S. Environmental Protection Agency's Chronic Freshwater Quality Criteria of 230 mg/L. Currently there is no chloride standard for stormwater. Also, specific conductivity, TDS, and TSS generally tend to be high during winter and spring months. High TSS values might be attributed to accumulated sand applied to icy roads. Almost all maximum metal values followed the same trend as TSS. Cadmium was below the detection limit for all events. Zinc was below the detection limit for all Site 8 events. Fecal coliform values were lowest for the snowmelt event and generally peaked during summer months.

Table 23F. NDPES sampled event data by site for 2005.

Date	Time	Site ID & Location	Sample Type	TP mg/L	TDP mg/L	TKN mg/L	NH3 mg/L	NO3NO2 mg/L	Cl mg/L	Field pH	Sp.Cond. µmhos/cm	F. Coli cfu/100mL	*E. Coli* mpn/100mL	cBOD mg/L	TSS mg/L	TDS mg/L	Hardness mg/L	Cd µg/L	Cu µg/L	Pb µg/L	Zn µg/L
2/3/2005	12:50	Site #6 22nd & Aldrich	grab	1.12	0.473	9.50	8.53	0.824	101	9.7	4830	1,300		34	245	1840	104	<5.00	59.2	130	320
5/12/2005	10:10	Site #6 22nd & Aldrich	grab	0.452	0.262	2.88	1.05	0.223	<2.00	7.7	46.0	16,000		16	72	41	18.0	<5.00	12.2	42.8	107
6/8/2005	8:33	Site #6 22nd & Aldrich	composite	0.233	0.109	1.42	1.11	0.383	<2.00	8.3	42.4	14,000		17	57	34	20.0	<5.00	18.3	148	74
6/13/2005	22:15	Site #6 22nd & Aldrich	composite	0.337	0.106	2.19	1.08	0.494	<2.00	7.4	39.7	46,500		7	143	56	16.0	<5.00	21.1	301	153
6/20/2005	14:29	Site #6 22nd & Aldrich	composite	0.302	0.115	1.79	1.40	0.358	<2.00	7.1	34.0	75,000		2	76	32	14.0	<5.00	14.8	140	54
7/20/2005	6:30	Site #6 22nd & Aldrich	composite	0.704	0.217	3.63	2.85	0.945	<2.00	6.4	65.4	41,500		26	119	80	24.0	<5.00	33.1	96.0	121
7/25/2005	19:28	Site #6 22nd & Aldrich	composite	0.266	0.075	1.40	0.830	0.228	<2.00	7.2	26.6	100,000		5	65	37	12.0	<5.00	9.50	83.4	74
8/19/2005	8:30	Site #6 22nd & Aldrich	grab									35,000	39,800								
8/18/2005	12:55	Site #6 22nd & Aldrich	composite	0.279	0.124	1.62	0.832	0.268	<2.00	6.4	73.0	17,900		7	26	92	32.0	<5.00	25.7	23.6	<50
9/7/2005	13:15	Site #6 22nd & Aldrich	grab									19,000									
9/13/2005	3:54	Site #6 22nd & Aldrich	composite	0.149	0.072	0.845	0.597	0.332	<2.00	6.9	35.6	80,000		2	8	18	18.0	<5.00	7.70	13.7	<50
10/4/2005	19:40	Site #6 22nd & Aldrich	composite	0.421	0.071	2.62	0.892	0.513	<2.00	8.6	44.1	210,000		8	118	43	24.0	<5.00	18.8	123	88
2/3/2005	13:30	Site #7 14th & Park	grab	0.757	0.360	5.05	4.23	0.582	99.0	9.0	4610	955		19	133	1800	84.0	<5.00	43.0	39.3	164
5/12/2005	10:45	Site #7 14th & Park	grab	0.147	0.077	1.40	0.640	0.230	<2.00	8.3	46.1	11,000		5	25	28	20.0	<5.00	9.00	6.70	<50
6/5/2005	16:38	Site #7 14th & Park	composite	0.389	0.053	2.10	1.15	0.389	<2.00	7.3	59.5	240,000		10	143	65	20.0	<5.00	40.0	53.3	156
6/8/2005	8:30	Site #7 14th & Park	composite	0.137	0.053	0.911	0.510	0.424	<2.00	9.4	41.9	34,000		11	35	40	52.0	<5.00	15.0	12.7	<50
6/10/2005	10:34	Site #7 14th & Park	composite	0.178	0.051	1.45	0.760	0.660	<2.00	7.6	55.9	19,000		18	52	63	20.0	<5.00	21.0	17.0	85
7/20/2005	6:40	Site #7 14th & Park	composite	0.393	0.129	2.53	2.00	0.825	<2.00	7.1	68.4	3,000		20	69	78	24.0	<5.00	36.7	23.6	131
7/25/2005	18:49	Site #7 14th & Park	composite	0.136	0.039	0.843	<0.500	0.206	<2.00	7.6	29.4	18,500		4	23	40	12.0	<5.00	8.60	15.1	<50
8/8/2005	8:48	Site #7 14th & Park	composite	0.354	0.115	2.83	3.62	0.893	1.08	8.0	63.9	6,000		12	86	81	24.0	<5.00	26.8	33.1	93
8/18/2005	12:40	Site #7 14th & Park	grab									24,800	26,200								
9/7/2005	10:35	Site #7 14th & Park	grab									9,000									
9/13/2005	4:12	Site #7 14th & Park	composite	0.176	0.032	2.00	0.912	0.393	<2.00	7.1	48.0	7,500		3	16	37	20.0	<5.00	11.3	7.60	<50
10/4/2005	21:19	Site #7 14th & Park	composite	0.101	0.028	<0.500	0.265	0.083	<2.00	7.5	16.1	2,550		1	32	<10	12.0	<5.00	11.4	16.0	<50
2/14/2005	13:50	Site #8 Parade Stadium	grab	1.80	1.10	8.33	7.95	1.34	35.0	7.7	346	145		27	156	215		<5.00	14.7	25.3	<50
6/10/05*	18:22	Site #8 Parade Stadium	composite	0.206		2.47	1.82	0.113	<2.00	expired	162				11	180	92.0	<5.00	9.90	<5.00	<50
6/13/2005	23:26	Site #8 Parade Stadium	composite	0.154	0.095	2.26	1.50	0.066	<2.00	7.8	386	23,000		6	5	321	180	<5.00	6.60	6.60	<50
6/20/2005	14:18	Site #8 Parade Stadium	composite	0.621	0.290	1.90	1.35	0.349	<2.00	7.4	77.3	49,000		5	66	60	29.0	<5.00	8.20	14.0	<50
6/27/2005	20:09	Site #8 Parade Stadium	composite	0.210	0.107	1.89	1.47	0.227	3.45	6.8	118	43,000		4	9	105	55.0	<5.00	10.0	<5.00	<50
7/20/2005	6:48	Site #8 Parade Stadium	composite	0.652	0.426	2.18	1.15	0.510	20.0	6.8	191	61,000		13	19	156	80.0	<5.00	8.10	<5.00	<50
7/25/2005	18:26	Site #8 Parade Stadium	composite	0.214	0.108	1.57	0.860	0.054	10.4	7.2	124	32,000		5	21	116	60.0	<5.00	7.70	7.50	<50
8/16/2005	15:30	Site #8 Parade Stadium	composite	0.086	0.031	0.769	0.923	0.240	71.8	7.2	671	344,000		<1	15	476	364	<5.00	<5.00	13.2	<50
9/7/2005	10:15	Site #8 Parade Stadium	grab									200									
9/7/2005	11:14	Site #8 Parade Stadium	composite	0.223	0.066	3.45	1.27	0.544	<2.00	8.0	91.6	950		11	157	109	60.0	<5.00	15.1	10.9	<50
2/3/2005	14:00	Site #9 61st & Harriet	grab	0.899	0.200	7.22	6.89	1.00	161	9.7	5690	30		13	391	2980	180	<5.00	56.7	30.4	289
5/12/2005	11:15	Site #9 61st & Harriet	grab	0.390	0.143	2.07	1.97	0.318	48.6	n/c	220	1,100		6	109	138	56.0	<5.00	17.7	18.0	127
5/25/2005	19:03	Site #9 61st & Harriet	composite	0.591	0.078	5.22	5.19	0.785	<2.00	9.5	226	1,000		24	286	153	100	<5.00	38.1	27.0	185
6/5/2005	17:35	Site #9 61st & Harriet	composite	0.376	0.072	2.66	1.75	1.12	<2.00	8.4	169	2,500		8	171	136	74.0	<5.00	26.3	14.2	142
6/8/2005	8:41	Site #9 61st & Harriet	composite	0.417	0.136	1.81	1.75	0.373	<2.00	9.8	108	3,000		18	238	66	66.0	<5.00	31.8	21.8	162
7/20/2005	7:11	Site #9 61st & Harriet	composite	0.404	0.115	3.36	2.83	0.565	12.8	9.1	116	2,000		12	217	106	60.0	<5.00	38.5	12.2	158
7/25/2005	18:02	Site #9 61st & Harriet	composite	0.552	0.051	3.35	2.92	0.337	8.43	9.2	104	<100		11	326	94	72.0	<5.00	44.1	25.3	217
8/10/2005	7:41	Site #9 61st & Harriet	composite	0.130	0.056	1.03	2.50	0.931	9.03	8.6	105	400		2	62	70	41.0	<5.00	17.3	7.50	<50
8/18/2005	12:05	Site #9 61st & Harriet	grab									25,700	28,700								
9/7/2005	12:09	Site #9 61st & Harriet	composite	0.364	0.079	13.8	0.476	2.82	43.2	8.6	226	9,000		10	155	220	112	<5.00	25.5	13.3	80
10/4/2005	13:59	Site #9 61st & Harriet	composite	0.295	0.050	10.0	2.19	0.505	23.1	8.8	150	1100		4	140	148	76.0	<5.00	22.0	11.7	94

***collected after 24 hours**

Data with questionable usability are underlined. These data failed the monthly performance standard and are suspect, but the data were still used because the values were reasonable.

Table 23G. Event mean concentration statistics for 2005. All = includes all 4 sites, STDEV = standard deviation, COV = coefficient of variance

Site ID	Statistical Function	TP mg/L	TDP mg/L	TKN mg/L	NH3 mg/L	NO3NO2 mg/L	Cl mg/L	Field pH	Sp.Cond. µmhos/cm	F. Coli cfu/100mL	*E. Coli* mpn/100mL	cBOD mg/L	TSS mg/L	TDS mg/L	Hardness mg/L	Cd µg/L	Cu µg/L	Pb µg/L	Zn µg/L
6	MEAN (geometric)	0.363	0.133	2.21	1.32	0.406	1.59	7.5	69.2	31,200		9	68	63	22.5	<5.00	18.6	80.2	80
6	MEAN (arithmetic)	0.426	0.162	2.79	1.92	0.457	11.0	7.6	524	54,700		12	93	227	28.2	<5.00	22.0	110	104
6	MAX	1.12	0.473	9.50	8.53	0.945	101	9.7	4830	210,000		34	245	1840	104	<5.00	59.2	301	320
6	MIN	0.149	0.071	0.845	0.597	0.223	1.00	6.4	26.6	1,300		2	8	18	12.0	<5.00	7.70	13.7	25
6	MEDIAN	0.320	0.112	1.99	1.06	0.371	1.00	7.3	43.2	38,200		7	74	42	19.0	<5.00	18.6	110	81
6	STDEV	0.288	0.126	2.49	2.40	0.248	31.6	1.0	1510	57,600		11	68	566	27.3	0.00	15.1	82.7	86
6	NUMBER	10	10	10	10	10	10	10	10	12		10	10	10	10	10	10	10	10
6	COV	0.675	0.777	0.894	1.25	0.542	2.87	0.14	2.89	1		0.846	0.731	2.50	0.966	0.00	0.686	0.751	0.827
7	MEAN (geometric)	0.226	0.068	1.50	0.938	0.385	1.60	7.9	70.3	10,700		7	48	57	23.8	<5.00	18.7	18.4	55
7	MEAN (arithmetic)	0.277	0.094	1.94	1.43	0.468	10.8	7.9	504	31,400		10	62	223	28.8	<5.00	22.3	22.4	75
7	MAX	0.757	0.360	5.05	4.23	0.893	99.0	9.4	4610	240,000		20	143	1800	84.0	<5.00	43.0	53.3	164
7	MIN	0.101	0.028	0.250	0.250	0.083	1.00	7.1	16.1	955		1	16	5	12.0	<5.00	8.60	6.70	25
7	MEDIAN	0.177	0.053	1.72	0.836	0.409	1.00	7.6	52.0	10,000		10	44	51	20.0	<5.00	18.0	16.5	55
7	STDEV	0.203	0.100	1.35	1.41	0.268	31.0	0.8	1440	66,500		7	46	553	22.4	0.00	13.5	15.0	58
7	NUMBER	10	10	10	10	10	10	10	10	12		10	10	10	10	10	10	10	10
7	COV	0.732	1.06	0.699	0.986	0.571	2.87	0.10	2.86	2		0.676	0.745	2.48	0.777	0.00	0.604	0.671	0.773
8	MEAN (geometric)	0.300	0.153	2.26	0.242	1.54	4.96	7.4	188	9,880		6	26	161	85.2	<5.00	8.29	6.98	25
8	MEAN (arithmetic)	0.463	0.277	2.76	0.382	2.03	16.1	7.4	241	61,500		9	51	193	115	<5.00	9.19	9.44	25
8	MAX	1.80	1.10	8.33	1.34	7.95	71.8	8.0	671	344,000		27	157	476	364	<5.00	15.0	25.3	25
8	MIN	0.086	0.031	0.769	0.054	0.860	1.00	6.8	77.3	145		<1	5	60	29.0	<5.00	2.50	2.50	25
8	MEDIAN	0.214	0.108	2.18	0.240	1.35	3.45	7.3	162	32,000		6	19	156	70.0	<5.00	8.20	7.50	25
8	STDEV	0.542	0.356	2.21	0.399	2.24	23.9	0.4	195	108,000		8	62	131	110	0.00	3.90	7.46	0
8	NUMBER	9	8	9	9	9	9	8	9	9		8	9	9	8	9	9	9	9
8	COV	1.17	1.28	0.801	1.04	1.10	1.49	0.06	0.809	2		0.904	1.23	0.677	0.958	0.00	0.424	0.790	0
9	MEAN (geometric)	0.399	0.088	3.79	2.33	0.695	9.73	9.1	216	1,090		9	185	162	77.1	<5.00	29.6	16.6	126
9	MEAN (arithmetic)	0.442	0.098	5.05	2.85	0.875	30.9	9.1	711	4,170		11	209	411	83.7	<5.00	31.8	18.1	148
9	MAX	0.899	0.200	13.8	6.89	2.82	161	9.8	5690	25,700		24	391	2980	180	<5.00	56.7	30.4	289
9	MIN	0.130	0.050	1.03	0.476	0.318	1.00	8.4	104	30		2	62	66	41.0	<5.00	17.3	7.50	25
9	MEDIAN	0.397	0.079	3.36	2.34	0.675	10.9	9.1	159	1,100		10	194	137	73.0	<5.00	29.0	16.1	150
9	STDEV	0.205	0.049	4.12	1.86	0.741	48.8	0.5	1750	7,570		6	102	905	39.6	0.00	12.6	7.62	74
9	NUMBER	10	10	10	10	10	10	9	10	11		10	10	10	10	10	10	10	10
9	COV	0.463	0.503	0.815	0.654	0.847	1.58	0.06	2.46	2		0.595	0.489	2.20	0.473	0.00	0.397	0.420	0.501
All	MEAN (geometric)	0.315	0.103	2.31	1.45	0.408	3.29	7.9	117	7,960	31,000	8	64	97	41.8	<5.00	17.4	20.9	62
All	MEAN (arithmetic)	0.401	0.152	3.14	2.06	0.550	17.2	8.0	501	37,100	31,600	11	105	265	61.2	<5.00	21.6	40.8	90
All	MAX	1.80	1.10	13.8	8.53	2.82	161	9.8	5690	344,000	39,800	34	391	2980	364	<5.00	59.2	301	321
All	MIN	0.086	0.028	0.250	0.250	0.054	1.00	6.4	16.1	30	26,200	<1	5	5	12.0	<5.00	2.50	2.50	25
All	MEDIAN	0.337	0.101	2.18	1.35	0.393	1.00	7.7	91.6	15,000	28,700	9	72	81	46.5	<5.00	17.6	17.0	74
All	STDEV	0.327	0.190	2.89	2.00	0.484	34.9	1.0	1340	68,300	7,240	8	95	595	65.7	0.00	14.2	58.5	76
All	NUMBER	39	38	39	39	39	39	37	39	44	3	38	39	39	38	39	39	39	39
All	COV	0.815	1.25	0.920	0.971	0.879	2.03	0.12	2.67	1.84	0.229	0.738	0.903	2.24	1.07	0.00	0.656	1.43	0.852

Sampled data were fairly comparable to typical urban stormwater data (Tables 23H and 23I). Table 23H shows median values for MPRB 2005 monitored residential sampled sites were comparable or less than reported Nationwide Urban Runoff Program (NURP) values. Most MPRB all land use category values were comparable to NURP values, but all metals were well below NURP values. Most parameters were comparable to MRPB 2001-2004 data except for residential land use Pb values which are much higher in 2005 and mixed land use TP and Zn values which have decreased from previous years. It is important to remember that the new sites monitored in 2005 have similar but not the same land uses as previously monitored.

Table 23H. Typical MEDIAN urban stormwater concentrations. NURP = median event mean concentrations as reported by the Nationwide Urban Runoff Program (USEPA, 1996). MPRB = median values calculated by the Minneapolis Parks & Recreation Board for the identified year(s).

	Residential			Mixed			Composite of all land use categories		
Parameter	MPRB[1] 2005	MPRB[2] 2001-2004	NURP	MPRB[3] 2005	MPRB[4] 2001-2004	NURP	MPRB[5] 2005	MPRB[6] 2001-2004	NURP
TP (mg/L)	0.320	0.498	0.383	0.177	0.338	0.263	0.337	0.370	0.33
TKN (mg/L)	1.99	2.40	1.9	1.72	1.62	1.288	2.18	1.76	1.5
NO3NO2 (mg/L)	0.371	0.334	0.736	0.409	0.337	0.558	0.582	0.389	0.68
BOD (mg/L)	7	12	10	10	14	7.8	9	12	9
TSS (mg/L)	74	93	101	44	69	67	72	81	100
Cu (µg/L)	18.6	15.8	33	18.0	17.8	27	17.6	17.0	30
Pb (µg/L)	110	13.8	144	16.5	15.8	114	17.0	14.7	140
Zn (µg/L)	81	74	135	55	105	154	74	89	160

[1] Site 6 data
[2] Sites 1 and 2 data
[3] Site 7 data
[4] Sites 5 and 5a data
[5] Sites 6-9 data
[6] Sites 1-5a data

Most MPRB mean concentrations were comparable to other studies as listed in Table 23I. TP values are most closely related to those monitored by local agencies. Data from MPRB Sites 1-5a were similar to the Sites 6-9 in 2005. Nitrogen and Pb increased while Cl, TDS, and Zn decreased.

Table 23I. Typical MEAN urban stormwater concentrations. " -- " = not reported

Parameter	NURP[1]	CWP[2]	Bannerman *et al.*[3]	Mpls PW[4]	St. Paul[5]	MPRB[6] 2001-2004	MPRB[7] 2005
TP (mg/L)	0.5	0.3	0.66	0.417	0.484	0.486	0.401
TDP (mg/L)	--	--	0.27	0.251	--	0.133	0.152
TKN (mg/L)	2.3	--	--	--	2.46	2.32	3.14
NO3NO2 (mg/L)	0.86	--	--	--	0.362	0.470	0.931
NH3 (mg/L)	--	--	--	0.234	--	0.833	1.68
Cl (mg/L)	--	230	--	--	--	332	17.2
BOD (mg/L)	12	--	--	14.9	25	18	11
TDS (mg/L)	--	--	--	73.3	78	576	265
TSS (mg/L)	239	80	262	77.6	129.2	117	105
Cd (µg/L)	--	2	0.4	--	10	1.71	2.50
Cu (µg/L)	50	10	16	26.7	30	27.8	21.6
Pb (µg/L)	240	18	32	75.5	233	22.3	40.8
Zn (µg/L)	350	140	204	148	194	142	90

[1] USEPA (1996)
[2] Center for Watershed Protection (1997)
[3] Monroe study area of Bannerman et al. (1992)
[4] City of Minneapolis Public Works Department (1992)- average from a combination of all land uses
[5] City of St. Paul 1994 stormwater data- average from a combination of land uses
[6] MPRB arithmetic mean calculated from NPDES Sites 1-5a
[7] MPRB arithmetic mean calculated from NPDES Sites 6-9

The model P8 was used to estimate daily flows for snowmelt events and grab samples from January through mid May. Daily flows were used as input for the interactive program FLUX. Daily temperature and hourly precipitation files obtained from the National Oceanic and Atmospheric Administration (NOAA) National Data Center (NNDC) were used as input for P8. The rain gauge is located at the Minneapolis/St. Paul International Airport.

All flow-weighted mean concentrations were calculated using FLUX (Table 23J). FLUX calculates flow-weighted mean concentrations and associated error statistics based on six different calculation methods. Calculation methods 1-Direct Mean Loading and 5-Regression, Second-Order were ignored because they are inappropriate for storm sewer applications where the daily flow file contains a significant number of zero flows (Bruce Wilson, personal communication, 2001). In general, calculation methods 2- Flow-Weighted Concentration and 6-Regression Applied to Individual Daily Flows were used. Sample concentrations and associated daily average flows were used as input for these calculations. The data were often stratified by flow or season to achieve the most accurate and precise results.

Large rain events can lead to pipe surcharges. Surcharges result in inaccurate daily flow calculation and should be considered when evaluating flow-weighted mean concentrations. These events included high precipitation totals or high intensity. The following surcharges occurred at the NPDES sites in 2005:

- Site 6: 6/20/05, 7/25/05, 8/26/05, 9/12/05, 10/4/05
- Site 7: 6/20/05, 8/26/05
- Site 9: 7/25/05, 8/26/05, 10/4/05

The highest and lowest TP concentrations were estimated at Site 9 and 7, respectively. Site 9 is mainly industrial while Site 7 is mostly high rise residential. Site 7 had the lowest estimated TDP, TKN, and NH3. This was probably due to the lack of vegetation inputs (seeds, leaves, grass clippings, etc.) within the Site 7 watershed. Site 9 had the highest estimated concentrations of TKN, NO3NO2, NH3, Cl, TSS, TDS, Cu, and Zn. Site 9 is located adjacent to a large cement aggregate mixing facility which could explain the higher TSS and TDS values. This site sometimes had a small baseflow which should be sampled during future monitoring to distinguish high concentrations from storm events or baseflow. Site 8 had the lowest estimated concentrations of TDP, NO3NO2, cBOD, TSS, Cu, Pb, and Zn. Low concentrations of TSS and metals would be expected for an open parkland watershed as there should be minimal inputs of these parameters. Flow-weighted mean concentrations for Cl and TDS were difficult to estimate using FLUX due to large outliers from the single snowmelt sample therefore these estimates should be used with discretion. When samples were below the MDL then half the MDL was used for calculations. Concentrations for Cd were all below the MDL for each site. Low Cd concentrations have been typical for the Minneapolis/St. Paul area (Table 23L).

Table 23K includes flow-weighted mean pollutant concentrations reported by the U.S. Geological Survey (USGS) for various sites within the Twin Cities (as cited in MPCA, 2000). The Yates watershed was a stabilized residential area. Iverson was a residential watershed under development while Sandberg was predominantly light industrial land use as reported by the USGS (as cited in MPCA, 2000). Site 6 is more closely related to the Yates watershed land use characteristics. Sites 7 and 9 are most comparable to the Sandberg watershed land use characteristics. When comparing the flow-weighted mean concentrations for these sites, it is evident that Site 6 has lower concentrations than Yates for all parameters. Sites 7 and 9 also have lower flow-weighted mean concentrations than Sandberg for almost all parameters and are well within the range. The water quality of Sites 6, 7, and 9 was better than the study sites of 1980.

Most parameters fell within the range of estimated flow-weighted mean concentration of previous years as seen in Table 23L. The parameters TKN, NH3, and Pb had higher concentrations than previous years. The watershed characteristics for the 2005 sites are slightly different than those from previous years which could have been the greatest influence on the concentration differences.

Event mean concentration seasonal statistics for a combination of all sites were calculated and are listed in Table 23M.

Table 23J. Flow-weighted mean concentrations and related statistics for NPDES parameters in 2005. STANDEV= standard deviation.

Site	TP (mg/L)	TDP (mg/L)	TKN (mg/L)	NO3NO2 (mg/L)	NH3 (mg/L)	Cl* (mg/L)	cBOD (mg/L)	TSS (mg/L)	TDS* (mg/L)	Cd (µg/L)	Cu (µg/L)	Pb (µg/L)	Zn (µg/L)
6	0.404	0.137	2.59	0.485	1.57	6.53	12	123	146	2.50	18.6	115	96
7	0.264	0.094	1.75	0.426	1.33	15.1	10	61	266	2.50	18.7	22.0	74
8	0.312	0.171	2.91	0.298	1.40	12.9	7	40	160	2.50	8.86	8.71	25
9	0.434	0.090	6.67	0.582	2.64	37.2	9	208	436	2.50	30.9	17.8	149
MEAN	**0.354**	**0.123**	**3.48**	**0.448**	**1.74**	**18**	**9**	**108**	**252**	**2.50**	**19.3**	**40.9**	**86**
MEDIAN	**0.358**	**0.116**	**2.75**	**0.456**	**1.48**	**14**	**10**	**92**	**213**	**2.50**	**18.7**	**19.9**	**85**
STANDEV	**0.079**	**0.038**	**2.18**	**0.119**	**0.612**	**13**	**2**	**75**	**134**	**0.00**	**9.03**	**49.7**	**51**

*** Flow-weighted mean concentrations for Cl and TDS were difficult to estimate using FLUX due to large outliers from the one snowmelt sample, these estimates should be used with discretion.**

Table 23K. Flow-weighted mean pollutant concentrations (mg/L) and ranges as reported by the USGS (as cited in MPCA, 2000).

Pollutant		Monitoring Site		
		Yates (stabilized residential)	**Iverson (developing residential)**	**Sandburg (light industrial)**
TSS	Mean Range	133 (2- 758)	740 (17- 26,610)	337 (7- 4,388)
Pb	Mean Range	0.23 (0.015- 1.8)	0.02 (0.008- 0.31)	0.19 (0.003- 1.5)
Zn	Mean Range	0.198 (0.02- 2.2)	0.235 (0.028- 0.53)	0.185 (0.02- 0.81)
TKN	Mean Range	3.6 (0.6- 28.6)	1.2 (1.0- 29.2)	2.5 (0.4- 16.0)
TP	Mean Range	0.63 (0.10- 3.85)	0.62 (0.2- 13.1)	0.63 (0.07- 4.3)

Table 23L. MPRB Flow-weighted mean concentration comparison of previous years. Each year is the average flow-weighted mean concentration of all sites monitored that year.

	Flow-weighted mean concentrations				
Parameter	**MPRB 2001**	**MPRB 2002**	**MPRB 2003**	**MPRB 2004**	**MPRB 2005**
TP (mg/L)	0.470	0.337	0.474	0.332	0.354
TDP (mg/L)	0.112	0.095	0.114	0.121	0.123
TKN (mg/L)	2.21	1.60	2.10	1.94	3.48
NO3NO2 (mg/L)	0.398	0.423	0.496	0.382	0.448
NH3 (mg/L)	0.494	0.722	0.346	0.918	1.74
Cl (mg/L)	37.4	10.5	587	40	18
cBOD (mg/L)	12	8	16	20	9
TSS (mg/L)	116	83	116	70	108
TDS (mg/L)	306	85	725	130	252
Cd (µg/L)	0.532	0.518	2.11	2.80	2.50
Cu (µg/L)	15.1	30.8	23.4	15.3	19.3
Pb (µg/L)	23.3	17.1	22.0	14.3	40.9
Zn (µg/L)	180	76	107	76	86

Table 23M. Statistical summary for event mean concentrations by season in 2005. Statistics were calculated from all sites (6-9). STDEV= standard deviation, COV= coefficient of variance

2005 Season	Statistical Function	TP mg/L	TDP mg/L	TKN mg/L	NH3 mg/L	NO3NO2 mg/L	Cl mg/L	Field pH	Sp.Cond. µmhos/cm	F. Coli cfu/100mL	*E. Coli* mpn/100mL	cBOD mg/L	TSS mg/L	TDS mg/L	Hardness mg/L	Cd µg/L	Cu µg/L	Pb µg/L	Zn µg/L
	MEAN (geometric)	1.08	0.440	7.33	6.67	0.895	86.6	9.0	2570	271		22	211	1210	116	2.50	38.2	44.5	140
	MEAN (arithmetic)	1.15	0.532	7.52	6.90	0.936	99.0	9.0	3870	608		23	231	1710	123	2.50	43.4	56.2	200
	MAX	1.80	1.10	9.50	8.53	1.34	161	9.7	5690	1,300		34	391	2980	180	2.50	59.2	130	320
SNOWMELT	MIN	0.757	0.200	5.05	4.23	0.582	35.0	7.7	346	30		13	133	215	84.0	2.50	14.7	25.3	25
(February)	MEDIAN	1.01	0.417	7.78	7.42	0.914	100	9.4	4720	550		23	200	1820	104	2.50	49.8	34.8	226
	STDEV	0.464	0.392	1.89	1.90	0.317	51.4	0.94	2390	618		9	117	1140	50.6	0.000	20.4	49.5	135
	NUMBER	4	4	4	4	4	4	4	4	4		4	4	4	3	4	4	4	4
	COV	0.405	0.737	0.252	0.276	0.34	0.519	0.10	0.618	1.02		0.379	0.506	0.667	0.413	0.000	0.471	0.881	0.674
	MEAN (geometric)	0.352	0.122	2.57	1.62	0.336	2.64	8.5	101	3,730		10	86	70	37.7	2.50	16.5	19.3	89
	MEAN (arithmetic)	0.395	0.140	2.89	2.21	0.389	12.9	8.5	135	7,280		13	123	90	48.0	2.50	19.2	23.6	111
	MAX	0.591	0.262	5.22	5.19	0.785	48.6	9.5	226	16,000		24	286	152	100	2.50	38.0	42.8	185
SPRING	MIN	0.147	0.077	1.40	0.640	0.223	1.00	7.7	46.0	1,000		5	25	28	18.0	2.50	9.00	6.70	25
(April-May)	MEDIAN	0.421	0.111	2.48	1.51	0.274	1.00	8.3	133	6,050		11	90	89	38.0	2.50	15.0	22.5	117
	STDEV	0.185	0.087	1.67	2.06	0.268	23.8	0.92	102	7,470		9	114	64	38.0	0.000	13.0	15.2	66
	NUMBER	4	4	4	4	4	4	3	4	4		4	4	4	4	4	4	4	4
	COV	0.470	0.620	0.576	0.932	0.688	1.84	0.11	0.760	1.03		0.692	0.927	0.717	0.792	0.000	0.678	0.645	0.596
	MEAN (geometric)	0.279	0.095	1.84	1.32	0.357	2.10	7.7	86.0	16,400	31,000	8	52	84	39.7	2.50	16.2	20.0	57
	MEAN (arithmetic)	0.322	0.116	2.00	1.55	0.456	6.38	7.7	122	48,500	31,600	10	86	108	60.1	2.50	20.1	44.8	79
	MAX	0.704	0.426	3.63	3.62	1.12	71.8	9.8	671	344,000	39,800	26	326	476	364	2.50	44.1	301	217
SUMMER	MIN	0.086	0.031	0.769	0.250	0.054	1.00	6.4	26.6	50	26,200	0.5	5	32	12.0	2.50	2.50	2.50	25
(June-August)	MEDIAN	0.291	0.107	1.89	1.38	0.378	1.00	7.4	75.2	25,200	28,700	8	63	79	36.0	2.50	17.8	16.0	64
	STDEV	0.173	0.089	0.795	0.86	0.296	14.8	0.95	140	77,100	7,240	6	83	100	74.6	0.000	12.3	68.4	61
	NUMBER	24	23	24	24	24	24	23	24	26	3	23	24	24	24	24	24	24	24
	COV	0.537	0.767	0.398	0.552	0.650	2.32	0.12	1.14	1.59	0.229	0.655	0.971	0.928	1.24	0.000	0.611	1.53	0.770
	MEAN (geometric)	0.222	0.053	2.45	0.777	0.459	2.68	7.9	62.6	6,330		4	56	47	34.0	2.50	14.8	16.6	43
	MEAN (arithmetic)	0.247	0.057	4.71	0.943	0.741	10.2	7.9	87.2	33,900		5	90	83	46.0	2.50	16.0	28.0	52
	MAX	0.421	0.079	13.8	2.19	2.82	43.2	8.8	226	210,000		11	157	220	112	2.50	25.5	123	94
FALL	MIN	0.101	0.028	0.250	0.265	0.083	1.00	6.9	16.1	200		1	8	5	12.0	2.50	7.70	7.60	25
(Sept-Oct)	MEDIAN	0.223	0.066	2.62	0.892	0.505	1.00	8.0	48.0	8,250		4	118	43	24.0	2.50	15.0	13.2	25
	STDEV	0.117	0.020	5.14	0.640	0.929	16.7	0.77	75.5	66,300		4	68	79	37.8	0.000	6.41	42.0	33
	NUMBER	7	7	7	7	7	7	7	7	10		7	7	7	7	7	7	7	7
	COV	0.476	0.359	1.09	0.678	1.25	1.64	0.10	0.865	1.96		0.726	0.754	0.958	0.821	0.000	0.401	1.50	0.648

24A LOGAN POND BMP MONITORING

BACKGROUND

Best management practices (BMPs) include procedures and structures designed to help reduce water pollution. In 2005, the MPRB monitored one of the City of Minneapolis' stormwater ponds located in northern Minneapolis, Figure 24A. The pond was designed for flood mitigation purposes and to help reduce pollutants. The stormwater pond is referred to as Logan Pond which is located at 29th Ave. N. and Logan Ave. N. The drainage area to the pond is 165 acres consisting of primarily residential land use. Logan Pond has one main inlet, two small leaders and one outlet. The leaders drain the adjacent residential alleys each one city block long. The pond was designed to remove greater than 90% suspended solids. The high water level was designed to be at an elevation of 891.00 ft while the normal water level was designed to be at 884.50 ft. The bottom of the pond was designed to have an elevation of 879.00 ft leading to a high water depth of 12.00 ft and a normal depth of 5.50 ft.

Figure 24A. Map of Logan Pond located in Minneapolis, MN.

METHODS

The MPRB monitored Logan Pond located at 29th Ave. N. and Logan Ave. N. from June to October 2005. Samples were collected at the inlet, outlet, and two leaders located in the alleys

on the east and west sides of the pond. Equipment included area/velocity pressure transducers with ISCO 4150 dataloggers at the inlet, outlet, and east alley, a level/pressure transducer with ISCO 4120 datalogger at the west alley, and two ISCO 3700 samplers at the inlet and outlet. The outlet and alleys were installed on 6/30/05 and the inlet was installed on 7/7/05. The inlet and outlet dataloggers were flow paced and adjusted accordingly to collect samples over the entire hydrograph. Samples collected from the east and west alleys were all grab samples.

The chemical parameters analyzed were total phosphorus (TP), total dissolved phosphorus (TDP), total Kjeldahl nitrogen (TKN), nitrate+nitrite (NO3NO2), ammonia (NH3), chloride (Cl), hardness, conductivity, carbonaceous biological oxygen demand (cBOD), total suspended solids (TSS), total dissolved solids (TDS), cadmium (Cd), copper (Cu), lead (Pb), and zinc (Zn). Fecal coliform and *E. coli* grab samples were collected periodically throughout the sampling season. The pH was measured in the field. Depending on the time the samples were collected, certain parameters were not analyzed due to expired holding times. Holding times for all parameters are listed in Section 23, Table 23E.

In the early months of 2006, a sedimentation analysis of the pond will be started. During February or March, MRPB personnel will use a GPS unit and depth finder to assess the sedimentation that has occurred in the pond. This will be an initial baseline depth reading to determine how fast the pond is filling with sediment in the future. MRPB staff will conduct these measurements when the pond is sufficiently frozen and safe. An established grid will be followed to accurately identify the depth of ice at each location. In future years, MRPB personnel can return to the same grid system to measure the depth changes. A tape down measurement will be made from a fixed point at the pond to the ice surface which can later be surveyed for exact elevations.

RESULTS & DISCUSSION

Nine storm events were sampled at the inlet, ten at the outlet, and six at each of the alleys. The dates and lab results are presented in Table 24A.

Statistics were calculated and are presented in Table 24B. Lab values reported below detection were divided in half for statistical calculations. *E. coli* statistics for individual sites were not calculated because there was only a single sample. Mean outlet values in Table 24B show water quality improvement for most parameters. Adding all three inlet means together showed the only parameter with increased output was chloride. Winter salt use may be building up high levels of chloride that flush out during the year. This may explain why the outlet has a higher value than the inlets.

When comparing the average values of the east and west alleys it seems most of the parameters were comparable except for fecal coliform and lead. Fecal coliform and lead were more than double for the east alley. Trash cans are located in the alleys which could contribute to high pollutant concentrations. Trash cans were often seen overflowing into the alley with piles of garbage on the ground.

Total volumes recorded at each monitored location are given in Table 24C. The total inlet

volume recorded for the sampling period 7/7/05- 10/31/05 was 1,800,000 cf. The total outlet volume recorded was 1,040,000 cf. Due to pond backups, the recorded volumes for the alleys are most likely unreliable but are used to give a rough estimate of total pollutants removed in Table 24D. All parameters except chloride showed some water quality improvements. Fecal coliform showed the highest improvement with 96% removal while TDS showed the least amount captured with 12% removal. The unusual amount of rainfall in 2005 may not have left sufficient settling time for many parameters.

Resuspension of sediments due to large storms is a possible reason for low removal efficiency. Sediment accumulation can also cause resuspension by decreasing the depth of the pond which can reduce its effectiveness. The Minnesota Stormwater Steering Committee recommends a sediment forebay with a depth of 4 to 6 ft for each inlet provided there is no other upstream BMP. Shallower depths could result in resuspension of sediments (MSSC, 2005). Other possible reasons for resuspension include wind, lack of aquatic vegetation that can help stabilize sediments, or fish activity.

Another possible reason for lower removal efficiency is that the currently available sampling equipment has limited capability. This may lead to an under representation of inlet concentrations. The sampler intake strainer does not allow the uptake of large debris such as leaves, tree seeds, paper, cigarettes, and small trash. This debris may decompose into small enough particles to be taken up by the intake strainer at the outlet during future storm events which were not sampled at the inlet. The stormwater sampling equipment and protocols used are current state of the art and comparable to others in the stormwater profession.

Table 24A. Logan Pond sampled event data for 2005.

Date	Time	Site Location	Sample Type	TP mg/L	TDP mg/L	TKN mg/L	NO3NO2 mg/L	NH3 mg/L	Cl mg/L	Hardness mg/L	Sp.Cond. µmhos/cm	F. Coli cfu/100mL	E. Coli mpn/100mL	Field pH	cBOD mg/L	TSS mg/L	TDS mg/L	Cd µg/L	Cu µg/L	Pb µg/L	Zn µg/L
7/23/2005	12:11	Logan - Inlet	composite	0.538	n/c	2.26	0.547	1.43	2.41	n/c	67.6	n/c		n/c	n/c	91	65	<5.00	21.3	35.7	91
7/25/2005	18:55	Logan - Inlet	composite	0.475	0.157	1.94	0.222	1.46	2.41	24.0	53.2	n/c		6.6	10.6	139	48	<5.00	21.6	45.9	97
8/16/2005	23:33	Logan - Inlet	composite	0.694	0.200	3.51	0.872	1.45	3.38	32.0	76.0	1,010,000		6.9	11.8	145	67	<5.00	29.7	41.2	90
8/26/2005	6:50	Logan - Inlet	composite	1.12	0.255	3.34	0.496	0.809	<2.00	28.0	52.5	n/c		7.7	8.16	288	51	<5.00	21.5	95.0	165
8/26/2005	9:33	Logan - Inlet	grab									32,000	39,900								
9/3/2005	20:25	Logan - Inlet	composite	0.483	n/c	2.02	0.639	0.720	<2.00	32.0	71.6	n/c		n/c	n/c	130	72	<5.00	24.8	41.9	58
9/13/2005	2:25	Logan - Inlet	composite	0.476	0.145	1.82	0.231	0.771	3.38	34.0	68.2	64,000		7.1	6.76	108	62	<5.00	16.6	41.9	<50
9/19/2005	8:11	Logan - Inlet	composite	0.364	0.184	1.75	0.508	0.618	2.38	24.0	55.0	n/c		n/c	10.8	55	39	<5.00	15.7	19.6	<50
9/21/2005	20:02	Logan - Inlet	composite	0.751	0.158	3.50	0.566	0.823	<2.00	30.0	62.1	n/c		7.7	12.7	207	49	<5.00	28.9	78.6	102
9/25/2005	6:59	Logan - Inlet	composite	0.273	n/c	1.58	0.246	<0.500	<2.00	n/c	58.4	n/c		n/c	n/c	44	47	<5.00	13.7	17.9	<50
9/28/2005	9:30	Logan - Inlet	grab									137,000									
8/8/2005	8:50	Logan - East	grab	0.673	0.470	3.05	1.17	2.16	2.56	48.0	119	1,500		8.2	18.7	29	137	<5.00	30.0	28.0	<50
8/18/2005	9:10	Logan - East	grab	0.425	0.290	1.36	0.547	0.603	2.38	58.0	9.00	86,600		n/c	11.2	16	145	<5.00	25.6	7.45	<50
8/19/2005	11:20	Logan - East	grab	0.708	0.241	3.67	1.52	1.65	3.12	48.0	131	37,000		7.5	21.0	80	109	<5.00	40.2	27.6	54
8/26/2005	9:00	Logan - East	grab	0.208	0.126	0.760	0.180	0.330	<2.00	24.0	50.7	1,200	1,460	7.5	2.09	23	48	<5.00	<5.00	17.9	28
9/7/2005	9:05	Logan - East	grab	0.342	0.168	1.65	1.28	0.526	<2.00	44.0	131	1,000		7.6	10.5	76	125	<5.00	20.8	37.4	<50
9/28/2005	9:05	Logan - East	grab	0.433	0.176	1.36	0.275	0.516	<2.00	40.0	85.6	128,000		n/c	8.40	65	72	<5.00	20.3	51.3	<50
8/18/2005	8:45	Logan - West	grab	0.719	0.395	2.78	0.502	1.06	3.38	58.0	184	27,600		n/c	10.1	86	140	<5.00	29.8	11.2	<50
8/19/2005	11:10	Logan - West	grab	0.443	0.308	2.31	1.17	1.05	<2.00	32.0	108	15,800		7.6	11.9	16	104	<5.00	19.4	5.70	<50
8/26/2005	9:10	Logan - West	grab	0.413	0.218	1.47	0.654	0.672	2.87	44.0	122	2,000	4,000	8.9	4.24	69	91	<5.00	17.1	18.5	50
9/7/2005	9:15	Logan - West	grab	0.312	0.202	1.88	1.06	0.853	2.14	46.0	123	1,200		7.6	7.70	44	116	<5.00	18.4	9.50	<50
9/8/2005	9:00	Logan - West	grab	0.286	0.205	1.08	0.697	0.455	2.14	<1.00	86.4	950		7.3	3.74	23	121	<5.00	16.4	6.10	<50
9/28/2005	9:10	Logan - West	grab	0.332	0.168	1.16	0.336	0.556	<2.00	44.0	93.5	43,000		n/c	11.2	31	77	<5.00	13.8	14.5	<50
7/23/2005	13:53	Logan - Outlet	composite	0.627	n/c	3.10	0.087	2.63	84.2	n/c	390	n/c		n/c	n/c	35	228	<5.00	8.75	13.3	<50
7/23/2005	10:15	Logan - Outlet	grab									1,000									
7/25/2005	18:46	Logan - Outlet	composite	0.726	0.230	2.84	0.167	2.73	35.5	36.0	168	n/c		n/c	9.45	173	120	<5.00	24.5	61.6	102
7/25/2005	11:35	Logan - Outlet	grab									16,000		7.0							
8/17/2005	10:30	Logan - Outlet	grab	0.497	0.094	2.66	0.152	0.775	55.4	50.0	264	86,100		7.6	8.35	31	163	<5.00	<5.00	6.30	<50
8/19/2005	9:20	Logan - Outlet	grab	0.358	0.133	1.68	0.062	0.832	55.4	68.0	302	<1		7.0	5.41	22	194	<5.00	9.70	8.60	<50
8/26/2005	7:25	Logan - Outlet	composite	0.538	0.218	2.14	0.327	0.912	29.9	32.0	174	n/c		n/c	6.83	108	117	<5.00	14.1	37.7	44
8/26/2005	8:45	Logan - Outlet	grab									19,000	20,100	6.9							
9/4/2005	6:56	Logan - Outlet	composite	0.505	n/c	2.31	0.362	0.915	20.8	40.0	79.3	n/c		n/c	n/c	92	95	<5.00	21.3	39.6	<50
9/13/2005	5:37	Logan - Outlet	composite	0.494	0.142	1.96	0.209	0.884	5.88	36.0	81.3	30,000		7.2	3.96	104	72	<5.00	20.2	44.0	<50
9/19/2005	7:25	Logan - Outlet	composite	0.515	0.187	2.54	0.453	<0.500	4.88	30.0	77.0	n/c		n/c	13.2	133	68	<5.00	25.3	28.3	50
9/21/2005	22:15	Logan - Outlet	composite	0.661	0.142	3.20	0.330	0.853	4.94	36.0	80.3	n/c		9.0	8.75	208	61	<5.00	30.4	86.0	82
9/25/2005	9:17	Logan - Outlet	composite	0.356	n/c	2.00	0.180	0.792	5.42	n/c	89.3	n/c		n/c	n/c	46	66	<5.00	19.2	16.3	<50
9/28/2005	9:15	Logan - Outlet	grab									5,000									

Notes: n/c = not collected due to limited sample volume or expired holding time.

Table 24B. Event mean concentration statistics for Logan Pond in 2005.

Site Location	Statistical Function	TP mg/L	TDP mg/L	TKN mg/L	NO3NO2 mg/L	NH3 mg/L	Cl mg/L	Hardness mg/L	Sp.Cond. µmhos/cm	F. Coli cfu/100mL	Field pH	cBOD mg/L	TSS mg/L	TDS mg/L	Cd µg/L	Cu µg/L	Pb µg/L	Zn µg/L
Logan Inlet	MEAN	0.575	0.183	2.41	0.481	0.925	2.00	29.1	62.7	311,000	7.2	10	134	55	2.50	21.5	46.4	100
Logan Inlet	MEDIAN	0.483	0.171	2.02	0.508	0.809	2.38	30.0	62.1	100,000	7.1	11	130	51	2.50	21.5	41.9	90
Logan Inlet	STDEV	0.253	0.041	0.801	0.217	0.426	1.02	3.98	8.55	469,000	0.5	2	76	11	0.00	5.61	25.3	47
Logan Inlet	MAXIMUM	1.12	0.255	3.51	0.872	1.46	3.38	34.0	76.0	1,010,000	7.7	13	288	72	2.50	29.7	95.0	165
Logan Inlet	MINIMUM	0.273	0.145	1.58	0.222	0.250	1.00	24.0	52.4	32,000	6.6	7	44	39	2.50	13.7	17.9	25
Logan Inlet	NUMBER	9	6	9	9	9	9	7	9	4	5	6	9	9	9	9	9	9
Logan East	MEAN	0.465	0.245	1.97	0.829	0.965	1.84	43.7	87.7	42,600	7.7	12	48	106	2.50	23.2	28.3	30
Logan East	MEDIAN	0.429	0.209	1.51	0.858	0.564	1.69	46.0	102	19,200	7.6	11	47	117	2.50	23.2	27.8	25
Logan East	STDEV	0.193	0.125	1.13	0.567	0.753	0.956	11.3	49.6	53,600	0.3	7	29	38	0.00	12.5	15.2	12
Logan East	MAXIMUM	0.708	0.470	3.67	1.52	2.16	3.12	58.0	131	128,000	8.2	21	80	145	2.50	40.2	51.3	54
Logan East	MINIMUM	0.208	0.126	0.760	0.180	0.330	1.00	24.0	9.00	1,000	7.5	2	16	48	2.50	2.50	7.45	25
Logan East	NUMBER	6	6	6	6	6	6	6	6	6	4	6	6	6	6	6	6	6
Logan West	MEAN	0.418	0.249	1.78	0.736	0.774	2.09	37.4	119	15,100	7.9	8	45	108	2.50	19.1	10.9	29
Logan West	MEDIAN	0.373	0.212	1.68	0.676	0.762	2.14	44.0	115	8,900	7.6	9	37	110	2.50	17.8	10.4	25
Logan West	STDEV	0.160	0.085	0.671	0.321	0.254	0.965	19.9	34.9	17,300	0.7	4	28	22	0.00	5.57	4.96	10
Logan West	MAXIMUM	0.719	0.395	2.78	1.16	1.06	3.38	58.0	184	43,000	8.9	12	86	140	2.50	29.8	18.5	50
Logan West	MINIMUM	0.286	0.168	1.08	0.336	0.455	1.00	0.5	86.4	950	7.3	4	16	77	2.50	13.8	5.70	25
Logan West	NUMBER	6	6	6	6	6	6	6	6	6	4	6	6	6	6	6	6	6
Logan Outlet	MEAN	0.528	0.164	2.44	0.233	1.16	30.2	41.0	171	22,400	7.5	8	95	118	2.50	17.6	34.2	43
Logan Outlet	MEDIAN	0.510	0.142	2.43	0.195	0.869	25.3	36.0	129	16,000	7.1	8	98	106	2.50	19.7	33.0	25
Logan Outlet	STDEV	0.119	0.049	0.510	0.128	0.825	27.5	12.5	113	30,100	0.8	3	63	59	0.00	8.66	25.4	28
Logan Outlet	MAXIMUM	0.726	0.230	3.20	0.453	2.73	84.2	68.0	390	86,100	9.0	13	208	228	2.50	30.4	86.0	102
Logan Outlet	MINIMUM	0.356	0.094	1.68	0.062	0.250	4.88	30.0	77.0	0.5	6.9	4	22	61	2.50	2.50	6.30	25
Logan Outlet	NUMBER	10	7	10	10	10	10	8	10	7	6	7	10	10	10	10	10	10

Table 24C. Volumes recorded for Logan Pond, 7/7/05 - 10/31/2005.

Location	Volume Recorded (cubic feet)	Percent of Total Input
Logan Inlet	1,800,000	83%
Logan East	37,800	2%
Logan West	320,000	15%
Logan Outlet	1,040,000	48%

Table 24D. Estimated pollutant loads for Logan Pond, 7/7/05 - 10/31/2005.

	TP kg	TDP kg	TKN kg	NO3NO2 kg	NH3 kg	Cl kg	F. coli cfu	cBOD kg	TSS kg	TDS kg	Cd kg	Cu kg	Pb kg	Zn kg
Logan Inlet	29.3	9.33	123	24.5	47.1	102	1.58E+14	516	6,830	2,820	127	1,100	2,360	5,090
Logan East	0.602	0.318	2.56	1.07	1.25	2.39	5.52E+11	16	62.7	137	3.24	30.1	36.6	39.3
Logan West	3.78	2.26	16.1	6.67	7.01	18.9	1.37E+12	74	405	980	22.6	173	98.9	263
Logan Outlet	15.5	4.82	71.9	6.85	34.0	890	6.59E+12	235	2,800	3,480	73.6	518	1,010	1,260
Total Removed:	**18.2**	**7.08**	**69.7**	**25.4**	**21.4**	**-767**	**1.54E+14**	**371**	**4,500**	**459**	**79.7**	**783**	**1,490**	**4,140**
Percent Removed:	**54%**	**60%**	**49%**	**79%**	**39%**	**-624%**	**96%**	**61%**	**62%**	**12%**	**52%**	**60%**	**60%**	**77%**

Bacteria grab samples collected during the 2005 sampling season are presented in Table 24E. Most fecal coliform samples were comparable to samples collected from the NPDES stormwater monitoring (Table 23F, Section 23). One *E. coli* sample was collected from the inlet and outlet on 8/26/05.

Table 24E. Bacteria grab samples from Logan Pond in 2005.

Date	Time	Site Location	F. Coli cfu/100mL	*E. Coli* mpn/100mL
7/23/2005	10:15	Logan- Outlet Grab	1000	
7/25/2005	11:35	Logan- Outlet grab	16,000	
8/26/2005	8:45	Logan- Outlet grab	19,000	20,100
8/26/2005	9:33	Logan- Inlet Grab	32,000	39,900
9/28/2005	9:15	Logan- Outlet grab	5,000	
9/28/2005	9:30	Logan- Inlet Grab	137,000	

Several large rain events occurred in 2005 resulting in pipe surcharges at Logan Pond. Surcharged events are listed in Table 24F.

Table 24F. Surcharged events at Logan Pond in 2005. There were no recorded surcharges for the inlet. Daily rainfall was recorded from the MPRB rain gage located at 3800 Bryant Ave. S., Minneapolis.

Date	Daily Rainfall (in.)	East Alley	West Alley	Outlet
7/25/05	1.78	X		
8/26/05	2.00	X		
9/4/05	0.77	X		
9/21/05	0.60	X		
10/4/05	4.31	X	X	X
10/5/05	0.50	X		

Negative velocities were recorded at the inlet, outlet and east alley. It was unknown if negative velocities occurred at the west alley because an area/velocity probe was not used at that location. The invert of the west alley pipe was designed to be 2.75 ft above the normal water level which could have been sufficient enough to prevent backflow from the pond. Negative velocities were recorded for the inlet on 9/5/05, 9/6/05 and 9/12/05 (sampled). Negative velocities were recorded at the outlet on 6/29/05, 7/20/05, 7/23/05 (sampled), 7/25/05 (sampled), 8/4/05 and 8/8/05. The outlet probe was not recording velocities after 8/8/05 but was recording level accurately. Therefore, the outlet datalogger was reprogrammed to use Manning's formula to calculate flow rates on 8/22/05. Negative velocities were recorded at the east alley on 7/3/05, 7/20/05, 7/23/05, 7/24/05, 7/25/05, 8/4/05, 8/26/05, 9/3/05, 9/4/05, 9/6/05, 9/19/05, 9/22/05, 9/24/05, 9/25/05, 9/28/05, 10/4/05, and 10/5/05. The east alley frequently had standing water in the pipe. The invert of the pipe was designed to be 0.3 ft above the natural water level which could have made it vulnerable to standing water during a

wet season. It was difficult to obtain accurate velocity and discharge readings for the east alley due to these issues. Negative velocities at the inlet and east alley are most likely attributed to backups from the pond. Many rain events were unusually large in 2005 resulting in greater than normal flow volumes. It is uncertain why the outlet recorded negative velocities. The pipe could have backed up from further downstream. After 8/8/05, velocities were not recorded for the outlet due to equipment failure, and it is unknown if further negative velocities occurred.

There is a grate at the outlet to prevent large debris from entering the sewer system. The pond outlet grate seems to clog often with debris and trash. When the outlet is clogged, the pond increases in depth which limits the volume storage capacity. Upstream areas could then become more susceptible to flooding.

Due to precipitation variation between years, it is difficult to draw conclusions about the monitoring results based on the limited events sampled. Evaluating the pollutant load estimates, it seems Logan Pond offered some water quality benefits in 2005. It is difficult to assess whether the pond can reach its peak performance of 90 percent suspended solids removal due to the unusual amounts of rain and pond backups. Logan Pond provided over 50 percent removal of many pollutants including phosphorus, TSS, and metals which would have otherwise entered downstream water bodies. Further monitoring will help better determine how effective Logan Pond is at improving water quality.

Additional monitoring in the future can help better characterize pond performance efficiency. Sediment depths will be measured and mapped during winter months to identify how fast the pond accumulated sediment. Other recommendations for future monitoring and design efficiency include:

- Increase litter pickup to reduce chance of outlet clogging and reduce the risk of alley backups
- Measure depth of pond sediment to ensure proper function and decrease risk of sediment resuspension
- Use an area/velocity probe for the west alley
- Add a staff gage to record depth of the pond in relation to standing water in pipes
- Collect sediment cores prior to dredging to characterize material and sources
- General design considerations to aid in sediment pond efficiency:
    - Installation of a forebay at the inlets to reduce bedload
    - Identify the possible use of pretreatment devices upstream (i.e. grit chambers or Continuous Deflective Separation units)

24B PERMEABLE PAVER BMP MONITORING

BACKGROUND

Best management practices (BMPs) include procedures and structures designed to help reduce water pollution. Permeable pavers are a BMP designed to increase infiltration. In 2005, the MPRB monitored the permeable paver lot located at the City of Minneapolis' Animal Shelter in northern Minneapolis. The Animal Shelter is located at 212 17th Avenue North, Minneapolis. Permeable pavers were used as part of an innovative building design project to help reduce flow volumes. The project was designed to reduce stormwater and pollutant runoff by more than 50 percent.

The drainage area was estimated to be 5,777 square feet which included a section of the Animal Shelter roof and the section of the paver lot that drained to the monitored manhole. The diameter of the stormwater pipe was 12 inches. The inlet manhole cover was an open drain.

The storm drain is located in a commercial/industrial land use area and is approximately 1 block east of Interstate 94 and 3 blocks south of Broadway Avenue. The watershed drains to the Mississippi River.

METHODS

The MPRB monitored a storm drain located at Minneapolis' Animal Shelter from June to October 2005. One of two storm drains was monitored at the permeable paver lot. The storm drain monitored was located within the gated parking lot of the Animal Shelter. Equipment included a level/pressure transducer with ISCO 4120 datalogger and was installed on 5/27/05. Data were downloaded approximately every two weeks.

A tipping bucket rain gage was installed on the Animal Shelter building on 8/31/05 and removed on 11/2/05. The rain gage was used to calculate theoretical flow data. Rain data from the Bassett's Creek Watershed Outlet Monitoring Program (WOMP) station was used prior to installation and is located near the Minneapolis Vehicle Impound Lot.

The total drainage area of the storm drain was measured in the field using a tape measure. Theoretical flow volumes were calculated by multiplying the total drainage area by the total amount of daily rainfall. Measured flow volumes were recorded using the datalogger.

RESULTS & DISCUSSION

Storm data are presented in Table 24G including the dates of storm events, rainfall, intensity, peak levels, flow volumes, and percent infiltrated. A total of 28 storm events were recorded. A storm event is defined as having 0.10 inches of rainfall or greater. Some events occurred with no record of rainfall and are not included in Table 24G. This may be due to the washing of trucks at the shelter which can overflow to the drain pipe.

Several large rain events occurred in 2005 resulting in pipe surcharges. Six total events surcharged resulting in inaccurate flow recordings, Table 24G. Recorded peak levels for these events were greater than 18 inches. Overflow problems generally occurred during high flow, high intensity events.

Table 24G. Storm event data for the permeable paver lot in 2005. cf= cubic feet

Date	Rainfall (in)	Intensity (in/hr)	Peak Level (in)	Theoretical Flow Volume (cf)	Measured Flow Volume (cf)	Percent Infiltrated %	notes:
6/4/05	0.23	0.05	0.76	111	120	-8	
6/8/05	0.82	0.12	2.04	395	385	3	
6/10/05	0.55	0.06	5.80	265	943	-256	
6/13/05	0.47	0.03	1.25	226	310	-37	
6/20/05	1.06	0.85	28.64	510	5,032	-887	SURCHARGED
6/27/05	1.43	0.09	2.50	688	744	-8	
6/29/05	0.19	0.02	0.86	91	17	81	
7/3/05	0.40	0.27	1.98	193	181	6	
7/20/05	0.47	0.24	1.73	226	101	55	
7/23/05	0.63	0.28	18.83	303	1,448	-378	SURCHARGED
7/25/05	1.14	0.35	30.64	549	5,558	-912	SURCHARGED
8/4/05	0.18	0.05	0.13	87	11	87	
8/8/05	0.22	0.08	0.26	106	5	95	
8/11/05	0.12	0.07	0.48	58	18	69	
8/16/05	0.13	0.26	2.17	63	121	-92	
8/18/05	0.14	0.02	0.06	67	2	97	
8/19/05	0.26	1.04	1.16	125	20	84	
8/26/05	1.83	0.61	31.25	881	5,114	-480	SURCHARGED
9/3/05	0.77	0.14	1.38	371	250	33	
9/4/05	2.17	0.34	1.54	1,045	678	35	
9/5-9/6/05	0.77	0.17	2.03	371	478	-29	
9/12-9/13/05	0.77	0.04	2.09	371	537	-45	
9/19/05	0.51	0.34	2.07	246	375	-52	
9/21/05	2.09	0.52	24.57	1,006	4,525	-350	SURCHARGED
9/24-9/25/05	1.04	0.05	1.00	501	406	19	
9/28/05	0.27	0.07	0.76	130	366	-182	
10/4-10/5/05	5.71	0.21	28.34	2,749	21,218	-672	SURCHARGED
10/12/05	0.22	0.26	0.20	106	33	69	

A total of 13 events showed positive treatment percentages. A total of 9 events had negative treatment percentages (not including surcharged events). Many events showed larger volumes than possible for the calculated drainage area. This generally occurred for large rain events. The drainage area could be larger than originally estimated. The known contributing drainage area was measured by MPRB staff, but there is an adjacent building west of the paver lot which has rain leaders pointed toward the lot. The leaders are approximately 25 feet west with a buffer of tall vegetation. It is currently unknown if these leaders contribute significantly to the paver lot. Also, the pipe may be backing up from downstream. Trash is often found within the

pipe which may influence level readings. Further monitoring is necessary to investigate these possibilities. An area/velocity meter would be useful in determining pipe backups. Careful monitoring of the adjacent building's drainage is necessary to determine if it is contributing to the total flow of the pipe.

2005 ANNUAL POLLUTANT LOADINGS BY RECEIVING WATER

2005 ANNUAL POLLUTANT LOADINGS BY RECEIVING WATER - KILOGRAMS PER YEAR (estimated using FLUX)

WATERSHED	RUNOFF	AREA	BOD	TSS	TDS	TKN	NH3-N	NO2-NO3	TP	TDP	Cd	Cu	Pb	Zn
	COEFF.		mg\l	mg\l	mg\l	mg\l	mg\l	mg\l	mg\l	mg\l	mg\l	mg\l	mg\l	mg\l
Mean Flow Weighted Mean Concentration - all 2005 sites			9.00	108	252	3.48	1.740	0.448	0.354	0.123	0.002500	0.019	0.041	0.086
Mississippi River (Minneapolis)	0.46	18077	218,815.1	2,625,780.8	6,126,821.8	84,608.5	42,304.2	10,892.1	8,606.7	2,990.5	60.8	469.2	994.4	2,090.9
Shingle Creek	0.44	1365	15,868.6	190,423.0	772,725.8	6,135.9	3,067.9	789.9	624.2	216.9	4.4	34.0	72.1	151.6
Ryan Lake (Minneapolis)	0.45	49	588.9	7,067.2	28,678.4	227.7	113.9	29.3	23.2	8.0	0.2	1.3	2.7	5.6
Bassett Creek	0.44	2293	26,521.9	318,263.2	1,291,493.7	10,255.1	5,127.6	1,320.2	1,043.2	362.5	7.4	56.9	120.5	253.4
New Bassett Creek Tunnel	0.45	219	2,583.9	31,006.6	125,823.2	999.1	499.6	128.6	101.6	35.3	0.7	5.5	11.7	24.7
Brownie Lake (Minneapolis)	0.45	34	398.9	4,787.2	19,426.4	154.3	77.1	19.9	15.7	5.5	0.1	0.9	1.8	3.8
Cedar Lake (Minneapolis)	0.38	224	2,212.2	26,545.8	107,721.3	855.4	427.7	110.1	87.0	30.2	0.6	4.7	10.1	21.1
Lake of the Isles	0.42	760	8,418.4	101,021.0	409,937.2	3,255.1	1,627.6	419.0	331.1	115.1	2.3	18.1	38.3	80.4
Lake Calhoun (Minneapolis)	0.46	1249	15,017.9	180,215.4	731,303.6	5,806.9	2,903.5	747.6	590.7	205.2	4.2	32.2	68.2	143.5
Cemetary Lake	0.60	205	3,201.1	38,413.0	155,877.6	1,237.8	618.9	159.3	125.9	43.7	0.9	6.9	14.5	30.6
Sanctuary Pond	0.60	68	1,066.4	12,796.7	51,928.4	412.3	206.2	53.1	41.9	14.6	0.3	2.3	4.8	10.2
Lake Harriet	0.46	863	10,508.3	126,099.3	511,703.6	4,063.2	2,031.6	523.1	413.3	143.6	2.9	22.5	47.8	100.4
Hart Lake (Minneapolis)	0.55	3	41.5	497.9	2,020.6	16.0	8.0	2.1	1.6	0.6	0.0	0.1	0.2	0.4
Silver Lake (Minneapolis)	0.44	28	324.9	3,898.7	15,820.9	125.6	62.8	16.2	12.8	4.4	0.1	0.7	1.5	3.1
Crystal Lake (Minneapolis)	0.45	469	5,553.5	66,641.9	270,428.8	2,147.3	1,073.7	276.4	218.4	75.9	1.5	11.9	25.2	53.1
Legion Lake (Minneapolis)	0.45	49	584.4	7,012.9	28,458.1	226.0	113.0	29.1	23.0	8.0	0.2	1.3	2.7	5.6
Richfield Lake (Minneapolis)	0.32	715	6,013.8	72,165.4	292,843.0	2,325.3	1,162.7	299.4	236.5	82.2	1.7	12.9	27.3	57.5
Minnehaha Creek	0.44	3213	37,266.0	447,191.6	1,814,677.8	14,409.5	7,204.8	1,855.0	1,465.8	509.3	10.4	79.9	169.4	356.1
Diamond Lake	0.47	685	8,389.8	100,677.7	408,544.4	3,244.1	1,622.0	417.6	330.0	114.7	2.3	18.0	38.1	80.2
Lake Nokomis	0.40	620	6,543.9	78,526.3	318,655.0	2,530.3	1,265.1	325.7	257.4	89.4	1.8	14.0	29.7	62.5
Taft Lake	0.37	100	962.3	11,547.3	46,858.4	372.1	186.0	47.9	37.8	13.2	0.3	2.1	4.4	9.2
Mother Lake (Minneapolis)	0.48	49	620.6	7,447.5	30,221.7	240.0	120.0	30.9	24.4	8.5	0.2	1.3	2.8	5.9
Unnamed Wetland W of Mother Lake	0.41	41	438.3	5,260.1	21,345.2	169.5	84.7	21.8	17.2	6.0	0.1	0.9	2.0	4.2
Lake Hiawatha	0.46	1008	12,168.3	146,019.4	592,538.2	4,705.1	2,352.5	605.7	478.6	166.3	3.4	26.1	55.3	116.3
Birch Pond	0.10	31	81.9	983.1	3,989.5	31.7	15.8	4.1	3.2	1.1	0.0	0.2	0.4	0.8
Powderhorn Lake	0.46	286	3,460.9	41,531.4	168,532.0	1,338.2	669.1	172.3	136.1	47.3	1.0	7.4	15.7	33.1
Grass Lake	0.46	386	4,644.9	55,739.4	226,187.1	1,796.0	898.0	231.2	182.7	63.5	1.3	10.0	21.1	44.4
Unnamed Wetland on Hwy 62	0.47	17	209.3	2,511.5	10,191.7	80.9	40.5	10.4	8.2	2.9	0.1	0.4	1.0	2.0
Unnamed Wetland on Ewing Ave S	0.47	22	266.9	3,202.9	12,997.2	103.2	51.6	13.3	10.5	3.6	0.1	0.6	1.2	2.6
ANNUAL TOTAL KILOGRAMS - Minneapolis		33,127.7	392,772.8	4,713,274.2	14,597,750.5	151,872.2	75,936.1	19,551.4	15,449.1	5,367.9	109.1	842.3	1,784.9	3,753.2

National Weather Service, Annual Precipitation = 33.41 inches 0.849 meters

ESTIMATES OF ANNUAL AND SEASONAL POLLUTANT LOADS

Statistics for event mean concentrations were calculated using Microsoft Excel spreadsheets. FLUX and P8 were used to calculate flow-weighted mean concentrations and snowmelt runoffs respectively.

All flow weighted mean concentrations were calculated using the model FLUX. FLUX calculates total mass discharge and associated error statistics based on six different calculation methods. Calculation methods 1-Direct Mean Loading and 5-Regression, Second-Order were ignored because they are inappropriate for storm sewer applications where the daily flow file contains a significant number of zero flows (Bruce Wilson, personal communication, 2001). Sample concentrations and associated daily average flows were used as input for these calculations. In order to achieve the most accurate and precise results, the data was often stratified by flow or by season.

The model P8 was used to calculate daily flows for the snowmelt events during January through April. Daily temperature and hourly precipitation files obtained from the National Oceanic and Atmospheric Administration (NOAA) National Data Center (NNDC) were used as input for P8.

A description of FLUX as described in the FLUX manual (Walker 1996):

> "FLUX is an interactive program designed for use in estimating the loadings of nutrients or other water quality components passing a tributary sampling station over a given period of time. These estimates can be used in formulating reservoir nutrient balances over annual or seasonal averaging periods appropriate for application of empirical eutrophication models.
>
> Using six calculation techniques, FLUX maps the flow/concentration relationship developed from the sample record onto the entire flow record to calculate total mass discharge and associated error statistics. In many cases, stratifying the data increases the accuracy and precision of loading estimates."

A description of P8 as described in the software's introduction:

> "P8 is a model for predicting the generation and transport of stormwater runoff pollutants in small urban catchments…
>
> Simulations are driven by hourly rainfall and daily air-temperature time series…"

The following formula was used to calculate the total annual pollutant load. Conversion factors were used to convert acres to square meters and adjust units on the concentration data units.

$$L = [(P)\ (Pj)\ (Rv)\ (C/1000)\ (A*4046.9)]$$

where: L = seasonal pollutant load, kilograms/season
P = seasonal precipitation, inches/season (meters/season)
Pj = correction factor for storms which do not produce runoff = 0.85

Rv = runoff coefficient
C = median event mean concentration of pollutants, mg/L
A = area, acres
Conversion factors 4046.9 for acres to square meters
1000 for liters to cubic meters

The flow weighted mean concentration (FWMC) expressed as a mean of all sites was used for the annual load estimation calculations as it most accurately reflects storm water loadings on an annual basis. The seasonal loadings were calculated from the pooled data using the median event mean concentration as there were too few data points from each watershed to use FLUX to determine with a reasonable degree of accuracy a seasonal FWMC for each site. The median of the data set is a better representation of the runoff data than the mean values (Bannerman et al., 1992). The annual load and a summation of the seasonal loads will not be equal due to this difference in calculation methods.

Seasonal loads were calculated on the following basis.

Season	Inclusive dates	Precipitation for period
Winter/snowmelt	01/01/05 – 03/31/05	3.54 inches (0.090 m)
Spring	04/01/05 – 05/31/05	5.08 inches (0.129 m)
Summer	06/01/05 – 08/31/05	12.40 inches (0.315 m)
Fall	09/01/05 – 12/31/05	12.39 inches (0.315 m)

$$L = [(P)\ (Pj)\ (Rv)\ (C/1000)\ (A*4046.9)]$$

where: L = seasonal pollutant load, kilograms/season
P = seasonal precipitation, inches/season (meters/season)
Pj = correction factor for storms which do not produce runoff = 0.85
Rv = runoff coefficient
C = median event mean concentration of pollutants, mg/L
A = area, acres
Conversion factors 4046.9 for acres to square meters
1000 for liters to cubic meters

Flow-weighted mean concentrations and related statistics for NPDES parameters in 2005. FWMC= Flow Weighted Mean Concentration, CV= Coefficient of Variance. STANDEV= standard deviation.

Site	TP (mg/L)	TDP (mg/L)	TKN (mg/L)	NO3NO2 (mg/L)	NH3 (mg/L)	Cl* (mg/L)	cBOD (mg/L)	TSS (mg/L)	TDS* (mg/L)	Cd (µg/L)	Cu (µg/L)	Pb (µg/L)	Zn (µg/L)
6	0.404	0.137	2.59	0.485	1.57	6.53	12	123	146	2.50	18.6	115	96
7	0.264	0.094	1.75	0.426	1.33	15.1	10	61	266	2.50	18.7	22.0	74
8	0.312	0.171	2.91	0.298	1.40	12.9	7	40	160	2.50	8.86	8.71	25
9	0.434	0.090	6.67	0.582	2.64	37.2	9	208	436	2.50	30.9	17.8	149
MEAN	**0.354**	**0.123**	**3.48**	**0.448**	**1.74**	**18**	**9**	**108**	**252**	**2.50**	**19.3**	**40.9**	**86**
MEDIAN	**0.358**	**0.116**	**2.75**	**0.456**	**1.48**	**14**	**10**	**92**	**213**	**2.50**	**18.7**	**19.9**	**85**
STANDEV	**0.079**	**0.038**	**2.18**	**0.119**	**0.612**	**13**	**2**	**75**	**134**	**0.00**	**9.03**	**49.7**	**51**

*** Flow-weighted mean concentrations for Cl and TDS were difficult to estimate using FLUX due to large outliers from the one snowmelt sample, these estimates should be used with discretion.**

Statistical summary for event mean concentrations by season in 2005. Statistics were calculated from all sites (6-9). STDEV= standard deviation, COV= coefficient of variance

2005 Season	Statistical Function	TP mg/L	TDP mg/L	TKN mg/L	NH3 mg/L	NO3NO2 mg/L	Cl mg/L	Field pH	Sp.Cond. µmhos/cm	F. Coli cfu/100mL	E. Coli mpn/100mL	cBOD mg/L	TSS mg/L	TDS mg/L	Hardness mg/L	Cd µg/L	Cu µg/L	µ
	MEAN (geometric)	1.08	0.440	7.33	6.67	0.895	86.6	9.0	2570	271		22	211	1210	116	2.50	38.2	
	MEAN (arithmetic)	1.15	0.532	7.52	6.90	0.94	99.0	9.0	3870	608		23	231	1710	123	2.50	43.4	
	MAX	1.80	1.10	9.50	8.53	1.34	161	9.7	5690	1,300		34	391	2980	180	2.50	59.2	
SNOWMELT	MIN	0.757	0.200	5.05	4.23	0.582	35.0	7.7	346	30		13	133	215	84	2.50	14.7	
(February)	MEDIAN	1.01	0.417	7.78	7.42	0.914	100	9.4	4720	550		23	200	1820	104	2.50	49.8	
	STDEV	0.464	0.392	1.89	1.90	0.32	51.4	0.94	2390	618		9	117	1140	51	0.000	20.4	
	NUMBER	4	4	4	4	4	4	4	4	4		4	4	4	3	4	4	
	COV	0.405	0.737	0.252	0.276	0.34	0.519	0.10	0.618	1.02		0.379	0.506	0.667	0.413	0.000	0.471	0.
	MEAN (geometric)	0.352	0.122	2.57	1.62	0.336	2.64	8.5	101	3,730		10	86	70	38	2.50	16.5	
	MEAN (arithmetic)	0.395	0.140	2.89	2.21	0.389	12.9	8.5	135	7,280		13	123	90	48	2.50	19.2	
	MAX	0.591	0.262	5.22	5.19	0.785	48.6	9.5	226	16,000		24	286	152	100	2.50	38.0	
SPRING	MIN	0.147	0.077	1.40	0.640	0.223	1.00	7.7	46.0	1,000		5	25	28	18	2.50	9.00	
(April-May)	MEDIAN	0.421	0.111	2.48	1.51	0.274	1.00	8.3	133	6,050		11	90	89	38	2.50	15.0	
	STDEV	0.185	0.087	1.67	2.06	0.268	23.8	0.92	102	7,470		9	114	64	38	0.000	13.0	
	NUMBER	4	4	4	4	4	4	3	4	4		4	4	4	4	4	4	
	COV	0.470	0.620	0.576	0.932	0.688	1.84	0.11	0.760	1.03		0.692	0.927	0.717	0.792	0.000	0.678	0.
	MEAN (geometric)	0.279	0.095	1.84	1.32	0.357	2.10	7.7	86.0	16,400	31,000	8	52	84	40	2.50	16.2	
	MEAN (arithmetic)	0.322	0.116	2.00	1.55	0.456	6.38	7.7	122	48,500	31,600	10	86	108	60	2.50	20.1	
	MAX	0.704	0.426	3.63	3.62	1.12	71.8	9.8	671	344,000	39,800	26	326	476	364	2.50	44.1	
SUMMER	MIN	0.086	0.031	0.769	0.250	0.054	1.00	6.4	26.6	50	26,200	0.5	5	32	12	2.50	2.50	
(June-August)	MEDIAN	0.291	0.107	1.89	1.38	0.378	1.00	7.4	75.2	25,200	28,700	8	63	79	36	2.50	17.8	
	STDEV	0.173	0.089	0.795	0.86	0.296	14.8	0.95	140	77,100	7,240	6	83	100	75	0.000	12.3	
	NUMBER	24	23	24	24	24	24	23	24	26	3	23	24	24	24	24	24	
	COV	0.537	0.767	0.398	0.552	0.650	2.32	0.12	1.14	1.59	0.229	0.655	0.971	0.928	1.24	0.000	0.611	
	MEAN (geometric)	0.222	0.053	2.45	0.777	0.459	2.68	7.9	62.6	6,330		4	56	47	34	2.50	14.8	
	MEAN (arithmetic)	0.247	0.057	4.71	0.943	0.741	10.2	7.9	87.2	33,900		5	90	83	46	2.50	16.0	
	MAX	0.421	0.079	13.8	2.19	2.82	43.2	8.8	226	210,000		11	157	220	112	2.50	25.5	
FALL	MIN	0.101	0.028	0.250	0.265	0.083	1.00	6.9	16.1	200		1	8	5	12	2.50	7.70	
(Sept-Oct)	MEDIAN	0.223	0.066	2.62	0.892	0.505	1.00	8.0	48.0	8,250		4	118	43	24	2.50	15.0	
	STDEV	0.117	0.020	5.14	0.640	0.929	16.7	0.77	75.5	66,300		4	68	79	38	0.000	6.41	
	NUMBER	7	7	7	7	7	7	7	7	10		7	7	7	7	7	7	
	COV	0.476	0.359	1.09	0.678	1.25	1.64	0.10	0.865	1.96		0.726	0.754	0.958	0.821	0.000	0.401	

Supporting Documents

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2005 POLLUTANT LOADINGS BY OUTFALL

2005 POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS PER YEAR (estimated using FLUX)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Mean Flow Weighted Mean Concentration - all 2005 sites			9.00	108	252	3.48	1.740	0.448	0.354	0.123	0.002500	0.019	0.041	0.086
Precipitation (meters)	0.849													
10-010	0.43	113.55	1,287.6	15,451.1	36,052.6	497.9	248.9	64.1	50.6	17.6	0.4	2.8	5.9	12.3
10-020	0.45	7.81	92.4	1,108.5	2,586.5	35.7	17.9	4.6	3.6	1.3	0.0	0.2	0.4	0.9
10-030	0.10	4.05	10.6	127.7	298.1	4.1	2.1	0.5	0.4	0.1	0.0	0.0	0.0	0.1
10-040	0.45	167.42	1,966.5	23,597.6	55,061.0	760.4	380.2	97.9	77.3	26.9	0.5	4.2	8.9	18.8
10-050	0.46	114.18	1,366.1	16,393.4	38,251.3	528.2	264.1	68.0	53.7	18.7	0.4	2.9	6.2	13.1
10-060	0.60	10.5	165.6	1,987.1	4,636.5	64.0	32.0	8.2	6.5	2.3	0.0	0.4	0.8	1.6
10-070	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-080	0.38	30.66	308.0	3,695.5	8,622.7	119.1	59.5	15.3	12.1	4.2	0.1	0.7	1.4	2.9
10-090A	0.00	0.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-090B	0.00	1.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-090C	0.54	12.77	181.8	2,181.1	5,089.2	70.3	35.1	9.0	7.1	2.5	0.1	0.4	0.8	1.7
10-090D	0.00	4.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-100	0.36	1392.1	13,272.0	159,263.5	371,614.9	5,131.8	2,565.9	660.6	522.0	181.4	3.7	28.5	60.3	126.8
10-110	0.47	300.11	3,680.1	44,160.9	103,042.0	1,423.0	711.5	183.2	144.7	50.3	1.0	7.9	16.7	35.2
10-120A/B	0.44	372.78	4,264.7	51,176.7	119,412.3	1,649.0	824.5	212.3	167.7	58.3	1.2	9.1	19.4	40.8
10-130	0.45	336.46	3,993.0	47,916.3	111,804.8	1,544.0	772.0	198.8	157.1	54.6	1.1	8.6	18.1	38.2
10-140a	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-140a,b	0.58	220.65	3,337.2	40,046.9	93,442.8	1,290.4	645.2	166.1	131.3	45.6	0.9	7.2	15.2	31.9
10-150	0.47	157.15	1,936.7	23,240.4	54,227.5	748.9	374.4	96.4	76.2	26.5	0.5	4.2	8.8	18.5
10-160	0.00	17	1.1	13.4	31.3	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
10-170	0.50	176.01	2,328.0	27,936.5	65,185.2	900.2	450.1	115.9	91.6	31.8	0.6	5.0	10.6	22.2
10-180	0.45	284.26	3,327.2	39,926.1	93,160.8	1,286.5	643.3	165.6	130.9	45.5	0.9	7.1	15.1	31.8
10-190	0.59	14.58	226.8	2,721.2	6,349.5	87.7	43.8	11.3	8.9	3.1	0.1	0.5	1.0	2.2
10-200	0.40	42.44	442.9	5,314.7	12,401.1	171.3	85.6	22.0	17.4	6.1	0.1	0.9	2.0	4.2
10-210	0.49	98.32	1,270.4	15,244.2	35,569.9	491.2	245.6	63.2	50.0	17.4	0.4	2.7	5.8	12.1
10-220	0.56	18.83	276.7	3,320.4	7,747.7	107.0	53.5	13.8	10.9	3.8	0.1	0.6	1.3	2.6
10-230	0.47	235.02	2,920.0	35,040.1	81,760.2	1,129.1	564.5	145.4	114.9	39.9	0.8	6.3	13.3	27.9
10-240	0.51	103.83	1,402.0	16,823.4	39,254.7	542.1	271.0	69.8	55.1	19.2	0.4	3.0	6.4	13.4
10-250	0.49	242.96	3,121.8	37,461.5	87,410.2	1,207.1	603.5	155.4	122.8	42.7	0.9	6.7	14.2	29.8
10-260	0.56	23.77	348.1	4,177.1	9,746.5	134.6	67.3	17.3	13.7	4.8	0.1	0.7	1.6	3.3
10-270	0.47	72.45	902.3	10,828.2	25,265.7	348.9	174.5	44.9	35.5	12.3	0.3	1.9	4.1	8.6
10-280	0.44	55.08	642.5	7,710.4	17,990.8	248.4	124.2	32.0	25.3	8.8	0.2	1.4	2.9	6.1
10-290	0.10	6.83	18.0	215.4	502.7	6.9	3.5	0.9	0.7	0.2	0.0	0.0	0.1	0.2
10-300	0.36	17.74	168.1	2,017.6	4,707.8	65.0	32.5	8.4	6.6	2.3	0.0	0.4	0.8	1.6
10-310	0.47	60.29	748.3	8,979.9	20,953.1	289.4	144.7	37.2	29.4	10.2	0.2	1.6	3.4	7.2
10-320	0.45	341.99	4,060.9	48,730.6	113,704.8	1,570.2	785.1	202.1	159.7	55.5	1.1	8.7	18.5	38.8
10-330	0.35	21.61	199.7	2,396.3	5,591.4	77.2	38.6	9.9	7.9	2.7	0.1	0.4	0.9	1.9
10-340	0.45	20.74	246.0	2,951.6	6,887.1	95.1	47.6	12.2	9.7	3.4	0.1	0.5	1.1	2.4
10-350	0.60	28.16	443.3	5,319.4	12,411.9	171.4	85.7	22.1	17.4	6.1	0.1	1.0	2.0	4.2
10-360	0.59	29.02	452.1	5,424.7	12,657.7	174.8	87.4	22.5	17.8	6.2	0.1	1.0	2.1	4.3
10-370	0.59	14.46	224.1	2,688.9	6,274.1	86.6	43.3	11.2	8.8	3.1	0.1	0.5	1.0	2.1
10-380	0.45	14.38	168.3	2,019.1	4,711.3	65.1	32.5	8.4	6.6	2.3	0.0	0.4	0.8	1.6
10-390	0.49	41.97	543.9	6,527.0	15,229.8	210.3	105.2	27.1	21.4	7.4	0.2	1.2	2.5	5.2
10-400A	0.10	1.07	2.8	33.7	78.7	1.1	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
10-400B	0.47	17.66	218.9	2,626.8	6,129.3	84.6	42.3	10.9	8.6	3.0	0.1	0.5	1.0	2.1
10-400C	0.57	50.25	747.3	8,967.3	20,923.6	288.9	144.5	37.2	29.4	10.2	0.2	1.6	3.4	7.1
10-410A	0.50	46.22	604.8	7,257.5	16,934.1	233.9	116.9	30.1	23.8	8.3	0.2	1.3	2.7	5.8
10-410B	0.32	21.29	177.1	2,124.6	4,957.5	68.5	34.2	8.8	7.0	2.4	0.0	0.4	0.8	1.7
10-410C	0.53	22.8	316.3	3,795.6	8,856.4	122.3	61.2	15.7	12.4	4.3	0.1	0.7	1.4	3.0
10-410D	0.60	27.34	431.3	5,176.0	12,077.4	166.8	83.4	21.5	17.0	5.9	0.1	0.9	2.0	4.1
10-410E	0.58	256.04	3,872.5	46,470.1	108,430.1	1,497.4	748.7	192.8	152.3	52.9	1.1	8.3	17.6	37.0
10-410F	0.59	37.92	586.3	7,035.3	16,415.8	226.7	113.3	29.2	23.1	8.0	0.2	1.3	2.7	5.6
10-420A	0.27	23.05	165.1	1,981.2	4,622.7	63.8	31.9	8.2	6.5	2.3	0.0	0.4	0.8	1.6
10-420B	0.00	10.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420C	0.00	7.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420D	0.00	20.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420E	0.59	127.89	1,972.6	23,671.3	55,233.0	762.7	381.4	98.2	77.6	27.0	0.5	4.2	9.0	18.8
10-430A	0.00	8.14	0.5	6.4	15.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430B	0.53	54.72	768.5	9,222.2	21,518.5	297.2	148.6	38.3	30.2	10.5	0.2	1.6	3.5	7.3
10-430C	0.48	44.83	566.1	6,792.6	15,849.5	218.9	109.4	28.2	22.3	7.7	0.2	1.2	2.6	5.4
10-430D	0.49	85.79	1,108.5	13,302.3	31,038.6	428.6	214.3	55.2	43.6	15.1	0.3	2.4	5.0	10.6
10-430E	0.56	86.66	1,270.1	15,241.2	35,562.7	491.1	245.6	63.2	50.0	17.4	0.4	2.7	5.8	12.1
10-430F	0.10	377.97	993.5	11,921.5	27,816.8	384.1	192.1	49.5	39.1	13.6	0.3	2.1	4.5	9.5
10-430G	0.50	125.89	1,639.8	19,678.1	45,915.5	634.1	317.0	81.6	64.5	22.4	0.5	3.5	7.5	15.7
10-430H	0.49	33.18	428.5	5,142.4	11,999.0	165.7	82.8	21.3	16.9	5.9	0.1	0.9	1.9	4.1
10-430I	0.59	32.61	504.5	6,054.2	14,126.5	195.1	97.5	25.1	19.8	6.9	0.1	1.1	2.3	4.8
10-430J	0.43	532.36	6,072.1	72,865.0	170,018.2	2,347.9	1,173.9	302.3	238.8	83.0	1.7	13.0	27.6	58.0
10-430K	0.48	337.06	4,231.7	50,780.0	118,486.6	1,636.2	818.1	210.6	166.4	57.8	1.2	9.1	19.2	40.4
10-430L	0.45	84.4	999.9	11,999.3	27,998.4	386.6	193.3	49.8	39.3	13.7	0.3	2.1	4.5	9.6
10-430M	0.54	75.94	1,082.6	12,991.2	30,312.8	418.6	209.3	53.9	42.6	14.8	0.3	2.3	4.9	10.3
10-430N	0.44	26.43	308.4	3,700.6	8,634.7	119.2	59.6	15.4	12.1	4.2	0.1	0.7	1.4	2.9
10-430O	0.00	109.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430P	0.00	229.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430Q	0.10	8.03	21.1	253.3	591.0	8.2	4.1	1.1	0.8	0.3	0.0	0.0	0.1	0.2
10-430R	0.47	150.32	1,847.0	22,163.8	51,715.4	714.2	357.1	91.9	72.6	25.2	0.5	4.0	8.4	17.6
10-430S	0.10	5.15	13.5	162.4	379.0	5.2	2.6	0.7	0.5	0.2	0.0	0.0	0.1	0.1
10-430T	0.46	262.47	3,153.6	37,842.8	88,299.8	1,219.4	609.7	157.0	124.0	43.1	0.9	6.8	14.3	30.1
10-430U	0.47	431.37	5,327.3	63,927.3	149,163.8	2,059.9	1,029.9	265.2	209.5	72.8	1.5	11.4	24.2	50.9

2005 POLLUTANT LOADINGS BY OUTFALL

2005 POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS PER YEAR (estimated using FLUX)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Mean Flow Weighted Mean Concentration - all 2005 sites			9.00	108	252	3.48	1.740	0.448	0.354	0.123	0.002500	0.019	0.041	0.086
Precipitation (meters)	0.849													
10-430V	0.46	329.11	4,021.0	48,251.7	112,587.4	1,554.8	777.4	200.2	158.2	55.0	1.1	8.6	18.3	38.4
10-440A	0.46	23.18	279.1	3,349.5	7,815.4	107.9	54.0	13.9	11.0	3.8	0.1	0.6	1.3	2.7
10-440B	0.49	34.23	443.4	5,320.5	12,414.4	171.4	85.7	22.1	17.4	6.1	0.1	1.0	2.0	4.2
10-440C/D	0.00	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-440E	0.51	831.25	11,235.3	134,823.8	314,588.9	4,344.3	2,172.2	559.3	441.9	153.5	3.1	24.1	51.1	107.4
10-440F	0.46	538.85	6,518.2	78,218.3	182,509.5	2,520.4	1,260.2	324.5	256.4	89.1	1.8	14.0	29.6	62.3
10-450A	0.00	343.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-450B	0.52	3.41	46.3	555.7	1,296.6	17.9	9.0	2.3	1.8	0.6	0.0	0.1	0.2	0.4
10-450C	0.59	55.64	868.5	10,421.5	24,316.9	335.8	167.9	43.2	34.2	11.9	0.2	1.9	3.9	8.3
10-450D	0.45	4.62	54.6	655.7	1,530.0	21.1	10.6	2.7	2.1	0.7	0.0	0.1	0.2	0.5
10-450E	0.44	3.2	37.2	446.1	1,040.9	14.4	7.2	1.9	1.5	0.5	0.0	0.1	0.2	0.4
10-450F	0.46	158.55	1,914.6	22,975.0	53,608.4	740.3	370.2	95.3	75.3	26.2	0.5	4.1	8.7	18.3
10-450G/H	0.48	75.02	947.4	11,369.4	26,528.5	366.3	183.2	47.2	37.3	12.9	0.3	2.0	4.3	9.1
10-450I	0.49	243.64	3,145.7	37,748.6	88,080.1	1,216.3	608.2	156.6	123.7	43.0	0.9	6.7	14.3	30.1
10-450J	0.49	17.16	219.0	2,627.6	6,131.1	84.7	42.3	10.9	8.6	3.0	0.1	0.5	1.0	2.1
10-450K	0.58	37.01	563.5	6,761.9	15,777.9	217.9	108.9	28.0	22.2	7.7	0.2	1.2	2.6	5.4
10-450L	0.51	213.41	2,833.0	33,996.3	79,324.7	1,095.4	547.7	141.0	111.4	38.7	0.8	6.1	12.9	27.1
10-460	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460A	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460B	0.52	7.29	99.0	1,188.3	2,772.6	38.3	19.1	4.9	3.9	1.4	0.0	0.2	0.4	0.9
10-460C/D/F	0.00	159.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460E	0.49	231.41	3,003.7	36,044.9	84,104.9	1,161.4	580.7	149.5	118.1	41.1	0.8	6.4	13.7	28.7
10-460F	0.49	14.75	191.8	2,301.5	5,370.3	74.2	37.1	9.5	7.5	2.6	0.1	0.4	0.9	1.8
10-460G	0.51	79.66	1,069.5	12,834.1	29,946.3	413.5	206.8	53.2	42.1	14.6	0.3	2.3	4.9	10.2
10-460H	0.48	12.35	155.6	1,867.4	4,357.3	60.2	30.1	7.7	6.1	2.1	0.0	0.3	0.7	1.5
10-460I	0.00	72.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460J	0.46	5.36	65.3	783.9	1,829.1	25.3	12.6	3.3	2.6	0.9	0.0	0.1	0.3	0.6
10-460K	0.36	5.48	51.8	621.7	1,450.7	20.0	10.0	2.6	2.0	0.7	0.0	0.1	0.2	0.5
10-460L	0.46	3.5	42.6	511.6	1,193.7	16.5	8.2	2.1	1.7	0.6	0.0	0.1	0.2	0.4
10-460M	0.48	9.55	120.1	1,441.6	3,363.7	46.5	23.2	6.0	4.7	1.6	0.0	0.3	0.5	1.1
10-460N	0.45	3.85	45.5	546.4	1,275.0	17.6	8.8	2.3	1.8	0.6	0.0	0.1	0.2	0.4
10-460O	0.45	4.15	49.5	593.9	1,385.7	19.1	9.6	2.5	1.9	0.7	0.0	0.1	0.2	0.5
10-460P	0.45	4.34	51.3	616.0	1,437.3	19.8	9.9	2.6	2.0	0.7	0.0	0.1	0.2	0.5
10-460Q	0.56	19.73	292.6	3,510.8	8,191.9	113.1	56.6	14.6	11.5	4.0	0.1	0.6	1.3	2.8
10-460R	0.00	51.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460S	0.56	233.54	3,463.9	41,566.4	96,988.3	1,339.4	669.7	172.4	136.2	47.3	1.0	7.4	15.7	33.1
10-465	0.10	8.56	22.5	270.0	630.0	8.7	4.3	1.1	0.9	0.3	0.0	0.0	0.1	0.2
10-470	0.38	25.6	256.8	3,081.6	7,190.3	99.3	49.6	12.8	10.1	3.5	0.1	0.6	1.2	2.5
10-480	0.58	39.66	604.8	7,257.5	16,934.2	233.9	116.9	30.1	23.8	8.3	0.2	1.3	2.7	5.8
10-485	0.00	7.27	0.5	5.7	13.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-490	0.43	150.96	1,720.1	20,641.6	48,163.8	665.1	332.6	85.6	67.7	23.5	0.5	3.7	7.8	16.4
10-500A	0.26	26.21	180.8	2,169.6	5,062.4	69.9	35.0	9.0	7.1	2.5	0.1	0.4	0.8	1.7
10-500B	0.46	8.48	102.6	1,231.1	2,872.5	39.7	19.8	5.1	4.0	1.4	0.0	0.2	0.5	1.0
10-500C	0.44	111.36	1,274.3	15,291.3	35,679.8	492.7	246.4	63.4	50.1	17.4	0.4	2.7	5.8	12.2
10-500D	0.24	3.83	24.0	287.6	671.1	9.3	4.6	1.2	0.9	0.3	0.0	0.1	0.1	0.2
10-500E	0.53	23.34	326.6	3,919.6	9,145.8	126.3	63.1	16.3	12.8	4.5	0.1	0.7	1.5	3.1
10-500F	0.49	12.04	156.3	1,875.2	4,375.4	60.4	30.2	7.8	6.1	2.1	0.0	0.3	0.7	1.5
10-500G	0.00	112.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-505	0.10	7.85	20.6	247.6	577.7	8.0	4.0	1.0	0.8	0.3	0.0	0.0	0.1	0.2
10-510	0.51	62.36	833.7	10,004.4	23,343.5	322.4	161.2	41.5	32.8	11.4	0.2	1.8	3.8	8.0
10-520	0.00	139.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-530	0.45	116.15	1,376.2	16,514.0	38,532.7	532.1	266.1	68.5	54.1	18.8	0.4	3.0	6.3	13.2
10-540	0.12	53.9	167.8	2,013.3	4,697.7	64.9	32.4	8.4	6.6	2.3	0.0	0.4	0.8	1.6
10-550	0.46	25.83	312.2	3,746.9	8,742.8	120.7	60.4	15.5	12.3	4.3	0.1	0.7	1.4	3.0
10-560A/B	0.44	600.63	6,906.7	82,880.0	193,386.6	2,670.6	1,335.3	343.8	271.7	94.4	1.9	14.8	31.4	66.0
10-570A	0.54	14.64	209.2	2,510.9	5,858.9	80.9	40.5	10.4	8.2	2.9	0.1	0.4	1.0	2.0
10-570B	0.44	228.18	2,618.0	31,415.9	73,303.8	1,012.3	506.1	130.3	103.0	35.8	0.7	5.6	11.9	25.0
10-580	0.45	73.39	865.8	10,389.4	24,242.0	334.8	167.4	43.1	34.1	11.8	0.2	1.9	3.9	8.3
10-600	0.48	89.24	1,134.3	13,612.1	31,761.5	438.6	219.3	56.5	44.6	15.5	0.3	2.4	5.2	10.8
10-610	0.46	25.6	308.4	3,700.9	8,635.5	119.3	59.6	15.4	12.1	4.2	0.1	0.7	1.4	2.9
10-620	0.00	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630A	0.10	6.24	16.4	196.8	459.2	6.3	3.2	0.8	0.6	0.2	0.0	0.0	0.1	0.2
10-630B	0.45	4.68	55.4	664.2	1,549.9	21.4	10.7	2.8	2.2	0.8	0.0	0.1	0.3	0.5
10-630C	0.48	96.03	1,219.5	14,633.5	34,144.8	471.5	235.8	60.7	48.0	16.7	0.3	2.6	5.5	11.7
10-630D	0.45	6.37	75.3	904.1	2,109.6	29.1	14.6	3.8	3.0	1.0	0.0	0.2	0.3	0.7
10-630E	0.45	8.52	100.8	1,209.3	2,821.6	39.0	19.5	5.0	4.0	1.4	0.0	0.2	0.5	1.0
10-630F	0.54	17.56	249.3	2,992.2	6,981.7	96.4	48.2	12.4	9.8	3.4	0.1	0.5	1.1	2.4
10-630G	0.45	5.9	69.8	837.4	1,954.0	27.0	13.5	3.5	2.7	1.0	0.0	0.1	0.3	0.7
10-630H	0.30	25.63	204.0	2,448.4	5,712.9	78.9	39.4	10.2	8.0	2.8	0.1	0.4	0.9	1.9
10-630I	0.47	12.48	152.5	1,830.5	4,271.1	59.0	29.5	7.6	6.0	2.1	0.0	0.3	0.7	1.5
10-630J	0.55	14.69	213.8	2,565.3	5,985.7	82.7	41.3	10.6	8.4	2.9	0.1	0.5	1.0	2.0
10-630K	0.47	95.29	1,185.4	14,224.8	33,191.1	458.4	229.2	59.0	46.6	16.2	0.3	2.5	5.4	11.3
10-630L	0.52	100.42	1,375.1	16,501.8	38,504.2	531.7	265.9	68.5	54.1	18.8	0.4	2.9	6.2	13.1
10-630M	0.50	11.71	152.8	1,833.9	4,279.0	59.1	29.5	7.6	6.0	2.1	0.0	0.3	0.7	1.5
10-630N	0.45	8.45	99.9	1,199.3	2,798.5	38.6	19.3	5.0	3.9	1.4	0.0	0.2	0.5	1.0
10-630O	0.36	5.77	55.2	662.6	1,546.0	21.4	10.7	2.7	2.2	0.8	0.0	0.1	0.3	0.5
10-630P/Q	0.00	67.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630R	0.33	83.89	736.4	8,837.1	20,619.8	284.7	142.4	36.7	29.0	10.1	0.2	1.6	3.3	7.0
10-630S	0.22	37.02	211.5	2,538.2	5,922.5	81.8	40.9	10.5	8.3	2.9	0.1	0.5	1.0	2.0

2005 POLLUTANT LOADINGS BY OUTFALL

2005 POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS PER YEAR (estimated using FLUX)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Mean Flow Weighted Mean Concentration - all 2005 sites			9.00	108	252	3.48	1.740	0.448	0.354	0.123	0.002500	0.019	0.041	0.086
Precipitation (meters)	0.849													
10-630T	0.56	7.72	114.1	1,369.7	3,195.9	44.1	22.1	5.7	4.5	1.6	0.0	0.2	0.5	1.1
10-630U	0.52	115.42	1,586.9	19,042.8	44,433.2	613.6	306.8	79.0	62.4	21.7	0.4	3.4	7.2	15.2
10-630V	0.11	33.85	94.0	1,127.5	2,630.7	36.3	18.2	4.7	3.7	1.3	0.0	0.2	0.4	0.9
10-630W	0.47	23.68	294.8	3,538.0	8,255.3	114.0	57.0	14.7	11.6	4.0	0.1	0.6	1.3	2.8
10-630X	0.44	14.78	171.9	2,062.3	4,812.0	66.5	33.2	8.6	6.8	2.3	0.0	0.4	0.8	1.6
10-630Y	0.00	112.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630Z	0.47	45.66	565.0	6,780.1	15,820.2	218.5	109.2	28.1	22.2	7.7	0.2	1.2	2.6	5.4
10-640	0.46	258.18	3,103.6	37,243.3	86,901.0	1,200.1	600.0	154.5	122.1	42.4	0.9	6.7	14.1	29.7
10-650	0.56	19.53	285.9	3,431.2	8,006.2	110.6	55.3	14.2	11.2	3.9	0.1	0.6	1.3	2.7
10-660	0.46	306.37	3,730.4	44,765.1	104,451.8	1,442.4	721.2	185.7	146.7	51.0	1.0	8.0	17.0	35.6
10-670	0.45	137.88	1,628.4	19,541.1	45,595.9	629.7	314.8	81.1	64.1	22.3	0.5	3.5	7.4	15.6
10-680	0.46	707.95	8,531.9	102,383.2	238,894.2	3,299.0	1,649.5	424.7	335.6	116.6	2.4	18.3	38.8	81.5
10-690	0.50	70.63	928.7	11,144.9	26,004.7	359.1	179.6	46.2	36.5	12.7	0.3	2.0	4.2	8.9
10-700	0.46	222.07	2,710.4	32,524.7	75,890.9	1,048.0	524.0	134.9	106.6	37.0	0.8	5.8	12.3	25.9
10-710	0.33	29.95	262.2	3,146.9	7,342.7	101.4	50.7	13.1	10.3	3.6	0.1	0.6	1.2	2.5
10-720A	0.44	15.77	183.8	2,205.6	5,146.3	71.1	35.5	9.1	7.2	2.5	0.1	0.4	0.8	1.8
10-720B	0.48	422.18	5,346.1	64,153.3	149,691.1	2,067.2	1,033.6	266.1	210.3	73.1	1.5	11.5	24.3	51.1
10-720C	0.43	26.35	297.4	3,568.7	8,327.1	115.0	57.5	14.8	11.7	4.1	0.1	0.6	1.4	2.8
10-720D	0.46	22.95	274.6	3,295.5	7,689.5	106.2	53.1	13.7	10.8	3.8	0.1	0.6	1.2	2.6
10-720E	0.46	18.39	220.3	2,643.4	6,167.9	85.2	42.6	11.0	8.7	3.0	0.1	0.5	1.0	2.1
10-720F	0.48	317.75	4,007.3	48,087.0	112,203.0	1,549.5	774.7	199.5	157.6	54.8	1.1	8.6	18.2	38.3
10-720G	0.00	13.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-720H	0.45	4.55	53.8	645.8	1,506.9	20.8	10.4	2.7	2.1	0.7	0.0	0.1	0.2	0.5
10-720I	0.45	87.27	1,022.9	12,275.2	28,642.2	395.5	197.8	50.9	40.2	14.0	0.3	2.2	4.6	9.8
10-720J	0.36	3.71	34.8	418.0	975.4	13.5	6.7	1.7	1.4	0.5	0.0	0.1	0.2	0.3
10-720K	0.55	32.76	472.8	5,673.6	13,238.5	182.8	91.4	23.5	18.6	6.5	0.1	1.0	2.1	4.5
10-720L	0.45	4.57	54.1	648.6	1,513.5	20.9	10.5	2.7	2.1	0.7	0.0	0.1	0.2	0.5
20-010	0.42	93.99	1,037.1	12,445.2	29,038.8	401.0	200.5	51.6	40.8	14.2	0.3	2.2	4.7	9.9
20-020	0.44	15.09	174.0	2,087.8	4,871.5	67.3	33.6	8.7	6.8	2.4	0.0	0.4	0.8	1.7
20-030	0.45	7.95	94.0	1,128.4	2,632.9	36.4	18.2	4.7	3.7	1.3	0.0	0.2	0.4	0.9
20-040	0.37	6.79	66.5	798.4	1,863.0	25.7	12.9	3.3	2.6	0.9	0.0	0.1	0.3	0.6
20-050	0.00	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-060	0.45	5.91	69.9	838.8	1,957.3	27.0	13.5	3.5	2.7	1.0	0.0	0.1	0.3	0.7
20-070	0.44	39.07	455.3	5,463.8	12,748.9	176.1	88.0	22.7	17.9	6.2	0.1	1.0	2.1	4.4
20-080	0.45	33.72	401.8	4,822.1	11,251.5	155.4	77.7	20.0	15.8	5.5	0.1	0.9	1.8	3.8
20-090	0.55	9.95	144.6	1,734.7	4,047.6	55.9	27.9	7.2	5.7	2.0	0.0	0.3	0.7	1.4
20-100	0.10	0.99	2.6	31.2	72.9	1.0	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
20-110	0.24	216.04	1,362.4	16,348.3	38,146.1	526.8	263.4	67.8	53.6	18.6	0.4	2.9	6.2	13.0
20-120	0.47	10.22	125.6	1,506.8	3,515.9	48.6	24.3	6.3	4.9	1.7	0.0	0.3	0.6	1.2
20-130	0.45	16.12	190.7	2,288.0	5,338.6	73.7	36.9	9.5	7.5	2.6	0.1	0.4	0.9	1.8
20-140	0.44	2.97	34.5	413.4	964.6	13.3	6.7	1.7	1.4	0.5	0.0	0.1	0.2	0.3
20-150	0.45	14.48	171.3	2,055.2	4,795.5	66.2	33.1	8.5	6.7	2.3	0.0	0.4	0.8	1.6
20-160	0.54	3.21	45.6	547.0	1,276.4	17.6	8.8	2.3	1.8	0.6	0.0	0.1	0.2	0.4
20-170	0.37	4.94	48.4	580.5	1,354.6	18.7	9.4	2.4	1.9	0.7	0.0	0.1	0.2	0.5
20-180	0.51	5.3	70.5	846.1	1,974.1	27.3	13.6	3.5	2.8	1.0	0.0	0.2	0.3	0.7
20-190	0.45	1.35	16.0	191.6	447.1	6.2	3.1	0.8	0.6	0.2	0.0	0.0	0.1	0.2
20-200	0.45	13.84	163.7	1,964.4	4,583.5	63.3	31.6	8.1	6.4	2.2	0.0	0.4	0.7	1.6
20-210A	0.44	92.9	1,072.6	12,871.2	30,032.9	414.7	207.4	53.4	42.2	14.7	0.3	2.3	4.9	10.2
20-210B	0.50	620.78	8,232.7	98,791.9	230,514.5	3,183.3	1,591.6	409.8	323.8	112.5	2.3	17.7	37.4	78.7
20-220	0.46	26.38	319.7	3,835.9	8,950.5	123.6	61.8	15.9	12.6	4.4	0.1	0.7	1.5	3.1
20-230	0.00	21.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-240	0.48	30.06	380.7	4,568.0	10,658.7	147.2	73.6	18.9	15.0	5.2	0.1	0.8	1.7	3.6
20-250	0.57	6.28	94.4	1,132.4	2,642.4	36.5	18.2	4.7	3.7	1.3	0.0	0.2	0.4	0.9
20-260	0.60	3.5	55.2	662.4	1,545.5	21.3	10.7	2.7	2.2	0.8	0.0	0.1	0.3	0.5
20-270	0.48	42.81	536.4	6,436.9	15,019.4	207.4	103.7	26.7	21.1	7.3	0.1	1.2	2.4	5.1
20-280	0.54	8.98	126.9	1,522.3	3,552.0	49.1	24.5	6.3	5.0	1.7	0.0	0.3	0.6	1.2
20-290	0.00	4.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-010	0.45	49.49	583.1	6,997.0	16,326.3	225.5	112.7	29.0	22.9	8.0	0.2	1.3	2.6	5.6
40-010	0.45	719.17	8,470.6	101,646.8	237,176.0	3,275.3	1,637.6	421.6	333.2	115.8	2.4	18.2	38.5	80.9
40-020	0.45	15.36	181.7	2,180.1	5,086.9	70.2	35.1	9.0	7.1	2.5	0.1	0.4	0.8	1.7
40-030	0.42	51.02	560.2	6,722.4	15,685.6	216.6	108.3	27.9	22.0	7.7	0.2	1.2	2.5	5.4
40-040	0.43	65.39	746.3	8,955.1	20,895.2	288.6	144.3	37.1	29.4	10.2	0.2	1.6	3.4	7.1
40-050	0.45	10.28	121.6	1,459.1	3,404.5	47.0	23.5	6.1	4.8	1.7	0.0	0.3	0.6	1.2
40-060	0.45	3.2	37.8	454.2	1,059.8	14.6	7.3	1.9	1.5	0.5	0.0	0.1	0.2	0.4
40-070	0.38	7.98	79.4	952.2	2,221.8	30.7	15.3	3.9	3.1	1.1	0.0	0.2	0.4	0.8
40-080	0.41	60.51	649.5	7,794.3	18,186.6	251.1	125.6	32.3	25.5	8.9	0.2	1.4	3.0	6.2
40-090	0.46	20.65	252.3	3,027.8	7,064.9	97.6	48.8	12.6	9.9	3.4	0.1	0.5	1.1	2.4
40-100	0.00	20.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-110	0.44	2.61	30.4	365.3	852.5	11.8	5.9	1.5	1.2	0.4	0.0	0.1	0.1	0.3
40-120	0.44	65.87	758.8	9,105.6	21,246.4	293.4	146.7	37.8	29.8	10.4	0.2	1.6	3.4	7.3
40-130	0.45	35.01	415.8	4,989.7	11,642.7	160.8	80.4	20.7	16.4	5.7	0.1	0.9	1.9	4.0
40-140	0.35	125.46	1,146.7	13,760.1	32,107.0	443.4	221.7	57.1	45.1	15.7	0.3	2.5	5.2	11.0
40-150	0.47	24.31	302.7	3,632.4	8,475.6	117.0	58.5	15.1	11.9	4.1	0.1	0.6	1.4	2.9
40-160	0.49	30.99	402.7	4,832.1	11,274.8	155.7	77.9	20.0	15.8	5.5	0.1	0.9	1.8	3.8
40-170	0.00	194.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-180	0.54	16.8	237.7	2,852.6	6,656.1	91.9	46.0	11.8	9.4	3.2	0.1	0.5	1.1	2.3
40-190	0.53	65.53	910.8	10,929.0	25,501.1	352.2	176.1	45.3	35.8	12.4	0.3	2.0	4.1	8.7
40-200	0.46	24.75	300.8	3,609.0	8,421.1	116.3	58.1	15.0	11.8	4.1	0.1	0.6	1.4	2.9
40-210	0.54	17.26	247.2	2,966.1	6,920.9	95.6	47.8	12.3	9.7	3.4	0.1	0.5	1.1	2.4

2005 POLLUTANT LOADINGS BY OUTFALL

2005 POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS PER YEAR (estimated using FLUX)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Mean Flow Weighted Mean Concentration - all 2005 sites			9.00	108	252	3.48	1.740	0.448	0.354	0.123	0.002500	0.019	0.041	0.086
Precipitation (meters)	0.849													
40-220	0.47	100.58	1,235.9	14,830.4	34,604.2	477.9	238.9	61.5	48.6	16.9	0.3	2.7	5.6	11.8
40-230	0.44	13.78	161.1	1,933.4	4,511.2	62.3	31.1	8.0	6.3	2.2	0.0	0.3	0.7	1.5
40-240	0.00	340.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-250	0.60	1.15	18.1	217.6	507.8	7.0	3.5	0.9	0.7	0.2	0.0	0.0	0.1	0.2
40-260	0.45	3.49	41.3	495.3	1,155.8	16.0	8.0	2.1	1.6	0.6	0.0	0.1	0.2	0.4
40-270	0.45	9.59	113.4	1,361.1	3,176.0	43.9	21.9	5.6	4.5	1.6	0.0	0.2	0.5	1.1
40-280	0.53	12.76	176.4	2,116.5	4,938.4	68.2	34.1	8.8	6.9	2.4	0.0	0.4	0.8	1.7
40-290	0.51	13.73	184.8	2,217.4	5,173.9	71.4	35.7	9.2	7.3	2.5	0.1	0.4	0.8	1.8
40-300	0.52	10.38	142.2	1,705.8	3,980.2	55.0	27.5	7.1	5.6	1.9	0.0	0.3	0.6	1.4
40-310	0.45	97.86	1,164.3	13,971.3	32,599.6	450.2	225.1	58.0	45.8	15.9	0.3	2.5	5.3	11.1
40-320	0.60	9.43	148.7	1,784.6	4,164.0	57.5	28.8	7.4	5.8	2.0	0.0	0.3	0.7	1.4
40-330	0.59	15.34	239.0	2,867.7	6,691.2	92.4	46.2	11.9	9.4	3.3	0.1	0.5	1.1	2.3
40-340	0.53	35.27	494.0	5,928.5	13,833.1	191.0	95.5	24.6	19.4	6.8	0.1	1.1	2.2	4.7
40-350	0.60	8.99	141.8	1,701.3	3,969.7	54.8	27.4	7.1	5.6	1.9	0.0	0.3	0.6	1.4
40-360	0.60	8.09	127.6	1,531.0	3,572.3	49.3	24.7	6.4	5.0	1.7	0.0	0.3	0.6	1.2
40-370	0.58	12.41	188.7	2,264.2	5,283.1	73.0	36.5	9.4	7.4	2.6	0.1	0.4	0.9	1.8
40-380	0.39	24.92	257.7	3,092.3	7,215.4	99.6	49.8	12.8	10.1	3.5	0.1	0.6	1.2	2.5
40-390	0.58	5.72	87.2	1,046.3	2,441.4	33.7	16.9	4.3	3.4	1.2	0.0	0.2	0.4	0.8
40-400	0.10	1.07	2.8	33.7	78.7	1.1	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
41-010	0.38	94.73	939.8	11,277.6	26,314.4	363.4	181.7	46.8	37.0	12.8	0.3	2.0	4.3	9.0
41-020	0.00	14.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41-030	0.50	60.47	797.8	9,574.2	22,339.8	308.5	154.3	39.7	31.4	10.9	0.2	1.7	3.6	7.6
41-040	0.57	35.59	536.0	6,432.1	15,008.3	207.3	103.6	26.7	21.1	7.3	0.1	1.1	2.4	5.1
41-050	0.60	10.48	165.3	1,983.3	4,627.7	63.9	32.0	8.2	6.5	2.3	0.0	0.4	0.8	1.6
41-060	0.60	2.95	46.5	558.3	1,302.6	18.0	9.0	2.3	1.8	0.6	0.0	0.1	0.2	0.4
51-010	0.45	29.63	351.5	4,218.0	9,841.9	135.9	68.0	17.5	13.8	4.8	0.1	0.8	1.6	3.4
51-020	0.45	4.55	53.8	645.8	1,506.9	20.8	10.4	2.7	2.1	0.7	0.0	0.1	0.2	0.5
52-010	0.28	45.29	329.0	3,947.6	9,211.1	127.2	63.6	16.4	12.9	4.5	0.1	0.7	1.5	3.1
52-020	0.45	6.09	72.0	864.4	2,016.9	27.9	13.9	3.6	2.8	1.0	0.0	0.2	0.3	0.7
52-030	0.45	7.18	84.9	1,019.1	2,377.9	32.8	16.4	4.2	3.3	1.2	0.0	0.2	0.4	0.8
52-040	0.41	4.54	49.3	591.9	1,381.1	19.1	9.5	2.5	1.9	0.7	0.0	0.1	0.2	0.5
52-050	0.44	15.3	174.9	2,099.3	4,898.4	67.6	33.8	8.7	6.9	2.4	0.0	0.4	0.8	1.7
52-060	0.10	3.22	8.5	101.6	237.0	3.3	1.6	0.4	0.3	0.1	0.0	0.0	0.0	0.1
52-070	0.42	86.94	967.0	11,604.3	27,076.6	373.9	187.0	48.1	38.0	13.2	0.3	2.1	4.4	9.2
52-080	0.24	8.08	51.4	616.8	1,439.2	19.9	9.9	2.6	2.0	0.7	0.0	0.1	0.2	0.5
52-090	0.45	4.89	57.8	694.1	1,619.5	22.4	11.2	2.9	2.3	0.8	0.0	0.1	0.3	0.6
52-100A/B	0.27	11.89	83.3	999.9	2,333.1	32.2	16.1	4.1	3.3	1.1	0.0	0.2	0.4	0.8
52-110	0.45	8.84	103.7	1,244.6	2,904.1	40.1	20.1	5.2	4.1	1.4	0.0	0.2	0.5	1.0
52-120	0.45	14.74	174.3	2,092.1	4,881.6	67.4	33.7	8.7	6.9	2.4	0.0	0.4	0.8	1.7
52-130	0.31	7.18	59.4	712.8	1,663.3	23.0	11.5	3.0	2.3	0.8	0.0	0.1	0.3	0.6
53-010	0.45	7.03	83.1	997.8	2,328.2	32.2	16.1	4.1	3.3	1.1	0.0	0.2	0.4	0.8
53-020	0.28	12.38	89.9	1,079.2	2,518.0	34.8	17.4	4.5	3.5	1.2	0.0	0.2	0.4	0.9
53-030	0.44	11.37	130.6	1,566.7	3,655.7	50.5	25.2	6.5	5.1	1.8	0.0	0.3	0.6	1.2
53-040	0.45	2.78	32.9	394.6	920.7	12.7	6.4	1.6	1.3	0.4	0.0	0.1	0.1	0.3
53-050	0.45	13.66	161.6	1,938.8	4,523.9	62.5	31.2	8.0	6.4	2.2	0.0	0.3	0.7	1.5
53-060	0.45	20.37	240.9	2,891.2	6,746.1	93.2	46.6	12.0	9.5	3.3	0.1	0.5	1.1	2.3
53-070	0.45	4.89	57.8	694.1	1,619.5	22.4	11.2	2.9	2.3	0.8	0.0	0.1	0.3	0.6
53-080	0.39	5.81	60.2	722.4	1,685.6	23.3	11.6	3.0	2.4	0.8	0.0	0.1	0.3	0.6
53-090	0.46	59.59	719.2	8,630.2	20,137.1	278.1	139.0	35.8	28.3	9.8	0.2	1.5	3.3	6.9
53-100	0.00	107	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53-110	0.38	4.59	46.4	557.2	1,300.2	18.0	9.0	2.3	1.8	0.6	0.0	0.1	0.2	0.4
53-120A/B	0.46	129.79	1,554.3	18,651.4	43,520.0	601.0	300.5	77.4	61.1	21.2	0.4	3.3	7.1	14.9
53-130	0.45	5.02	59.4	712.5	1,662.5	23.0	11.5	3.0	2.3	0.8	0.0	0.1	0.3	0.6
53-140	0.45	6.36	75.2	902.7	2,106.3	29.1	14.5	3.7	3.0	1.0	0.0	0.2	0.3	0.7
53-150	0.48	90.4	1,149.6	13,795.0	32,188.3	444.5	222.3	57.2	45.2	15.7	0.3	2.5	5.2	11.0
53-160	0.47	252.19	3,133.8	37,605.5	87,746.1	1,211.7	605.9	156.0	123.3	42.8	0.9	6.7	14.2	29.9
53-170	0.36	6.39	60.6	727.3	1,697.0	23.4	11.7	3.0	2.4	0.8	0.0	0.1	0.3	0.6
53-180	0.10	8.09	21.3	255.2	595.4	8.2	4.1	1.1	0.8	0.3	0.0	0.0	0.1	0.2
53-190	0.30	11.41	90.1	1,081.5	2,523.4	34.8	17.4	4.5	3.5	1.2	0.0	0.2	0.4	0.9
54-010A/B	0.44	84.93	971.2	11,654.9	27,194.7	375.5	187.8	48.3	38.2	13.3	0.3	2.1	4.4	9.3
54-040A/B	0.49	255.14	3,319.1	39,829.4	92,935.3	1,283.4	641.7	165.2	130.6	45.4	0.9	7.1	15.1	31.7
54-050	0.17	9.27	42.4	508.4	1,186.3	16.4	8.2	2.1	1.7	0.6	0.0	0.1	0.2	0.4
54-060	0.44	32.13	371.0	4,451.5	10,386.8	143.4	71.7	18.5	14.6	5.1	0.1	0.8	1.7	3.5
54-070	0.36	60.8	573.0	6,876.4	16,045.0	221.6	110.8	28.5	22.5	7.8	0.2	1.2	2.6	5.5
54-080A/B/C	0.46	414.26	4,977.0	59,723.8	139,355.6	1,924.4	962.2	247.7	195.8	68.0	1.4	10.7	22.6	47.6
54-090	0.10	3.55	9.3	112.0	261.3	3.6	1.8	0.5	0.4	0.1	0.0	0.0	0.0	0.1
54-100A/B	0.60	114.24	1,788.7	21,464.4	50,083.6	691.6	345.8	89.0	70.4	24.4	0.5	3.8	8.1	17.1
54-110	0.45	24.55	290.4	3,484.5	8,130.4	112.3	56.1	14.5	11.4	4.0	0.1	0.6	1.3	2.8
54-120	0.46	62.08	745.6	8,947.2	20,876.9	288.3	144.1	37.1	29.3	10.2	0.2	1.6	3.4	7.1
54-130	0.10	1.07	2.8	33.7	78.7	1.1	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
54-140A/B	0.41	113.01	1,211.7	14,540.4	33,927.6	468.5	234.3	60.3	47.7	16.6	0.3	2.6	5.5	11.6
54-150	0.45	55.34	647.8	7,773.1	18,137.2	250.5	125.2	32.2	25.5	8.9	0.2	1.4	2.9	6.2
54-160	0.60	2.62	41.3	495.8	1,156.9	16.0	8.0	2.1	1.6	0.6	0.0	0.1	0.2	0.4
54-170	0.59	8.08	126.3	1,515.4	3,535.8	48.8	24.4	6.3	5.0	1.7	0.0	0.3	0.6	1.2
54-180	0.60	2.82	44.5	533.7	1,245.2	17.2	8.6	2.2	1.7	0.6	0.0	0.1	0.2	0.4
54-190	0.10	2.2	5.8	69.4	161.9	2.2	1.1	0.3	0.2	0.1	0.0	0.0	0.0	0.1
54-200	0.10	2.13	5.6	67.2	156.8	2.2	1.1	0.3	0.2	0.1	0.0	0.0	0.0	0.1
54-210	0.10	1.14	3.0	36.0	83.9	1.2	0.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0
55-010	0.60	14.98	236.2	2,834.9	6,614.7	91.3	45.7	11.8	9.3	3.2	0.1	0.5	1.1	2.3

2005 POLLUTANT LOADINGS BY OUTFALL

2005 POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS PER YEAR (estimated using FLUX)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Mean Flow Weighted Mean Concentration - all 2005 sites			9.00	108	252	3.48	1.740	0.448	0.354	0.123	0.002500	0.019	0.041	0.086
Precipitation (meters)	0.849													
55-020	0.60	189.58	2,970.3	35,643.8	83,169.0	1,148.5	574.3	147.9	116.8	40.6	0.8	6.4	13.5	28.4
56-010	0.60	67.62	1,066.4	12,796.7	29,859.1	412.3	206.2	53.1	41.9	14.6	0.3	2.3	4.8	10.2
57-010	0.53	26.1	366.0	4,391.5	10,246.9	141.5	70.8	18.2	14.4	5.0	0.1	0.8	1.7	3.5
57-020	0.00	142	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-030	0.45	18.22	215.5	2,586.0	6,034.1	83.3	41.7	10.7	8.5	2.9	0.1	0.5	1.0	2.1
57-040	0.35	39.88	365.8	4,389.3	10,241.8	141.4	70.7	18.2	14.4	5.0	0.1	0.8	1.7	3.5
57-050	0.45	7.9	93.4	1,121.3	2,616.3	36.1	18.1	4.7	3.7	1.3	0.0	0.2	0.4	0.9
57-060	0.46	26.11	317.4	3,808.4	8,886.3	122.7	61.4	15.8	12.5	4.3	0.1	0.7	1.4	3.0
57-070	0.45	81.33	964.3	11,571.0	26,999.1	372.8	186.4	48.0	37.9	13.2	0.3	2.1	4.4	9.2
57-080	0.42	5.54	61.6	738.6	1,723.4	23.8	11.9	3.1	2.4	0.8	0.0	0.1	0.3	0.6
57-090	0.47	77.77	959.3	11,511.7	26,860.7	370.9	185.5	47.8	37.7	13.1	0.3	2.1	4.4	9.2
57-100A/B	0.47	313.43	3,891.8	46,701.7	108,970.6	1,504.8	752.4	193.7	153.1	53.2	1.1	8.3	17.7	37.2
57-110	0.54	21.6	307.0	3,684.3	8,596.8	118.7	59.4	15.3	12.1	4.2	0.1	0.7	1.4	2.9
57-120A/B/C	0.00	65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-130	0.10	1.16	3.0	36.6	85.4	1.2	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0
57-140	0.10	1.55	4.1	48.9	114.1	1.6	0.8	0.2	0.2	0.1	0.0	0.0	0.0	0.0
57-150	0.43	35.68	404.8	4,857.2	11,333.4	156.5	78.3	20.1	15.9	5.5	0.1	0.9	1.8	3.9
57-160	0.10	1.89	5.0	59.6	139.1	1.9	1.0	0.2	0.2	0.1	0.0	0.0	0.0	0.0
61-010	0.55	2.86	41.5	497.7	1,161.3	16.0	8.0	2.1	1.6	0.6	0.0	0.1	0.2	0.4
62-010	0.45	27.84	330.8	3,969.7	9,262.6	127.9	64.0	16.5	13.0	4.5	0.1	0.7	1.5	3.2
63-010	0.45	388.79	4,620.3	55,443.6	129,368.4	1,786.5	893.3	230.0	181.7	63.1	1.3	9.9	21.0	44.1
63-020	0.00	11.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64-100	0.45	24.92	294.5	3,533.7	8,245.3	113.9	56.9	14.7	11.6	4.0	0.1	0.6	1.3	2.8
64-110	0.45	6.01	71.1	853.0	1,990.4	27.5	13.7	3.5	2.8	1.0	0.0	0.2	0.3	0.7
64-120	0.45	16.04	189.7	2,276.6	5,312.1	73.4	36.7	9.4	7.5	2.6	0.1	0.4	0.9	1.8
64-130	0.45	2.44	28.9	346.3	808.1	11.2	5.6	1.4	1.1	0.4	0.0	0.1	0.1	0.3
65-010	0.00	18.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65-020	0.53	38.46	534.9	6,419.0	14,977.7	206.8	103.4	26.6	21.0	7.3	0.1	1.1	2.4	5.1
70-010	0.46	6.23	75.1	901.2	2,102.7	29.0	14.5	3.7	3.0	1.0	0.0	0.2	0.3	0.7
70-015	0.45	11.69	138.3	1,659.2	3,871.5	53.5	26.7	6.9	5.4	1.9	0.0	0.3	0.6	1.3
70-020	0.45	37.55	444.1	5,329.6	12,435.8	171.7	85.9	22.1	17.5	6.1	0.1	1.0	2.0	4.2
70-025	0.00	3.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-030	0.45	13.48	159.3	1,911.8	4,460.8	61.6	30.8	7.9	6.3	2.2	0.0	0.3	0.7	1.5
70-035	0.45	4.53	53.6	643.0	1,500.2	20.7	10.4	2.7	2.1	0.7	0.0	0.1	0.2	0.5
70-040	0.45	2.42	28.6	343.5	801.5	11.1	5.5	1.4	1.1	0.4	0.0	0.1	0.1	0.3
70-045	0.00	0.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-050	0.45	17.41	205.9	2,471.1	5,765.8	79.6	39.8	10.3	8.1	2.8	0.1	0.4	0.9	2.0
70-055	0.46	333.43	4,067.4	48,809.4	113,888.5	1,572.7	786.4	202.5	160.0	55.6	1.1	8.7	18.5	38.9
70-060	0.45	3.53	41.8	501.0	1,169.1	16.1	8.1	2.1	1.6	0.6	0.0	0.1	0.2	0.4
70-065	0.45	1.89	22.4	268.3	625.9	8.6	4.3	1.1	0.9	0.3	0.0	0.0	0.1	0.2
70-070	0.45	5.8	68.6	823.2	1,920.8	26.5	13.3	3.4	2.7	0.9	0.0	0.1	0.3	0.7
70-075	0.43	5	56.7	680.3	1,587.4	21.9	11.0	2.8	2.2	0.8	0.0	0.1	0.3	0.5
70-080	0.46	11.96	145.2	1,742.7	4,066.4	56.2	28.1	7.2	5.7	2.0	0.0	0.3	0.7	1.4
70-085	0.45	229.48	2,697.6	32,370.8	75,531.9	1,043.1	521.5	134.3	106.1	36.9	0.7	5.8	12.3	25.8
70-090	0.45	18.57	219.6	2,635.7	6,150.0	84.9	42.5	10.9	8.6	3.0	0.1	0.5	1.0	2.1
70-095	0.45	9.99	118.2	1,417.9	3,308.5	45.7	22.8	5.9	4.6	1.6	0.0	0.3	0.5	1.1
70-100	0.45	9.64	114.0	1,368.2	3,192.6	44.1	22.0	5.7	4.5	1.6	0.0	0.2	0.5	1.1
70-105	0.45	1.63	19.3	231.4	539.8	7.5	3.7	1.0	0.8	0.3	0.0	0.0	0.1	0.2
70-110	0.45	18.13	214.4	2,573.3	6,004.3	82.9	41.5	10.7	8.4	2.9	0.1	0.5	1.0	2.0
70-115	0.45	3.71	43.9	526.6	1,228.7	17.0	8.5	2.2	1.7	0.6	0.0	0.1	0.2	0.4
70-120	0.45	4.22	49.9	599.0	1,397.6	19.3	9.6	2.5	2.0	0.7	0.0	0.1	0.2	0.5
70-125	0.00	5.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-130	0.49	34.29	445.0	5,339.5	12,458.8	172.0	86.0	22.1	17.5	6.1	0.1	1.0	2.0	4.3
70-135	0.45	7.46	88.2	1,058.8	2,470.6	34.1	17.1	4.4	3.5	1.2	0.0	0.2	0.4	0.8
70-140	0.60	0.78	12.3	147.6	344.4	4.8	2.4	0.6	0.5	0.2	0.0	0.0	0.1	0.1
70-145	0.60	9.19	144.9	1,739.2	4,058.0	56.0	28.0	7.2	5.7	2.0	0.0	0.3	0.7	1.4
70-150	0.45	4.51	53.3	640.1	1,493.6	20.6	10.3	2.7	2.1	0.7	0.0	0.1	0.2	0.5
70-155	0.45	2.05	24.2	291.0	678.9	9.4	4.7	1.2	1.0	0.3	0.0	0.1	0.1	0.2
70-160	0.45	2.95	34.9	418.7	977.0	13.5	6.7	1.7	1.4	0.5	0.0	0.1	0.2	0.3
70-165	0.45	27.77	328.5	3,941.5	9,196.8	127.0	63.5	16.3	12.9	4.5	0.1	0.7	1.5	3.1
70-170	0.45	23.74	280.8	3,369.5	7,862.2	108.6	54.3	14.0	11.0	3.8	0.1	0.6	1.3	2.7
70-175	0.46	30.89	371.2	4,454.7	10,394.2	143.5	71.8	18.5	14.6	5.1	0.1	0.8	1.7	3.5
70-180	0.45	1.14	13.5	161.8	377.5	5.2	2.6	0.7	0.5	0.2	0.0	0.0	0.1	0.1
70-185	0.45	1.53	18.1	217.2	506.7	7.0	3.5	0.9	0.7	0.2	0.0	0.0	0.1	0.2
70-190	0.17	15.04	68.0	816.4	1,904.9	26.3	13.2	3.4	2.7	0.9	0.0	0.1	0.3	0.7
70-195	0.45	46.02	547.3	6,567.4	15,324.0	211.6	105.8	27.2	21.5	7.5	0.2	1.2	2.5	5.2
70-200	0.45	31.52	372.8	4,473.7	10,438.7	144.2	72.1	18.6	14.7	5.1	0.1	0.8	1.7	3.6
70-205	0.45	1.39	16.4	197.3	460.3	6.4	3.2	0.8	0.6	0.2	0.0	0.0	0.1	0.2
70-210	0.45	3.58	42.3	508.1	1,185.6	16.4	8.2	2.1	1.7	0.6	0.0	0.1	0.2	0.4
70-215	0.45	5.93	70.1	841.7	1,963.9	27.1	13.6	3.5	2.8	1.0	0.0	0.2	0.3	0.7
70-220	0.45	4.54	53.7	644.4	1,503.6	20.8	10.4	2.7	2.1	0.7	0.0	0.1	0.2	0.5
70-225	0.45	4.99	59.0	708.2	1,652.6	22.8	11.4	2.9	2.3	0.8	0.0	0.1	0.3	0.6
70-230	0.45	4.72	55.8	669.9	1,563.2	21.6	10.8	2.8	2.2	0.8	0.0	0.1	0.3	0.5
70-235	0.45	5.04	59.6	715.3	1,669.1	23.1	11.5	3.0	2.3	0.8	0.0	0.1	0.3	0.6
70-240	0.45	4.52	53.5	641.5	1,496.9	20.7	10.3	2.7	2.1	0.7	0.0	0.1	0.2	0.5
70-245	0.44	9.98	115.1	1,381.8	3,224.2	44.5	22.3	5.7	4.5	1.6	0.0	0.2	0.5	1.1
70-250	0.48	41.27	523.2	6,278.8	14,650.4	202.3	101.2	26.0	20.6	7.2	0.1	1.1	2.4	5.0
70-255	0.45	45.37	536.8	6,441.5	15,030.1	207.6	103.8	26.7	21.1	7.3	0.1	1.2	2.4	5.1
70-260	0.46	24.9	299.6	3,595.1	8,388.5	115.8	57.9	14.9	11.8	4.1	0.1	0.6	1.4	2.9

2005 POLLUTANT LOADINGS BY OUTFALL

2005 POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS PER YEAR (estimated using FLUX)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Mean Flow Weighted Mean Concentration - all 2005 sites			9.00	108	252	3.48	1.740	0.448	0.354	0.123	0.002500	0.019	0.041	0.086
Precipitation (meters)	0.849													
70-265A/B	0.00	183.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-270	0.45	4.66	55.1	661.4	1,543.3	21.3	10.7	2.7	2.2	0.8	0.0	0.1	0.3	0.5
70-275	0.45	4.28	50.6	607.5	1,417.4	19.6	9.8	2.5	2.0	0.7	0.0	0.1	0.2	0.5
70-280	0.45	9.39	111.3	1,335.0	3,115.1	43.0	21.5	5.5	4.4	1.5	0.0	0.2	0.5	1.1
70-285	0.45	19.03	224.8	2,698.1	6,295.5	86.9	43.5	11.2	8.8	3.1	0.1	0.5	1.0	2.1
70-290	0.45	2.37	27.8	333.5	778.2	10.7	5.4	1.4	1.1	0.4	0.0	0.1	0.1	0.3
70-295	0.45	7.18	84.9	1,019.1	2,377.9	32.8	16.4	4.2	3.3	1.2	0.0	0.2	0.4	0.8
70-300	0.10	0.4	1.1	12.6	29.4	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
70-305	0.45	12.68	148.6	1,783.5	4,161.6	57.5	28.7	7.4	5.8	2.0	0.0	0.3	0.7	1.4
70-310	0.00	5.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-315	0.30	5.79	45.7	547.8	1,278.3	17.7	8.8	2.3	1.8	0.6	0.0	0.1	0.2	0.4
70-320	0.44	2.32	26.8	321.4	749.8	10.4	5.2	1.3	1.1	0.4	0.0	0.1	0.1	0.3
70-325	0.00	2.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-330	0.47	279.41	3,459.4	41,512.3	96,862.1	1,337.6	668.8	172.2	136.1	47.3	1.0	7.4	15.7	33.1
70-335	0.45	1.99	23.5	282.4	659.0	9.1	4.6	1.2	0.9	0.3	0.0	0.1	0.1	0.2
70-340	0.39	22.25	230.1	2,761.0	6,442.3	89.0	44.5	11.5	9.0	3.1	0.1	0.5	1.0	2.2
70-345	0.45	3.81	45.1	540.8	1,261.8	17.4	8.7	2.2	1.8	0.6	0.0	0.1	0.2	0.4
70-350	0.49	314.4	4,083.3	48,999.1	114,331.2	1,578.9	789.4	203.3	160.6	55.8	1.1	8.8	18.6	39.0
70-355	0.45	1.29	15.3	183.1	427.2	5.9	2.9	0.8	0.6	0.2	0.0	0.0	0.1	0.1
70-360	0.45	131.96	1,576.4	18,917.3	44,140.3	609.6	304.8	78.5	62.0	21.5	0.4	3.4	7.2	15.1
70-365	0.45	6.7	79.2	951.0	2,218.9	30.6	15.3	3.9	3.1	1.1	0.0	0.2	0.4	0.8
70-370	0.44	3.75	43.7	523.9	1,222.5	16.9	8.4	2.2	1.7	0.6	0.0	0.1	0.2	0.4
70-375	0.47	7.1	88.2	1,058.4	2,469.6	34.1	17.1	4.4	3.5	1.2	0.0	0.2	0.4	0.8
70-380	0.45	14.4	170.3	2,043.8	4,769.0	65.9	32.9	8.5	6.7	2.3	0.0	0.4	0.8	1.6
70-385	0.45	14.97	177.1	2,124.7	4,957.7	68.5	34.2	8.8	7.0	2.4	0.0	0.4	0.8	1.7
70-390	0.46	58.11	707.5	8,490.3	19,810.8	273.6	136.8	35.2	27.8	9.7	0.2	1.5	3.2	6.8
70-395	0.43	57.19	645.7	7,747.9	18,078.3	249.7	124.8	32.1	25.4	8.8	0.2	1.4	2.9	6.2
70-400	0.44	9.67	111.5	1,338.4	3,123.0	43.1	21.6	5.6	4.4	1.5	0.0	0.2	0.5	1.1
70-405	0.25	7.16	47.1	564.8	1,317.8	18.2	9.1	2.3	1.9	0.6	0.0	0.1	0.2	0.4
70-410	0.43	5.8	65.4	784.5	1,830.6	25.3	12.6	3.3	2.6	0.9	0.0	0.1	0.3	0.6
70-415	0.45	120.75	1,440.8	17,289.3	40,341.7	557.1	278.5	71.7	56.7	19.7	0.4	3.1	6.5	13.8
70-420	0.45	16.99	201.0	2,411.5	5,626.7	77.7	38.9	10.0	7.9	2.7	0.1	0.4	0.9	1.9
70-425	0.51	20.63	277.1	3,324.9	7,758.2	107.1	53.6	13.8	10.9	3.8	0.1	0.6	1.3	2.6
70-430	0.10	6.19	16.3	195.2	455.6	6.3	3.1	0.8	0.6	0.2	0.0	0.0	0.1	0.2
70-435	0.10	9.16	24.1	288.9	674.1	9.3	4.7	1.2	0.9	0.3	0.0	0.1	0.1	0.2
70-440	0.50	34.48	450.2	5,401.9	12,604.3	174.1	87.0	22.4	17.7	6.2	0.1	1.0	2.0	4.3
70-445	0.45	5.6	66.2	794.8	1,854.6	25.6	12.8	3.3	2.6	0.9	0.0	0.1	0.3	0.6
70-450	0.45	2.65	31.3	376.1	877.6	12.1	6.1	1.6	1.2	0.4	0.0	0.1	0.1	0.3
70-455	0.00	2.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-460	0.45	2.67	31.6	379.0	884.2	12.2	6.1	1.6	1.2	0.4	0.0	0.1	0.1	0.3
70-465	0.45	2.58	30.5	366.2	854.4	11.8	5.9	1.5	1.2	0.4	0.0	0.1	0.1	0.3
70-470	0.38	8.55	86.3	1,035.7	2,416.7	33.4	16.7	4.3	3.4	1.2	0.0	0.2	0.4	0.8
70-475	0.46	229.14	2,772.4	33,269.3	77,628.3	1,072.0	536.0	138.0	109.0	37.9	0.8	5.9	12.6	26.5
70-480	0.60	0.31	4.9	58.7	136.9	1.9	0.9	0.2	0.2	0.1	0.0	0.0	0.0	0.0
70-485	0.45	13.36	158.0	1,896.2	4,424.5	61.1	30.6	7.9	6.2	2.2	0.0	0.3	0.7	1.5
70-490	0.47	48.75	601.4	7,217.0	16,839.7	232.5	116.3	29.9	23.7	8.2	0.2	1.3	2.7	5.7
70-495	0.45	7.74	91.5	1,098.6	2,563.3	35.4	17.7	4.6	3.6	1.3	0.0	0.2	0.4	0.9
70-500	0.45	0.56	6.6	79.5	185.5	2.6	1.3	0.3	0.3	0.1	0.0	0.0	0.0	0.1
70-505	0.41	8.12	87.9	1,054.3	2,459.9	34.0	17.0	4.4	3.5	1.2	0.0	0.2	0.4	0.8
70-510	0.45	41.82	496.3	5,955.1	13,895.1	191.9	95.9	24.7	19.5	6.8	0.1	1.1	2.3	4.7
70-515	0.47	62.73	774.8	9,297.7	21,694.7	299.6	149.8	38.6	30.5	10.6	0.2	1.7	3.5	7.4
70-520	0.45	6.05	71.6	858.7	2,003.6	27.7	13.8	3.6	2.8	1.0	0.0	0.2	0.3	0.7
70-525	0.45	6.23	73.7	884.2	2,063.2	28.5	14.2	3.7	2.9	1.0	0.0	0.2	0.3	0.7
70-530	0.45	1.67	19.8	237.0	553.1	7.6	3.8	1.0	0.8	0.3	0.0	0.0	0.1	0.2
70-535	0.45	30.24	358.5	4,302.0	10,038.1	138.6	69.3	17.8	14.1	4.9	0.1	0.8	1.6	3.4
70-540	0.21	5.1	28.6	343.4	801.2	11.1	5.5	1.4	1.1	0.4	0.0	0.1	0.1	0.3
70-545	0.45	1.89	22.4	268.3	625.9	8.6	4.3	1.1	0.9	0.3	0.0	0.0	0.1	0.2
70-550	0.26	1.3	8.8	106.1	247.7	3.4	1.7	0.4	0.3	0.1	0.0	0.0	0.0	0.1
70-555	0.45	1.73	20.5	245.5	572.9	7.9	4.0	1.0	0.8	0.3	0.0	0.0	0.1	0.2
70-560	0.45	3.33	39.4	472.6	1,102.8	15.2	7.6	2.0	1.5	0.5	0.0	0.1	0.2	0.4
70-565	0.24	16.63	105.1	1,261.8	2,944.1	40.7	20.3	5.2	4.1	1.4	0.0	0.2	0.5	1.0
70-570	0.45	1.23	14.5	174.6	407.3	5.6	2.8	0.7	0.6	0.2	0.0	0.0	0.1	0.1
70-575	0.45	15.39	181.8	2,182.2	5,091.7	70.3	35.2	9.1	7.2	2.5	0.1	0.4	0.8	1.7
70-580	0.43	119.93	1,367.4	16,409.1	38,288.0	528.7	264.4	68.1	53.8	18.7	0.4	2.9	6.2	13.1
71-010	0.10	1.12	2.9	35.3	82.4	1.1	0.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0
71-020	0.45	14.05	166.2	1,994.2	4,653.1	64.3	32.1	8.3	6.5	2.3	0.0	0.4	0.8	1.6
71-030	0.45	28.58	339.9	4,078.6	9,516.8	131.4	65.7	16.9	13.4	4.6	0.1	0.7	1.5	3.2
71-040	0.22	20.93	120.7	1,449.0	3,380.9	46.7	23.3	6.0	4.7	1.7	0.0	0.3	0.5	1.2
71-050	0.46	120.42	1,449.6	17,395.3	40,589.1	560.5	280.3	72.2	57.0	19.8	0.4	3.1	6.6	13.9
71-060	0.45	3.11	36.8	441.4	1,030.0	14.2	7.1	1.8	1.4	0.5	0.0	0.1	0.2	0.4
71-070	0.00	386.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71-080	0.46	101.79	1,220.8	14,649.0	34,181.1	472.0	236.0	60.8	48.0	16.7	0.3	2.6	5.5	11.7
71-090	0.45	6.5	76.1	913.5	2,131.4	29.4	14.7	3.8	3.0	1.0	0.0	0.2	0.3	0.7
71-100	0.10	1.99	5.2	62.8	146.5	2.0	1.0	0.3	0.2	0.1	0.0	0.0	0.0	0.0
72-010	0.18	17.32	79.7	956.5	2,231.9	30.8	15.4	4.0	3.1	1.1	0.0	0.2	0.4	0.8
72-020	0.40	24.7	256.5	3,078.3	7,182.8	99.2	49.6	12.8	10.1	3.5	0.1	0.6	1.2	2.5
72-030	0.10	5.25	13.8	165.6	386.4	5.3	2.7	0.7	0.5	0.2	0.0	0.0	0.1	0.1
72-040	0.42	166.54	1,823.3	21,879.8	51,052.8	705.0	352.5	90.8	71.7	24.9	0.5	3.9	8.3	17.4
72-050	0.10	5.16	13.6	162.8	379.8	5.2	2.6	0.7	0.5	0.2	0.0	0.0	0.1	0.1

2005 POLLUTANT LOADINGS BY OUTFALL

2005 POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS PER YEAR (estimated using FLUX)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Mean Flow Weighted Mean Concentration - all 2005 sites			9.00	108	252	3.48	1.740	0.448	0.354	0.123	0.002500	0.019	0.041	0.086
Precipitation (meters)	**0.849**													
72-060	0.36	113.04	1,074.7	12,896.7	30,092.2	415.6	207.8	53.5	42.3	14.7	0.3	2.3	4.9	10.3
72-070	0.10	2.21	5.8	69.7	162.6	2.2	1.1	0.3	0.2	0.1	0.0	0.0	0.0	0.1
72-080	0.60	4.74	74.8	897.0	2,093.0	28.9	14.5	3.7	2.9	1.0	0.0	0.2	0.3	0.7
72-090	0.45	68.71	807.6	9,690.9	22,612.2	312.3	156.1	40.2	31.8	11.0	0.2	1.7	3.7	7.7
72-100	0.46	68.32	831.4	9,977.1	23,280.0	321.5	160.7	41.4	32.7	11.4	0.2	1.8	3.8	7.9
72-110	0.10	3.22	8.5	101.6	237.0	3.3	1.6	0.4	0.3	0.1	0.0	0.0	0.0	0.1
72-120	0.45	62.98	744.9	8,939.0	20,857.6	288.0	144.0	37.1	29.3	10.2	0.2	1.6	3.4	7.1
72-130	0.46	58.06	696.4	8,356.6	19,498.7	269.3	134.6	34.7	27.4	9.5	0.2	1.5	3.2	6.7
72-140	0.10	10.19	26.8	321.4	749.9	10.4	5.2	1.3	1.1	0.4	0.0	0.1	0.1	0.3
72-150	0.10	4.76	12.5	150.1	350.3	4.8	2.4	0.6	0.5	0.2	0.0	0.0	0.1	0.1
72-160	0.10	4.55	12.0	143.5	334.9	4.6	2.3	0.6	0.5	0.2	0.0	0.0	0.1	0.1
73-010	0.44	20.76	239.5	2,873.8	6,705.4	92.6	46.3	11.9	9.4	3.3	0.1	0.5	1.1	2.3
73-020	0.44	57.47	668.5	8,022.4	18,719.0	258.5	129.3	33.3	26.3	9.1	0.2	1.4	3.0	6.4
73-030	0.10	21.56	56.7	680.0	1,586.7	21.9	11.0	2.8	2.2	0.8	0.0	0.1	0.3	0.5
74-010	0.48	44.39	558.5	6,701.8	15,637.5	215.9	108.0	27.8	22.0	7.6	0.2	1.2	2.5	5.3
74-020	0.45	4.41	52.2	625.9	1,460.5	20.2	10.1	2.6	2.1	0.7	0.0	0.1	0.2	0.5
75-005	0.45	12.39	146.4	1,756.4	4,098.4	56.6	28.3	7.3	5.8	2.0	0.0	0.3	0.7	1.4
75-010	0.60	3.65	57.6	690.7	1,611.7	22.3	11.1	2.9	2.3	0.8	0.0	0.1	0.3	0.6
75-020	0.45	1.53	18.1	217.2	506.7	7.0	3.5	0.9	0.7	0.2	0.0	0.0	0.1	0.2
75-030	0.45	8.38	99.1	1,189.4	2,775.3	38.3	19.2	4.9	3.9	1.4	0.0	0.2	0.5	0.9
75-040	0.45	14.74	174.3	2,092.1	4,881.6	67.4	33.7	8.7	6.9	2.4	0.0	0.4	0.8	1.7
76-010	0.46	907.31	11,061.5	132,738.4	309,723.0	4,277.1	2,138.6	550.6	435.1	151.2	3.1	23.7	50.3	105.7
76-020	0.46	88.62	1,061.4	12,736.8	29,719.2	410.4	205.2	52.8	41.7	14.5	0.3	2.3	4.8	10.1
76-030	0.45	7.55	89.3	1,071.6	2,500.4	34.5	17.3	4.4	3.5	1.2	0.0	0.2	0.4	0.9
76-040	0.19	4.67	22.8	274.2	639.7	8.8	4.4	1.1	0.9	0.3	0.0	0.0	0.1	0.2
76-050	0.00	2.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81-010	0.10	31.17	81.9	983.1	2,294.0	31.7	15.8	4.1	3.2	1.1	0.0	0.2	0.4	0.8
82-010	0.49	23.53	300.9	3,611.1	8,426.0	116.4	58.2	15.0	11.8	4.1	0.1	0.6	1.4	2.9
82-020	0.45	73.45	878.0	10,536.6	24,585.3	339.5	169.8	43.7	34.5	12.0	0.2	1.9	4.0	8.4
82-030	0.45	90.04	1,076.1	12,913.2	30,130.8	416.1	208.0	53.6	42.3	14.7	0.3	2.3	4.9	10.3
82-040	0.46	98.49	1,200.9	14,411.0	33,625.7	464.4	232.2	59.8	47.2	16.4	0.3	2.6	5.5	11.5
83-010	0.45	6.59	77.9	935.3	2,182.5	30.1	15.1	3.9	3.1	1.1	0.0	0.2	0.4	0.7
83-015	0.45	0.99	11.7	140.5	327.9	4.5	2.3	0.6	0.5	0.2	0.0	0.0	0.1	0.1
83-020	0.43	85.96	982.3	11,787.8	27,504.9	379.8	189.9	48.9	38.6	13.4	0.3	2.1	4.5	9.4
83-025	0.45	51.23	605.9	7,271.3	16,966.3	234.3	117.1	30.2	23.8	8.3	0.2	1.3	2.8	5.8
83-030	0.60	0.82	12.9	155.2	362.1	5.0	2.5	0.6	0.5	0.2	0.0	0.0	0.1	0.1
83-040	0.10	1.08	2.8	34.1	79.5	1.1	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
83-050	0.45	40.4	479.1	5,749.8	13,416.2	185.3	92.6	23.9	18.8	6.5	0.1	1.0	2.2	4.6
83-060	0.45	10.05	118.9	1,426.4	3,328.3	46.0	23.0	5.9	4.7	1.6	0.0	0.3	0.5	1.1
83-070	0.10	1.19	3.1	37.5	87.6	1.2	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0
83-080	0.48	178.63	2,232.2	26,786.9	62,502.8	863.1	431.6	111.1	87.8	30.5	0.6	4.8	10.1	21.3
83-090	0.41	9.16	98.7	1,183.9	2,762.5	38.1	19.1	4.9	3.9	1.3	0.0	0.2	0.4	0.9
84-010	0.47	21.56	266.5	3,198.4	7,462.9	103.1	51.5	13.3	10.5	3.6	0.1	0.6	1.2	2.5
85-010	0.10	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ANNUAL SUMMATION (kg)			**355,039.90**	**4,260,478.84**	**9,941,117.30**	**137,282.10**	**68,641.05**	**17,673.10**	**13,964.90**	**4,852.21**	**98.62**	**761.36**	**1,613.46**	**3,392.60**

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/05 - 03/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Winter/snowmelt Median Event Mean Concentration			23.0	200	1820	7.78	7.420	0.914	1.010	0.417	0.002500	0.050	0.035	0.226
Precipitation (meters)	0.09													
10-010	0.43	113.55	348.8	3,033.2	27,602.1	118.0	112.5	13.9	15.3	6.3	0.0	0.8	0.5	3.4
10-020	0.45	7.81	25.0	217.6	1,980.2	8.5	8.1	1.0	1.1	0.5	0.0	0.1	0.0	0.2
10-030	0.10	4.05	2.9	25.1	228.2	1.0	0.9	0.1	0.1	0.1	0.0	0.0	0.0	0.0
10-040	0.45	167.42	532.7	4,632.4	42,155.1	180.2	171.9	21.2	23.4	9.7	0.1	1.2	0.8	5.2
10-050	0.46	114.18	370.1	3,218.2	29,285.5	125.2	119.4	14.7	16.3	6.7	0.0	0.8	0.6	3.6
10-060	0.60	10.5	44.9	390.1	3,549.7	15.2	14.5	1.8	2.0	0.8	0.0	0.1	0.1	0.4
10-070	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-080	0.38	30.66	83.4	725.5	6,601.6	28.2	26.9	3.3	3.7	1.5	0.0	0.2	0.1	0.8
10-090A	0.00	0.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-090B	0.00	1.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-090C	0.54	12.77	49.2	428.2	3,896.4	16.7	15.9	2.0	2.2	0.9	0.0	0.1	0.1	0.5
10-090D	0.00	4.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-100	0.36	1392.1	3,595.5	31,264.9	284,510.8	1,216.2	1,159.9	142.9	157.9	65.2	0.4	7.8	5.4	35.3
10-110	0.47	300.11	997.0	8,669.2	78,889.6	337.2	321.6	39.6	43.8	18.1	0.1	2.2	1.5	9.8
10-120A/B	0.44	372.78	1,155.3	10,046.5	91,422.8	390.8	372.7	45.9	50.7	20.9	0.1	2.5	1.7	11.4
10-130	0.45	336.46	1,081.7	9,406.4	85,598.5	365.9	349.0	43.0	47.5	19.6	0.1	2.3	1.6	10.6
10-140a	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-140a,b	0.58	220.65	904.1	7,861.6	71,540.5	305.8	291.7	35.9	39.7	16.4	0.1	2.0	1.4	8.9
10-150	0.47	157.15	524.7	4,562.3	41,517.0	177.5	169.3	20.8	23.0	9.5	0.1	1.1	0.8	5.2
10-160	0.00	17	0.3	2.6	23.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-170	0.50	176.01	630.7	5,484.2	49,906.2	213.3	203.5	25.1	27.7	11.4	0.1	1.4	1.0	6.2
10-180	0.45	284.26	901.4	7,837.9	71,324.5	304.9	290.8	35.8	39.6	16.3	0.1	2.0	1.4	8.9
10-190	0.59	14.58	61.4	534.2	4,861.2	20.8	19.8	2.4	2.7	1.1	0.0	0.1	0.1	0.6
10-200	0.40	42.44	120.0	1,043.3	9,494.3	40.6	38.7	4.8	5.3	2.2	0.0	0.3	0.2	1.2
10-210	0.49	98.32	344.1	2,992.6	27,232.5	116.4	111.0	13.7	15.1	6.2	0.0	0.7	0.5	3.4
10-220	0.56	18.83	75.0	651.8	5,931.7	25.4	24.2	3.0	3.3	1.4	0.0	0.2	0.1	0.7
10-230	0.47	235.02	791.1	6,878.7	62,596.1	267.6	255.2	31.4	34.7	14.3	0.1	1.7	1.2	7.8
10-240	0.51	103.83	379.8	3,302.6	30,053.6	128.5	122.5	15.1	16.7	6.9	0.0	0.8	0.6	3.7
10-250	0.49	242.96	845.7	7,354.0	66,921.8	286.1	272.8	33.6	37.1	15.3	0.1	1.8	1.3	8.3
10-260	0.56	23.77	94.3	820.0	7,462.0	31.9	30.4	3.7	4.1	1.7	0.0	0.2	0.1	0.9
10-270	0.47	72.45	244.5	2,125.7	19,343.6	82.7	78.9	9.7	10.7	4.4	0.0	0.5	0.4	2.4
10-280	0.44	55.08	174.1	1,513.6	13,773.9	58.9	56.2	6.9	7.6	3.2	0.0	0.4	0.3	1.7
10-290	0.10	6.83	4.9	42.3	384.8	1.6	1.6	0.2	0.2	0.1	0.0	0.0	0.0	0.0
10-300	0.36	17.74	45.5	396.1	3,604.3	15.4	14.7	1.8	2.0	0.8	0.0	0.1	0.1	0.4
10-310	0.47	60.29	202.7	1,762.8	16,041.8	68.6	65.4	8.1	8.9	3.7	0.0	0.4	0.3	2.0
10-320	0.45	341.99	1,100.1	9,566.3	87,053.2	372.1	354.9	43.7	48.3	19.9	0.1	2.4	1.7	10.8
10-330	0.35	21.61	54.1	470.4	4,280.8	18.3	17.5	2.1	2.4	1.0	0.0	0.1	0.1	0.5
10-340	0.45	20.74	66.6	579.4	5,272.8	22.5	21.5	2.6	2.9	1.2	0.0	0.1	0.1	0.7
10-350	0.60	28.16	120.1	1,044.2	9,502.6	40.6	38.7	4.8	5.3	2.2	0.0	0.3	0.2	1.2
10-360	0.59	29.02	122.5	1,064.9	9,690.9	41.4	39.5	4.9	5.4	2.2	0.0	0.3	0.2	1.2
10-370	0.59	14.46	60.7	527.9	4,803.5	20.5	19.6	2.4	2.7	1.1	0.0	0.1	0.1	0.6
10-380	0.45	14.38	45.6	396.4	3,607.0	15.4	14.7	1.8	2.0	0.8	0.0	0.1	0.1	0.4
10-390	0.49	41.97	147.4	1,281.3	11,660.0	49.8	47.5	5.9	6.5	2.7	0.0	0.3	0.2	1.4
10-400A	0.10	1.07	0.8	6.6	60.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-400B	0.47	17.66	59.3	515.7	4,692.6	20.1	19.1	2.4	2.6	1.1	0.0	0.1	0.1	0.6
10-400C	0.57	50.25	202.4	1,760.4	16,019.3	68.5	65.3	8.0	8.9	3.7	0.0	0.4	0.3	2.0
10-410A	0.50	46.22	163.8	1,424.7	12,964.9	55.4	52.9	6.5	7.2	3.0	0.0	0.4	0.2	1.6
10-410B	0.32	21.29	48.0	417.1	3,795.5	16.2	15.5	1.9	2.1	0.9	0.0	0.1	0.1	0.5
10-410C	0.53	22.8	85.7	745.1	6,780.5	29.0	27.6	3.4	3.8	1.6	0.0	0.2	0.1	0.8
10-410D	0.60	27.34	116.9	1,016.1	9,246.5	39.5	37.7	4.6	5.1	2.1	0.0	0.3	0.2	1.1
10-410E	0.58	256.04	1,049.1	9,122.5	83,014.8	354.9	338.4	41.7	46.1	19.0	0.1	2.3	1.6	10.3
10-410F	0.59	37.92	158.8	1,381.1	12,568.0	53.7	51.2	6.3	7.0	2.9	0.0	0.3	0.2	1.6
10-420A	0.27	23.05	44.7	388.9	3,539.2	15.1	14.4	1.8	2.0	0.8	0.0	0.1	0.1	0.4
10-420B	0.00	10.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420C	0.00	7.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420D	0.00	20.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420E	0.59	127.89	534.4	4,646.9	42,286.7	180.8	172.4	21.2	23.5	9.7	0.1	1.2	0.8	5.3
10-430A	0.00	8.14	0.1	1.3	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430B	0.53	54.72	208.2	1,810.4	16,474.7	70.4	67.2	8.3	9.1	3.8	0.0	0.5	0.3	2.0
10-430C	0.48	44.83	153.3	1,333.5	12,134.5	51.9	49.5	6.1	6.7	2.8	0.0	0.3	0.2	1.5
10-430D	0.49	85.79	300.3	2,611.4	23,763.4	101.6	96.9	11.9	13.2	5.4	0.0	0.7	0.5	3.0
10-430E	0.56	86.66	344.1	2,992.0	27,227.1	116.4	111.0	13.7	15.1	6.2	0.0	0.7	0.5	3.4
10-430F	0.10	377.97	269.1	2,340.3	21,296.7	91.0	86.8	10.7	11.8	4.9	0.0	0.6	0.4	2.6
10-430G	0.50	125.89	444.2	3,863.0	35,153.2	150.3	143.3	17.7	19.5	8.1	0.0	1.0	0.7	4.4
10-430H	0.49	33.18	116.1	1,009.5	9,186.5	39.3	37.5	4.6	5.1	2.1	0.0	0.3	0.2	1.1
10-430I	0.59	32.61	136.7	1,188.5	10,815.4	46.2	44.1	5.4	6.0	2.5	0.0	0.3	0.2	1.3
10-430J	0.43	532.36	1,645.0	14,304.1	130,167.1	556.4	530.7	65.4	72.2	29.8	0.2	3.6	2.5	16.2
10-430K	0.48	337.06	1,146.4	9,968.6	90,714.1	387.8	369.8	45.6	50.3	20.8	0.1	2.5	1.7	11.3
10-430L	0.45	84.4	270.9	2,355.6	21,435.7	91.6	87.4	10.8	11.9	4.9	0.0	0.6	0.4	2.7
10-430M	0.54	75.94	293.3	2,550.3	23,207.7	99.2	94.6	11.7	12.9	5.3	0.0	0.6	0.4	2.9
10-430N	0.44	26.43	83.5	726.5	6,610.8	28.3	27.0	3.3	3.7	1.5	0.0	0.2	0.1	0.8
10-430O	0.00	109.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430P	0.00	229.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430Q	0.10	8.03	5.7	49.7	452.5	1.9	1.8	0.2	0.3	0.1	0.0	0.0	0.0	0.1
10-430R	0.47	150.32	500.4	4,351.0	39,593.7	169.3	161.4	19.9	22.0	9.1	0.1	1.1	0.8	4.9
10-430S	0.10	5.15	3.7	31.9	290.2	1.2	1.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0
10-430T	0.46	262.47	854.3	7,428.9	67,602.9	289.0	275.6	34.0	37.5	15.5	0.1	1.8	1.3	8.4
10-430U	0.47	431.37	1,443.2	12,549.5	114,200.8	488.2	465.6	57.4	63.4	26.2	0.2	3.1	2.2	14.2
10-430V	0.46	329.11	1,089.3	9,472.3	86,197.7	368.5	351.4	43.3	47.8	19.7	0.1	2.4	1.6	10.7
10-440A	0.46	23.18	75.6	657.5	5,983.5	25.6	24.4	3.0	3.3	1.4	0.0	0.2	0.1	0.7
10-440B	0.49	34.23	120.1	1,044.5	9,504.6	40.6	38.7	4.8	5.3	2.2	0.0	0.3	0.2	1.2
10-440C/D	0.00	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-440E	0.51	831.25	3,043.7	26,467.2	240,851.3	1,029.6	981.9	121.0	133.7	55.2	0.3	6.6	4.6	29.9
10-440F	0.46	538.85	1,765.8	15,355.0	139,730.4	597.3	569.7	70.2	77.5	32.0	0.2	3.8	2.7	17.4
10-450A	0.00	343.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-450B	0.52	3.41	12.5	109.1	992.7	4.2	4.0	0.5	0.6	0.2	0.0	0.0	0.0	0.1

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/05 - 03/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Winter/snowmelt Median Event Mean Concentration			23.0	200	1820	7.78	7.420	0.914	1.010	0.417	0.002500	0.050	0.035	0.226
Precipitation (meters)	0.09													
10-450C	0.59	55.64	235.3	2,045.8	18,617.2	79.6	75.9	9.3	10.3	4.3	0.0	0.5	0.4	2.3
10-450D	0.45	4.62	14.8	128.7	1,171.4	5.0	4.8	0.6	0.7	0.3	0.0	0.0	0.0	0.1
10-450E	0.44	3.2	10.1	87.6	796.9	3.4	3.2	0.4	0.4	0.2	0.0	0.0	0.0	0.1
10-450F	0.46	158.55	518.7	4,510.2	41,042.9	175.4	167.3	20.6	22.8	9.4	0.1	1.1	0.8	5.1
10-450G/H	0.48	75.02	256.7	2,231.9	20,310.4	86.8	82.8	10.2	11.3	4.7	0.0	0.6	0.4	2.5
10-450I	0.49	243.64	852.2	7,410.4	67,434.7	288.3	274.9	33.9	37.4	15.5	0.1	1.8	1.3	8.4
10-450J	0.49	17.16	59.3	515.8	4,694.0	20.1	19.1	2.4	2.6	1.1	0.0	0.1	0.1	0.6
10-450K	0.58	37.01	152.7	1,327.4	12,079.6	51.6	49.2	6.1	6.7	2.8	0.0	0.3	0.2	1.5
10-450L	0.51	213.41	767.5	6,673.8	60,731.5	259.6	247.6	30.5	33.7	13.9	0.1	1.7	1.2	7.5
10-460	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460A	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460B	0.52	7.29	26.8	233.3	2,122.7	9.1	8.7	1.1	1.2	0.5	0.0	0.1	0.0	0.3
10-460C/D/F	0.00	159.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460E	0.49	231.41	813.7	7,076.0	64,391.2	275.3	262.5	32.3	35.7	14.8	0.1	1.8	1.2	8.0
10-460F	0.49	14.75	52.0	451.8	4,111.5	17.6	16.8	2.1	2.3	0.9	0.0	0.1	0.1	0.5
10-460G	0.51	79.66	289.7	2,519.5	22,927.1	98.0	93.5	11.5	12.7	5.3	0.0	0.6	0.4	2.8
10-460H	0.48	12.35	42.2	366.6	3,336.0	14.3	13.6	1.7	1.9	0.8	0.0	0.1	0.1	0.4
10-460I	0.00	72.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460J	0.46	5.36	17.7	153.9	1,400.4	6.0	5.7	0.7	0.8	0.3	0.0	0.0	0.0	0.2
10-460K	0.36	5.48	14.0	122.1	1,110.7	4.7	4.5	0.6	0.6	0.3	0.0	0.0	0.0	0.1
10-460L	0.46	3.5	11.5	100.4	913.9	3.9	3.7	0.5	0.5	0.2	0.0	0.0	0.0	0.1
10-460M	0.48	9.55	32.5	283.0	2,575.3	11.0	10.5	1.3	1.4	0.6	0.0	0.1	0.0	0.3
10-460N	0.45	3.85	12.3	107.3	976.2	4.2	4.0	0.5	0.5	0.2	0.0	0.0	0.0	0.1
10-460O	0.45	4.15	13.4	116.6	1,060.9	4.5	4.3	0.5	0.6	0.2	0.0	0.0	0.0	0.1
10-460P	0.45	4.34	13.9	120.9	1,100.4	4.7	4.5	0.6	0.6	0.3	0.0	0.0	0.0	0.1
10-460Q	0.56	19.73	79.3	689.2	6,271.7	26.8	25.6	3.1	3.5	1.4	0.0	0.2	0.1	0.8
10-460R	0.00	51.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460S	0.56	233.54	938.4	8,159.9	74,254.9	317.4	302.7	37.3	41.2	17.0	0.1	2.0	1.4	9.2
10-465	0.10	8.56	6.1	53.0	482.3	2.1	2.0	0.2	0.3	0.1	0.0	0.0	0.0	0.1
10-470	0.38	25.6	69.6	604.9	5,504.9	23.5	22.4	2.8	3.1	1.3	0.0	0.2	0.1	0.7
10-480	0.58	39.66	163.8	1,424.7	12,964.9	55.4	52.9	6.5	7.2	3.0	0.0	0.4	0.2	1.6
10-485	0.00	7.27	0.1	1.1	10.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-490	0.43	150.96	466.0	4,052.1	36,874.5	157.6	150.3	18.5	20.5	8.4	0.1	1.0	0.7	4.6
10-500A	0.26	26.21	49.0	425.9	3,875.8	16.6	15.8	1.9	2.2	0.9	0.0	0.1	0.1	0.5
10-500B	0.46	8.48	27.8	241.7	2,199.2	9.4	9.0	1.1	1.2	0.5	0.0	0.1	0.0	0.3
10-500C	0.44	111.36	345.2	3,001.8	27,316.7	116.8	111.4	13.7	15.2	6.3	0.0	0.7	0.5	3.4
10-500D	0.24	3.83	6.5	56.5	513.8	2.2	2.1	0.3	0.3	0.1	0.0	0.0	0.0	0.1
10-500E	0.53	23.34	88.5	769.5	7,002.1	29.9	28.5	3.5	3.9	1.6	0.0	0.2	0.1	0.9
10-500F	0.49	12.04	42.3	368.1	3,349.8	14.3	13.7	1.7	1.9	0.8	0.0	0.1	0.1	0.4
10-500G	0.00	112.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-505	0.10	7.85	5.6	48.6	442.3	1.9	1.8	0.2	0.2	0.1	0.0	0.0	0.0	0.1
10-510	0.51	62.36	225.9	1,964.0	17,871.9	76.4	72.9	9.0	9.9	4.1	0.0	0.5	0.3	2.2
10-520	0.00	139.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-530	0.45	116.15	372.8	3,241.9	29,500.9	126.1	120.3	14.8	16.4	6.8	0.0	0.8	0.6	3.7
10-540	0.12	53.9	45.5	395.2	3,596.6	15.4	14.7	1.8	2.0	0.8	0.0	0.1	0.1	0.4
10-550	0.46	25.83	84.6	735.6	6,693.6	28.6	27.3	3.4	3.7	1.5	0.0	0.2	0.1	0.8
10-560A/B	0.44	600.63	1,871.1	16,270.1	148,058.0	632.9	603.6	74.4	82.2	33.9	0.2	4.1	2.8	18.4
10-570A	0.54	14.64	56.7	492.9	4,485.6	19.2	18.3	2.3	2.5	1.0	0.0	0.1	0.1	0.6
10-570B	0.44	228.18	709.2	6,167.2	56,121.9	239.9	228.8	28.2	31.1	12.9	0.1	1.5	1.1	7.0
10-580	0.45	73.39	234.5	2,039.5	18,559.8	79.3	75.7	9.3	10.3	4.3	0.0	0.5	0.4	2.3
10-600	0.48	89.24	307.3	2,672.2	24,316.8	103.9	99.1	12.2	13.5	5.6	0.0	0.7	0.5	3.0
10-610	0.46	25.6	83.6	726.5	6,611.4	28.3	27.0	3.3	3.7	1.5	0.0	0.2	0.1	0.8
10-620	0.00	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630A	0.10	6.24	4.4	38.6	351.6	1.5	1.4	0.2	0.2	0.1	0.0	0.0	0.0	0.0
10-630B	0.45	4.68	15.0	130.4	1,186.6	5.1	4.8	0.6	0.7	0.3	0.0	0.0	0.0	0.1
10-630C	0.48	96.03	330.4	2,872.7	26,141.5	111.7	106.6	13.1	14.5	6.0	0.0	0.7	0.5	3.2
10-630D	0.45	6.37	20.4	177.5	1,615.1	6.9	6.6	0.8	0.9	0.4	0.0	0.0	0.0	0.2
10-630E	0.45	8.52	27.3	237.4	2,160.3	9.2	8.8	1.1	1.2	0.5	0.0	0.1	0.0	0.3
10-630F	0.54	17.56	67.5	587.4	5,345.2	22.8	21.8	2.7	3.0	1.2	0.0	0.1	0.1	0.7
10-630G	0.45	5.9	18.9	164.4	1,496.0	6.4	6.1	0.8	0.8	0.3	0.0	0.0	0.0	0.2
10-630H	0.30	25.63	55.3	480.6	4,373.8	18.7	17.8	2.2	2.4	1.0	0.0	0.1	0.1	0.5
10-630I	0.47	12.48	41.3	359.3	3,270.0	14.0	13.3	1.6	1.8	0.7	0.0	0.1	0.1	0.4
10-630J	0.55	14.69	57.9	503.6	4,582.7	19.6	18.7	2.3	2.5	1.0	0.0	0.1	0.1	0.6
10-630K	0.47	95.29	321.1	2,792.5	25,411.3	108.6	103.6	12.8	14.1	5.8	0.0	0.7	0.5	3.2
10-630L	0.52	100.42	372.5	3,239.5	29,479.0	126.0	120.2	14.8	16.4	6.8	0.0	0.8	0.6	3.7
10-630M	0.50	11.71	41.4	360.0	3,276.0	14.0	13.4	1.6	1.8	0.8	0.0	0.1	0.1	0.4
10-630N	0.45	8.45	27.1	235.4	2,142.5	9.2	8.7	1.1	1.2	0.5	0.0	0.1	0.0	0.3
10-630O	0.36	5.77	15.0	130.1	1,183.7	5.1	4.8	0.6	0.7	0.3	0.0	0.0	0.0	0.1
10-630P/Q	0.00	67.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630R	0.33	83.89	199.5	1,734.8	15,786.7	67.5	64.4	7.9	8.8	3.6	0.0	0.4	0.3	2.0
10-630S	0.22	37.02	57.3	498.3	4,534.3	19.4	18.5	2.3	2.5	1.0	0.0	0.1	0.1	0.6
10-630T	0.56	7.72	30.9	268.9	2,446.8	10.5	10.0	1.2	1.4	0.6	0.0	0.1	0.0	0.3
10-630U	0.52	115.42	429.9	3,738.3	34,018.3	145.4	138.7	17.1	18.9	7.8	0.0	0.9	0.7	4.2
10-630V	0.11	33.85	25.5	221.3	2,014.1	8.6	8.2	1.0	1.1	0.5	0.0	0.1	0.0	0.3
10-630W	0.47	23.68	79.9	694.5	6,320.3	27.0	25.8	3.2	3.5	1.4	0.0	0.2	0.1	0.8
10-630X	0.44	14.78	46.6	404.8	3,684.1	15.7	15.0	1.9	2.0	0.8	0.0	0.1	0.1	0.5
10-630Y	0.00	112.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630Z	0.47	45.66	153.1	1,331.0	12,112.1	51.8	49.4	6.1	6.7	2.8	0.0	0.3	0.2	1.5
10-640	0.46	258.18	840.8	7,311.2	66,532.0	284.4	271.2	33.4	36.9	15.2	0.1	1.8	1.3	8.3
10-650	0.56	19.53	77.5	673.6	6,129.6	26.2	25.0	3.1	3.4	1.4	0.0	0.2	0.1	0.8
10-660	0.46	306.37	1,010.6	8,787.8	79,969.0	341.8	326.0	40.2	44.4	18.3	0.1	2.2	1.5	9.9
10-670	0.45	137.88	441.2	3,836.1	34,908.5	149.2	142.3	17.5	19.4	8.0	0.0	1.0	0.7	4.3
10-680	0.46	707.95	2,311.4	20,098.8	182,898.9	781.8	745.7	91.9	101.5	41.9	0.3	5.0	3.5	22.7
10-690	0.50	70.63	251.6	2,187.8	19,909.4	85.1	81.2	10.0	11.0	4.6	0.0	0.5	0.4	2.5
10-700	0.46	222.07	734.3	6,384.9	58,102.6	248.4	236.9	29.2	32.2	13.3	0.1	1.6	1.1	7.2
10-710	0.33	29.95	71.0	617.8	5,621.6	24.0	22.9	2.8	3.1	1.3	0.0	0.2	0.1	0.7

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/05 - 03/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Winter/snowmelt Median Event Mean Concentration			23.0	200	1820	7.78	7.420	0.914	1.010	0.417	0.002500	0.050	0.035	0.226
Precipitation (meters)	0.09													
10-720A	0.44	15.77	49.8	433.0	3,940.1	16.8	16.1	2.0	2.2	0.9	0.0	0.1	0.1	0.5
10-720B	0.48	422.18	1,448.3	12,593.9	114,604.5	489.9	467.2	57.6	63.6	26.3	0.2	3.1	2.2	14.2
10-720C	0.43	26.35	80.6	700.6	6,375.3	27.3	26.0	3.2	3.5	1.5	0.0	0.2	0.1	0.8
10-720D	0.46	22.95	74.4	646.9	5,887.1	25.2	24.0	3.0	3.3	1.3	0.0	0.2	0.1	0.7
10-720E	0.46	18.39	59.7	518.9	4,722.2	20.2	19.3	2.4	2.6	1.1	0.0	0.1	0.1	0.6
10-720F	0.48	317.75	1,085.6	9,439.9	85,903.4	367.2	350.2	43.1	47.7	19.7	0.1	2.4	1.6	10.7
10-720G	0.00	13.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-720H	0.45	4.55	14.6	126.8	1,153.7	4.9	4.7	0.6	0.6	0.3	0.0	0.0	0.0	0.1
10-720I	0.45	87.27	277.1	2,409.7	21,928.6	93.7	89.4	11.0	12.2	5.0	0.0	0.6	0.4	2.7
10-720J	0.36	3.71	9.4	82.1	746.8	3.2	3.0	0.4	0.4	0.2	0.0	0.0	0.0	0.1
10-720K	0.55	32.76	128.1	1,113.8	10,135.5	43.3	41.3	5.1	5.6	2.3	0.0	0.3	0.2	1.3
10-720L	0.45	4.57	14.6	127.3	1,158.7	5.0	4.7	0.6	0.6	0.3	0.0	0.0	0.0	0.1
20-010	0.42	93.99	281.0	2,443.1	22,232.3	95.0	90.6	11.2	12.3	5.1	0.0	0.6	0.4	2.8
20-020	0.44	15.09	47.1	409.9	3,729.7	15.9	15.2	1.9	2.1	0.9	0.0	0.1	0.1	0.5
20-030	0.45	7.95	25.5	221.5	2,015.7	8.6	8.2	1.0	1.1	0.5	0.0	0.1	0.0	0.3
20-040	0.37	6.79	18.0	156.7	1,426.4	6.1	5.8	0.7	0.8	0.3	0.0	0.0	0.0	0.2
20-050	0.00	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-060	0.45	5.91	18.9	164.7	1,498.5	6.4	6.1	0.8	0.8	0.3	0.0	0.0	0.0	0.2
20-070	0.44	39.07	123.3	1,072.6	9,760.7	41.7	39.8	4.9	5.4	2.2	0.0	0.3	0.2	1.2
20-080	0.45	33.72	108.9	946.6	8,614.2	36.8	35.1	4.3	4.8	2.0	0.0	0.2	0.2	1.1
20-090	0.55	9.95	39.2	340.5	3,098.9	13.2	12.6	1.6	1.7	0.7	0.0	0.1	0.1	0.4
20-100	0.10	0.99	0.7	6.1	55.8	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-110	0.24	216.04	369.1	3,209.3	29,204.9	124.8	119.1	14.7	16.2	6.7	0.0	0.8	0.6	3.6
20-120	0.47	10.22	34.0	295.8	2,691.8	11.5	11.0	1.4	1.5	0.6	0.0	0.1	0.1	0.3
20-130	0.45	16.12	51.7	449.2	4,087.3	17.5	16.7	2.1	2.3	0.9	0.0	0.1	0.1	0.5
20-140	0.44	2.97	9.3	81.2	738.5	3.2	3.0	0.4	0.4	0.2	0.0	0.0	0.0	0.1
20-150	0.45	14.48	46.4	403.5	3,671.4	15.7	15.0	1.8	2.0	0.8	0.0	0.1	0.1	0.5
20-160	0.54	3.21	12.3	107.4	977.2	4.2	4.0	0.5	0.5	0.2	0.0	0.0	0.0	0.1
20-170	0.37	4.94	13.1	114.0	1,037.1	4.4	4.2	0.5	0.6	0.2	0.0	0.0	0.0	0.1
20-180	0.51	5.3	19.1	166.1	1,511.4	6.5	6.2	0.8	0.8	0.3	0.0	0.0	0.0	0.2
20-190	0.45	1.35	4.3	37.6	342.3	1.5	1.4	0.2	0.2	0.1	0.0	0.0	0.0	0.0
20-200	0.45	13.84	44.3	385.6	3,509.2	15.0	14.3	1.8	1.9	0.8	0.0	0.1	0.1	0.4
20-210A	0.44	92.9	290.6	2,526.7	22,993.4	98.3	93.7	11.5	12.8	5.3	0.0	0.6	0.4	2.9
20-210B	0.50	620.78	2,230.3	19,393.8	176,483.4	754.4	719.5	88.6	97.9	40.4	0.2	4.8	3.4	21.9
20-220	0.46	26.38	86.6	753.0	6,852.6	29.3	27.9	3.4	3.8	1.6	0.0	0.2	0.1	0.9
20-230	0.00	21.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-240	0.48	30.06	103.1	896.7	8,160.4	34.9	33.3	4.1	4.5	1.9	0.0	0.2	0.2	1.0
20-250	0.57	6.28	25.6	222.3	2,023.0	8.6	8.2	1.0	1.1	0.5	0.0	0.1	0.0	0.3
20-260	0.60	3.5	15.0	130.0	1,183.2	5.1	4.8	0.6	0.7	0.3	0.0	0.0	0.0	0.1
20-270	0.48	42.81	145.3	1,263.6	11,499.0	49.2	46.9	5.8	6.4	2.6	0.0	0.3	0.2	1.4
20-280	0.54	8.98	34.4	298.8	2,719.4	11.6	11.1	1.4	1.5	0.6	0.0	0.1	0.1	0.3
20-290	0.00	4.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-010	0.45	49.49	158.0	1,373.6	12,499.5	53.4	51.0	6.3	6.9	2.9	0.0	0.3	0.2	1.6
40-010	0.45	719.17	2,294.7	19,954.2	181,583.5	776.2	740.3	91.2	100.8	41.6	0.2	5.0	3.5	22.5
40-020	0.45	15.36	49.2	428.0	3,894.6	16.6	15.9	2.0	2.2	0.9	0.0	0.1	0.1	0.5
40-030	0.42	51.02	151.8	1,319.7	12,009.0	51.3	49.0	6.0	6.7	2.8	0.0	0.3	0.2	1.5
40-040	0.43	65.39	202.2	1,758.0	15,997.5	68.4	65.2	8.0	8.9	3.7	0.0	0.4	0.3	2.0
40-050	0.45	10.28	32.9	286.4	2,606.5	11.1	10.6	1.3	1.4	0.6	0.0	0.1	0.0	0.3
40-060	0.45	3.2	10.3	89.2	811.4	3.5	3.3	0.4	0.5	0.2	0.0	0.0	0.0	0.1
40-070	0.38	7.98	21.5	186.9	1,701.0	7.3	6.9	0.9	0.9	0.4	0.0	0.0	0.0	0.2
40-080	0.41	60.51	176.0	1,530.1	13,923.8	59.5	56.8	7.0	7.7	3.2	0.0	0.4	0.3	1.7
40-090	0.46	20.65	68.4	594.4	5,408.9	23.1	22.1	2.7	3.0	1.2	0.0	0.1	0.1	0.7
40-100	0.00	20.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-110	0.44	2.61	8.2	71.7	652.7	2.8	2.7	0.3	0.4	0.1	0.0	0.0	0.0	0.1
40-120	0.44	65.87	205.6	1,787.5	16,266.4	69.5	66.3	8.2	9.0	3.7	0.0	0.4	0.3	2.0
40-130	0.45	35.01	112.6	979.5	8,913.8	38.1	36.3	4.5	4.9	2.0	0.0	0.2	0.2	1.1
40-140	0.35	125.46	310.6	2,701.2	24,581.3	105.1	100.2	12.3	13.6	5.6	0.0	0.7	0.5	3.1
40-150	0.47	24.31	82.0	713.1	6,489.0	27.7	26.5	3.3	3.6	1.5	0.0	0.2	0.1	0.8
40-160	0.49	30.99	109.1	948.6	8,632.1	36.9	35.2	4.3	4.8	2.0	0.0	0.2	0.2	1.1
40-170	0.00	194.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-180	0.54	16.8	64.4	560.0	5,096.0	21.8	20.8	2.6	2.8	1.2	0.0	0.1	0.1	0.6
40-190	0.53	65.53	246.7	2,145.5	19,523.8	83.5	79.6	9.8	10.8	4.5	0.0	0.5	0.4	2.4
40-200	0.46	24.75	81.5	708.5	6,447.2	27.6	26.3	3.2	3.6	1.5	0.0	0.2	0.1	0.8
40-210	0.54	17.26	67.0	582.3	5,298.7	22.7	21.6	2.7	2.9	1.2	0.0	0.1	0.1	0.7
40-220	0.47	100.58	334.8	2,911.3	26,493.2	113.3	108.0	13.3	14.7	6.1	0.0	0.7	0.5	3.3
40-230	0.44	13.78	43.6	379.5	3,453.8	14.8	14.1	1.7	1.9	0.8	0.0	0.1	0.1	0.4
40-240	0.00	340.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-250	0.60	1.15	4.9	42.7	388.8	1.7	1.6	0.2	0.2	0.1	0.0	0.0	0.0	0.0
40-260	0.45	3.49	11.2	97.2	884.9	3.8	3.6	0.4	0.5	0.2	0.0	0.0	0.0	0.1
40-270	0.45	9.59	30.7	267.2	2,431.6	10.4	9.9	1.2	1.3	0.6	0.0	0.1	0.0	0.3
40-280	0.53	12.76	47.8	415.5	3,780.9	16.2	15.4	1.9	2.1	0.9	0.0	0.1	0.1	0.5
40-290	0.51	13.73	50.1	435.3	3,961.1	16.9	16.1	2.0	2.2	0.9	0.0	0.1	0.1	0.5
40-300	0.52	10.38	38.5	334.9	3,047.3	13.0	12.4	1.5	1.7	0.7	0.0	0.1	0.1	0.4
40-310	0.45	97.86	315.4	2,742.7	24,958.5	106.7	101.8	12.5	13.9	5.7	0.0	0.7	0.5	3.1
40-320	0.60	9.43	40.3	350.3	3,188.0	13.6	13.0	1.6	1.8	0.7	0.0	0.1	0.1	0.4
40-330	0.59	15.34	64.7	562.9	5,122.8	21.9	20.9	2.6	2.8	1.2	0.0	0.1	0.1	0.6
40-340	0.53	35.27	133.8	1,163.8	10,590.7	45.3	43.2	5.3	5.9	2.4	0.0	0.3	0.2	1.3
40-350	0.60	8.99	38.4	334.0	3,039.2	13.0	12.4	1.5	1.7	0.7	0.0	0.1	0.1	0.4
40-360	0.60	8.09	34.6	300.5	2,735.0	11.7	11.2	1.4	1.5	0.6	0.0	0.1	0.1	0.3
40-370	0.58	12.41	51.1	444.5	4,044.8	17.3	16.5	2.0	2.2	0.9	0.0	0.1	0.1	0.5
40-380	0.39	24.92	69.8	607.1	5,524.2	23.6	22.5	2.8	3.1	1.3	0.0	0.2	0.1	0.7
40-390	0.58	5.72	23.6	205.4	1,869.1	8.0	7.6	0.9	1.0	0.4	0.0	0.1	0.0	0.2
40-400	0.10	1.07	0.8	6.6	60.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41-010	0.38	94.73	254.6	2,213.9	20,146.5	86.1	82.1	10.1	11.2	4.6	0.0	0.6	0.4	2.5
41-020	0.00	14.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41-030	0.50	60.47	216.1	1,879.5	17,103.5	73.1	69.7	8.6	9.5	3.9	0.0	0.5	0.3	2.1

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/05 - 03/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Winter/snowmelt Median Event Mean Concentration			23.0	200	1820	7.78	7.420	0.914	1.010	0.417	0.002500	0.050	0.035	0.226
Precipitation (meters)	0.09													
41-040	0.57	35.59	145.2	1,262.7	11,490.5	49.1	46.8	5.8	6.4	2.6	0.0	0.3	0.2	1.4
41-050	0.60	10.48	44.8	389.3	3,543.0	15.1	14.4	1.8	2.0	0.8	0.0	0.1	0.1	0.4
41-060	0.60	2.95	12.6	109.6	997.3	4.3	4.1	0.5	0.6	0.2	0.0	0.0	0.0	0.1
51-010	0.45	29.63	95.2	828.0	7,535.0	32.2	30.7	3.8	4.2	1.7	0.0	0.2	0.1	0.9
51-020	0.45	4.55	14.6	126.8	1,153.7	4.9	4.7	0.6	0.6	0.3	0.0	0.0	0.0	0.1
52-010	0.28	45.29	89.1	775.0	7,052.1	30.1	28.8	3.5	3.9	1.6	0.0	0.2	0.1	0.9
52-020	0.45	6.09	19.5	169.7	1,544.1	6.6	6.3	0.8	0.9	0.4	0.0	0.0	0.0	0.2
52-030	0.45	7.18	23.0	200.1	1,820.5	7.8	7.4	0.9	1.0	0.4	0.0	0.0	0.0	0.2
52-040	0.41	4.54	13.4	116.2	1,057.4	4.5	4.3	0.5	0.6	0.2	0.0	0.0	0.0	0.1
52-050	0.44	15.3	47.4	412.1	3,750.2	16.0	15.3	1.9	2.1	0.9	0.0	0.1	0.1	0.5
52-060	0.10	3.22	2.3	19.9	181.4	0.8	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
52-070	0.42	86.94	262.0	2,278.0	20,730.0	88.6	84.5	10.4	11.5	4.7	0.0	0.6	0.4	2.6
52-080	0.24	8.08	13.9	121.1	1,101.9	4.7	4.5	0.6	0.6	0.3	0.0	0.0	0.0	0.1
52-090	0.45	4.89	15.7	136.2	1,239.9	5.3	5.1	0.6	0.7	0.3	0.0	0.0	0.0	0.2
52-100A/B	0.27	11.89	22.6	196.3	1,786.2	7.6	7.3	0.9	1.0	0.4	0.0	0.0	0.0	0.2
52-110	0.45	8.84	28.1	244.3	2,223.4	9.5	9.1	1.1	1.2	0.5	0.0	0.1	0.0	0.3
52-120	0.45	14.74	47.2	410.7	3,737.4	16.0	15.2	1.9	2.1	0.9	0.0	0.1	0.1	0.5
52-130	0.31	7.18	16.1	139.9	1,273.4	5.4	5.2	0.6	0.7	0.3	0.0	0.0	0.0	0.2
53-010	0.45	7.03	22.5	195.9	1,782.5	7.6	7.3	0.9	1.0	0.4	0.0	0.0	0.0	0.2
53-020	0.28	12.38	24.4	211.8	1,927.8	8.2	7.9	1.0	1.1	0.4	0.0	0.1	0.0	0.2
53-030	0.44	11.37	35.4	307.6	2,798.8	12.0	11.4	1.4	1.6	0.6	0.0	0.1	0.1	0.3
53-040	0.45	2.78	8.9	77.5	704.9	3.0	2.9	0.4	0.4	0.2	0.0	0.0	0.0	0.1
53-050	0.45	13.66	43.8	380.6	3,463.5	14.8	14.1	1.7	1.9	0.8	0.0	0.1	0.1	0.4
53-060	0.45	20.37	65.3	567.6	5,164.9	22.1	21.1	2.6	2.9	1.2	0.0	0.1	0.1	0.6
53-070	0.45	4.89	15.7	136.2	1,239.9	5.3	5.1	0.6	0.7	0.3	0.0	0.0	0.0	0.2
53-080	0.39	5.81	16.3	141.8	1,290.5	5.5	5.3	0.6	0.7	0.3	0.0	0.0	0.0	0.2
53-090	0.46	59.59	194.8	1,694.2	15,417.1	65.9	62.9	7.7	8.6	3.5	0.0	0.4	0.3	1.9
53-100	0.00	107	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53-110	0.38	4.59	12.6	109.4	995.4	4.3	4.1	0.5	0.6	0.2	0.0	0.0	0.0	0.1
53-120A/B	0.46	129.79	421.1	3,661.5	33,319.2	142.4	135.8	16.7	18.5	7.6	0.0	0.9	0.6	4.1
53-130	0.45	5.02	16.1	139.9	1,272.8	5.4	5.2	0.6	0.7	0.3	0.0	0.0	0.0	0.2
53-140	0.45	6.36	20.4	177.2	1,612.6	6.9	6.6	0.8	0.9	0.4	0.0	0.0	0.0	0.2
53-150	0.48	90.4	311.4	2,708.1	24,643.5	105.3	100.5	12.4	13.7	5.6	0.0	0.7	0.5	3.1
53-160	0.47	252.19	849.0	7,382.3	67,179.0	287.2	273.9	33.7	37.3	15.4	0.1	1.8	1.3	8.3
53-170	0.36	6.39	16.4	142.8	1,299.2	5.6	5.3	0.7	0.7	0.3	0.0	0.0	0.0	0.2
53-180	0.10	8.09	5.8	50.1	455.8	1.9	1.9	0.2	0.3	0.1	0.0	0.0	0.0	0.1
53-190	0.30	11.41	24.4	212.3	1,932.0	8.3	7.9	1.0	1.1	0.4	0.0	0.1	0.0	0.2
54-010A/B	0.44	84.93	263.1	2,288.0	20,820.5	89.0	84.9	10.5	11.6	4.8	0.0	0.6	0.4	2.6
54-040A/B	0.49	255.14	899.2	7,818.9	71,151.9	304.2	290.1	35.7	39.5	16.3	0.1	1.9	1.4	8.8
54-050	0.17	9.27	11.5	99.8	908.2	3.9	3.7	0.5	0.5	0.2	0.0	0.0	0.0	0.1
54-060	0.44	32.13	100.5	873.9	7,952.2	34.0	32.4	4.0	4.4	1.8	0.0	0.2	0.2	1.0
54-070	0.36	60.8	155.2	1,349.9	12,284.1	52.5	50.1	6.2	6.8	2.8	0.0	0.3	0.2	1.5
54-080A/B/C	0.46	414.26	1,348.3	11,724.3	106,691.5	456.1	435.0	53.6	59.2	24.4	0.1	2.9	2.0	13.2
54-090	0.10	3.55	2.5	22.0	200.0	0.9	0.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0
54-100A/B	0.60	114.24	484.6	4,213.7	38,344.3	163.9	156.3	19.3	21.3	8.8	0.1	1.0	0.7	4.8
54-110	0.45	24.55	78.7	684.0	6,224.7	26.6	25.4	3.1	3.5	1.4	0.0	0.2	0.1	0.8
54-120	0.46	62.08	202.0	1,756.4	15,983.5	68.3	65.2	8.0	8.9	3.7	0.0	0.4	0.3	2.0
54-130	0.10	1.07	0.8	6.6	60.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54-140A/B	0.41	113.01	328.3	2,854.4	25,975.2	111.0	105.9	13.0	14.4	6.0	0.0	0.7	0.5	3.2
54-150	0.45	55.34	175.5	1,525.9	13,886.0	59.4	56.6	7.0	7.7	3.2	0.0	0.4	0.3	1.7
54-160	0.60	2.62	11.2	97.3	885.7	3.8	3.6	0.4	0.5	0.2	0.0	0.0	0.0	0.1
54-170	0.59	8.08	34.2	297.5	2,707.1	11.6	11.0	1.4	1.5	0.6	0.0	0.1	0.1	0.3
54-180	0.60	2.82	12.0	104.8	953.4	4.1	3.9	0.5	0.5	0.2	0.0	0.0	0.0	0.1
54-190	0.10	2.2	1.6	13.6	124.0	0.5	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
54-200	0.10	2.13	1.5	13.2	120.0	0.5	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
54-210	0.10	1.14	0.8	7.1	64.2	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55-010	0.60	14.98	64.0	556.5	5,064.3	21.6	20.6	2.5	2.8	1.2	0.0	0.1	0.1	0.6
55-020	0.60	189.58	804.7	6,997.2	63,674.7	272.2	259.6	32.0	35.3	14.6	0.1	1.7	1.2	7.9
56-010	0.60	67.62	288.9	2,512.1	22,860.3	97.7	93.2	11.5	12.7	5.2	0.0	0.6	0.4	2.8
57-010	0.53	26.1	99.1	862.1	7,845.1	33.5	32.0	3.9	4.4	1.8	0.0	0.2	0.2	1.0
57-020	0.00	142	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-030	0.45	18.22	58.4	507.7	4,619.7	19.7	18.8	2.3	2.6	1.1	0.0	0.1	0.1	0.6
57-040	0.35	39.88	99.1	861.7	7,841.2	33.5	32.0	3.9	4.4	1.8	0.0	0.2	0.1	1.0
57-050	0.45	7.9	25.3	220.1	2,003.1	8.6	8.2	1.0	1.1	0.5	0.0	0.1	0.0	0.2
57-060	0.46	26.11	86.0	747.6	6,803.4	29.1	27.7	3.4	3.8	1.6	0.0	0.2	0.1	0.8
57-070	0.45	81.33	261.2	2,271.5	20,670.7	88.4	84.3	10.4	11.5	4.7	0.0	0.6	0.4	2.6
57-080	0.42	5.54	16.7	145.0	1,319.5	5.6	5.4	0.7	0.7	0.3	0.0	0.0	0.0	0.2
57-090	0.47	77.77	259.9	2,259.9	20,564.7	87.9	83.8	10.3	11.4	4.7	0.0	0.6	0.4	2.6
57-100A/B	0.47	313.43	1,054.3	9,168.0	83,428.6	356.6	340.1	41.9	46.3	19.1	0.1	2.3	1.6	10.4
57-110	0.54	21.6	83.2	723.3	6,581.8	28.1	26.8	3.3	3.7	1.5	0.0	0.2	0.1	0.8
57-120A/B/C	0.00	65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-130	0.10	1.16	0.8	7.2	65.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-140	0.10	1.55	1.1	9.6	87.3	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-150	0.43	35.68	109.7	953.5	8,676.9	37.1	35.4	4.4	4.8	2.0	0.0	0.2	0.2	1.1
57-160	0.10	1.89	1.3	11.7	106.5	0.5	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
61-010	0.55	2.86	11.2	97.7	889.1	3.8	3.6	0.4	0.5	0.2	0.0	0.0	0.0	0.1
62-010	0.45	27.84	89.6	779.3	7,091.5	30.3	28.9	3.6	3.9	1.6	0.0	0.2	0.1	0.9
63-010	0.45	388.79	1,251.7	10,884.1	99,045.3	423.4	403.8	49.7	55.0	22.7	0.1	2.7	1.9	12.3
63-020	0.00	11.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64-100	0.45	24.92	79.8	693.7	6,312.6	27.0	25.7	3.2	3.5	1.4	0.0	0.2	0.1	0.8
64-110	0.45	6.01	19.3	167.5	1,523.9	6.5	6.2	0.8	0.8	0.3	0.0	0.0	0.0	0.2
64-120	0.45	16.04	51.4	446.9	4,067.0	17.4	16.6	2.0	2.3	0.9	0.0	0.1	0.1	0.5
64-130	0.45	2.44	7.8	68.0	618.7	2.6	2.5	0.3	0.3	0.1	0.0	0.0	0.0	0.1
65-010	0.00	18.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65-020	0.53	38.46	144.9	1,260.1	11,467.0	49.0	46.8	5.8	6.4	2.6	0.0	0.3	0.2	1.4
70-010	0.46	6.23	20.3	176.9	1,609.9	6.9	6.6	0.8	0.9	0.4	0.0	0.0	0.0	0.2

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/05 - 03/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Winter/snowmelt Median Event Mean Concentration			23.0	200	1820	7.78	7.420	0.914	1.010	0.417	0.002500	0.050	0.035	0.226
Precipitation (meters)	0.09													
70-015	0.45	11.69	37.5	325.7	2,964.0	12.7	12.1	1.5	1.6	0.7	0.0	0.1	0.1	0.4
70-020	0.45	37.55	120.3	1,046.3	9,520.9	40.7	38.8	4.8	5.3	2.2	0.0	0.3	0.2	1.2
70-025	0.00	3.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-030	0.45	13.48	43.2	375.3	3,415.2	14.6	13.9	1.7	1.9	0.8	0.0	0.1	0.1	0.4
70-035	0.45	4.53	14.5	126.2	1,148.6	4.9	4.7	0.6	0.6	0.3	0.0	0.0	0.0	0.1
70-040	0.45	2.42	7.8	67.4	613.6	2.6	2.5	0.3	0.3	0.1	0.0	0.0	0.0	0.1
70-045	0.00	0.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-050	0.45	17.41	55.8	485.1	4,414.3	18.9	18.0	2.2	2.4	1.0	0.0	0.1	0.1	0.5
70-055	0.46	333.43	1,101.9	9,581.7	87,193.8	372.7	355.5	43.8	48.4	20.0	0.1	2.4	1.7	10.8
70-060	0.45	3.53	11.3	98.4	895.0	3.8	3.6	0.4	0.5	0.2	0.0	0.0	0.0	0.1
70-065	0.45	1.89	6.1	52.7	479.2	2.0	2.0	0.2	0.3	0.1	0.0	0.0	0.0	0.1
70-070	0.45	5.8	18.6	161.6	1,470.6	6.3	6.0	0.7	0.8	0.3	0.0	0.0	0.0	0.2
70-075	0.43	5	15.4	133.6	1,215.3	5.2	5.0	0.6	0.7	0.3	0.0	0.0	0.0	0.2
70-080	0.46	11.96	39.3	342.1	3,113.3	13.3	12.7	1.6	1.7	0.7	0.0	0.1	0.1	0.4
70-085	0.45	229.48	730.8	6,354.7	57,827.7	247.2	235.8	29.0	32.1	13.2	0.1	1.6	1.1	7.2
70-090	0.45	18.57	59.5	517.4	4,708.5	20.1	19.2	2.4	2.6	1.1	0.0	0.1	0.1	0.6
70-095	0.45	9.99	32.0	278.4	2,533.0	10.8	10.3	1.3	1.4	0.6	0.0	0.1	0.0	0.3
70-100	0.45	9.64	30.9	268.6	2,444.2	10.4	10.0	1.2	1.4	0.6	0.0	0.1	0.0	0.3
70-105	0.45	1.63	5.2	45.4	413.3	1.8	1.7	0.2	0.2	0.1	0.0	0.0	0.0	0.1
70-110	0.45	18.13	58.1	505.2	4,596.9	19.7	18.7	2.3	2.6	1.1	0.0	0.1	0.1	0.6
70-115	0.45	3.71	11.9	103.4	940.7	4.0	3.8	0.5	0.5	0.2	0.0	0.0	0.0	0.1
70-120	0.45	4.22	13.5	117.6	1,070.0	4.6	4.4	0.5	0.6	0.2	0.0	0.0	0.0	0.1
70-125	0.00	5.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-130	0.49	34.29	120.5	1,048.2	9,538.5	40.8	38.9	4.8	5.3	2.2	0.0	0.3	0.2	1.2
70-135	0.45	7.46	23.9	207.9	1,891.5	8.1	7.7	0.9	1.0	0.4	0.0	0.1	0.0	0.2
70-140	0.60	0.78	3.3	29.0	263.7	1.1	1.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
70-145	0.60	9.19	39.3	341.4	3,106.9	13.3	12.7	1.6	1.7	0.7	0.0	0.1	0.1	0.4
70-150	0.45	4.51	14.5	125.7	1,143.5	4.9	4.7	0.6	0.6	0.3	0.0	0.0	0.0	0.1
70-155	0.45	2.05	6.6	57.1	519.8	2.2	2.1	0.3	0.3	0.1	0.0	0.0	0.0	0.1
70-160	0.45	2.95	9.5	82.2	748.0	3.2	3.0	0.4	0.4	0.2	0.0	0.0	0.0	0.1
70-165	0.45	27.77	89.0	773.8	7,041.2	30.1	28.7	3.5	3.9	1.6	0.0	0.2	0.1	0.9
70-170	0.45	23.74	76.1	661.5	6,019.3	25.7	24.5	3.0	3.3	1.4	0.0	0.2	0.1	0.7
70-175	0.46	30.89	100.6	874.5	7,957.9	34.0	32.4	4.0	4.4	1.8	0.0	0.2	0.2	1.0
70-180	0.45	1.14	3.7	31.8	289.0	1.2	1.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0
70-185	0.45	1.53	4.9	42.6	387.9	1.7	1.6	0.2	0.2	0.1	0.0	0.0	0.0	0.0
70-190	0.17	15.04	18.4	160.3	1,458.4	6.2	5.9	0.7	0.8	0.3	0.0	0.0	0.0	0.2
70-195	0.45	46.02	148.3	1,289.2	11,732.1	50.2	47.8	5.9	6.5	2.7	0.0	0.3	0.2	1.5
70-200	0.45	31.52	101.0	878.2	7,992.0	34.2	32.6	4.0	4.4	1.8	0.0	0.2	0.2	1.0
70-205	0.45	1.39	4.5	38.7	352.4	1.5	1.4	0.2	0.2	0.1	0.0	0.0	0.0	0.0
70-210	0.45	3.58	11.5	99.7	907.7	3.9	3.7	0.5	0.5	0.2	0.0	0.0	0.0	0.1
70-215	0.45	5.93	19.0	165.2	1,503.6	6.4	6.1	0.8	0.8	0.3	0.0	0.0	0.0	0.2
70-220	0.45	4.54	14.5	126.5	1,151.1	4.9	4.7	0.6	0.6	0.3	0.0	0.0	0.0	0.1
70-225	0.45	4.99	16.0	139.0	1,265.2	5.4	5.2	0.6	0.7	0.3	0.0	0.0	0.0	0.2
70-230	0.45	4.72	15.1	131.5	1,196.8	5.1	4.9	0.6	0.7	0.3	0.0	0.0	0.0	0.1
70-235	0.45	5.04	16.1	140.4	1,277.9	5.5	5.2	0.6	0.7	0.3	0.0	0.0	0.0	0.2
70-240	0.45	4.52	14.5	125.9	1,146.1	4.9	4.7	0.6	0.6	0.3	0.0	0.0	0.0	0.1
70-245	0.44	9.98	31.2	271.3	2,468.5	10.6	10.1	1.2	1.4	0.6	0.0	0.1	0.0	0.3
70-250	0.48	41.27	141.7	1,232.6	11,216.5	47.9	45.7	5.6	6.2	2.6	0.0	0.3	0.2	1.4
70-255	0.45	45.37	145.4	1,264.5	11,507.1	49.2	46.9	5.8	6.4	2.6	0.0	0.3	0.2	1.4
70-260	0.46	24.9	81.2	705.7	6,422.3	27.5	26.2	3.2	3.6	1.5	0.0	0.2	0.1	0.8
70-265A/B	0.00	183.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-270	0.45	4.66	14.9	129.8	1,181.6	5.1	4.8	0.6	0.7	0.3	0.0	0.0	0.0	0.1
70-275	0.45	4.28	13.7	119.3	1,085.2	4.6	4.4	0.5	0.6	0.2	0.0	0.0	0.0	0.1
70-280	0.45	9.39	30.1	262.1	2,384.9	10.2	9.7	1.2	1.3	0.5	0.0	0.1	0.0	0.3
70-285	0.45	19.03	60.9	529.7	4,819.8	20.6	19.7	2.4	2.7	1.1	0.0	0.1	0.1	0.6
70-290	0.45	2.37	7.5	65.5	595.8	2.5	2.4	0.3	0.3	0.1	0.0	0.0	0.0	0.1
70-295	0.45	7.18	23.0	200.1	1,820.5	7.8	7.4	0.9	1.0	0.4	0.0	0.0	0.0	0.2
70-300	0.10	0.4	0.3	2.5	22.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-305	0.45	12.68	40.3	350.1	3,186.1	13.6	13.0	1.6	1.8	0.7	0.0	0.1	0.1	0.4
70-310	0.00	5.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-315	0.30	5.79	12.4	107.5	978.7	4.2	4.0	0.5	0.5	0.2	0.0	0.0	0.0	0.1
70-320	0.44	2.32	7.3	63.1	574.1	2.5	2.3	0.3	0.3	0.1	0.0	0.0	0.0	0.1
70-325	0.00	2.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-330	0.47	279.41	937.2	8,149.3	74,158.3	317.0	302.3	37.2	41.2	17.0	0.1	2.0	1.4	9.2
70-335	0.45	1.99	6.4	55.4	504.6	2.2	2.1	0.3	0.3	0.1	0.0	0.0	0.0	0.1
70-340	0.39	22.25	62.3	542.0	4,932.3	21.1	20.1	2.5	2.7	1.1	0.0	0.1	0.1	0.6
70-345	0.45	3.81	12.2	106.2	966.0	4.1	3.9	0.5	0.5	0.2	0.0	0.0	0.0	0.1
70-350	0.49	314.4	1,106.2	9,619.0	87,532.7	374.2	356.9	44.0	48.6	20.1	0.1	2.4	1.7	10.9
70-355	0.45	1.29	4.1	35.9	327.1	1.4	1.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0
70-360	0.45	131.96	427.1	3,713.6	33,794.1	144.5	137.8	17.0	18.8	7.7	0.0	0.9	0.6	4.2
70-365	0.45	6.7	21.5	186.7	1,698.8	7.3	6.9	0.9	0.9	0.4	0.0	0.0	0.0	0.2
70-370	0.44	3.75	11.8	102.9	936.0	4.0	3.8	0.5	0.5	0.2	0.0	0.0	0.0	0.1
70-375	0.47	7.1	23.9	207.8	1,890.8	8.1	7.7	0.9	1.0	0.4	0.0	0.1	0.0	0.2
70-380	0.45	14.4	46.1	401.2	3,651.2	15.6	14.9	1.8	2.0	0.8	0.0	0.1	0.1	0.5
70-385	0.45	14.97	48.0	417.1	3,795.7	16.2	15.5	1.9	2.1	0.9	0.0	0.1	0.1	0.5
70-390	0.46	58.11	191.7	1,666.7	15,167.3	64.8	61.8	7.6	8.4	3.5	0.0	0.4	0.3	1.9
70-395	0.43	57.19	174.9	1,521.0	13,840.9	59.2	56.4	7.0	7.7	3.2	0.0	0.4	0.3	1.7
70-400	0.44	9.67	30.2	262.7	2,391.0	10.2	9.7	1.2	1.3	0.5	0.0	0.1	0.0	0.3
70-405	0.25	7.16	12.8	110.9	1,008.9	4.3	4.1	0.5	0.6	0.2	0.0	0.0	0.0	0.1
70-410	0.43	5.8	17.7	154.0	1,401.5	6.0	5.7	0.7	0.8	0.3	0.0	0.0	0.0	0.2
70-415	0.45	120.75	390.3	3,394.1	30,885.9	132.0	125.9	15.5	17.1	7.1	0.0	0.8	0.6	3.8
70-420	0.45	16.99	54.4	473.4	4,307.9	18.4	17.6	2.2	2.4	1.0	0.0	0.1	0.1	0.5
70-425	0.51	20.63	75.1	652.7	5,939.7	25.4	24.2	3.0	3.3	1.4	0.0	0.2	0.1	0.7
70-430	0.10	6.19	4.4	38.3	348.8	1.5	1.4	0.2	0.2	0.1	0.0	0.0	0.0	0.0
70-435	0.10	9.16	6.5	56.7	516.1	2.2	2.1	0.3	0.3	0.1	0.0	0.0	0.0	0.1
70-440	0.50	34.48	122.0	1,060.4	9,650.0	41.3	39.3	4.8	5.4	2.2	0.0	0.3	0.2	1.2

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/05 - 03/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Winter/snowmelt Median Event Mean Concentration			23.0	200	1820	7.78	7.420	0.914	1.010	0.417	0.002500	0.050	0.035	0.226
Precipitation (meters)	0.09													
70-445	0.45	5.6	17.9	156.0	1,419.9	6.1	5.8	0.7	0.8	0.3	0.0	0.0	0.0	0.2
70-450	0.45	2.65	8.5	73.8	671.9	2.9	2.7	0.3	0.4	0.2	0.0	0.0	0.0	0.1
70-455	0.00	2.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-460	0.45	2.67	8.6	74.4	677.0	2.9	2.8	0.3	0.4	0.2	0.0	0.0	0.0	0.1
70-465	0.45	2.58	8.3	71.9	654.2	2.8	2.7	0.3	0.4	0.1	0.0	0.0	0.0	0.1
70-470	0.38	8.55	23.4	203.3	1,850.2	7.9	7.5	0.9	1.0	0.4	0.0	0.1	0.0	0.2
70-475	0.46	229.14	751.1	6,531.1	59,432.7	254.1	242.3	29.8	33.0	13.6	0.1	1.6	1.1	7.4
70-480	0.60	0.31	1.3	11.5	104.8	0.4	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-485	0.45	13.36	42.8	372.2	3,387.5	14.5	13.8	1.7	1.9	0.8	0.0	0.1	0.1	0.4
70-490	0.47	48.75	162.9	1,416.8	12,892.6	55.1	52.6	6.5	7.2	3.0	0.0	0.4	0.2	1.6
70-495	0.45	7.74	24.8	215.7	1,962.5	8.4	8.0	1.0	1.1	0.4	0.0	0.1	0.0	0.2
70-500	0.45	0.56	1.8	15.6	142.0	0.6	0.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-505	0.41	8.12	23.8	207.0	1,883.3	8.1	7.7	0.9	1.0	0.4	0.0	0.1	0.0	0.2
70-510	0.45	41.82	134.4	1,169.0	10,638.2	45.5	43.4	5.3	5.9	2.4	0.0	0.3	0.2	1.3
70-515	0.47	62.73	209.9	1,825.2	16,609.6	71.0	67.7	8.3	9.2	3.8	0.0	0.5	0.3	2.1
70-520	0.45	6.05	19.4	168.6	1,534.0	6.6	6.3	0.8	0.9	0.4	0.0	0.0	0.0	0.2
70-525	0.45	6.23	20.0	173.6	1,579.6	6.8	6.4	0.8	0.9	0.4	0.0	0.0	0.0	0.2
70-530	0.45	1.67	5.4	46.5	423.4	1.8	1.7	0.2	0.2	0.1	0.0	0.0	0.0	0.1
70-535	0.45	30.24	97.1	844.5	7,685.2	32.9	31.3	3.9	4.3	1.8	0.0	0.2	0.1	1.0
70-540	0.21	5.1	7.8	67.4	613.4	2.6	2.5	0.3	0.3	0.1	0.0	0.0	0.0	0.1
70-545	0.45	1.89	6.1	52.7	479.2	2.0	2.0	0.2	0.3	0.1	0.0	0.0	0.0	0.1
70-550	0.26	1.3	2.4	20.8	189.6	0.8	0.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-555	0.45	1.73	5.5	48.2	438.6	1.9	1.8	0.2	0.2	0.1	0.0	0.0	0.0	0.1
70-560	0.45	3.33	10.7	92.8	844.3	3.6	3.4	0.4	0.5	0.2	0.0	0.0	0.0	0.1
70-565	0.24	16.63	28.5	247.7	2,254.0	9.6	9.2	1.1	1.3	0.5	0.0	0.1	0.0	0.3
70-570	0.45	1.23	3.9	34.3	311.9	1.3	1.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0
70-575	0.45	15.39	49.3	428.4	3,898.3	16.7	15.9	2.0	2.2	0.9	0.0	0.1	0.1	0.5
70-580	0.43	119.93	370.4	3,221.3	29,313.6	125.3	119.5	14.7	16.3	6.7	0.0	0.8	0.6	3.6
71-010	0.10	1.12	0.8	6.9	63.1	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71-020	0.45	14.05	45.0	391.5	3,562.4	15.2	14.5	1.8	2.0	0.8	0.0	0.1	0.1	0.4
71-030	0.45	28.58	92.1	800.7	7,286.1	31.1	29.7	3.7	4.0	1.7	0.0	0.2	0.1	0.9
71-040	0.22	20.93	32.7	284.4	2,588.4	11.1	10.6	1.3	1.4	0.6	0.0	0.1	0.0	0.3
71-050	0.46	120.42	392.7	3,414.9	31,075.3	132.8	126.7	15.6	17.2	7.1	0.0	0.9	0.6	3.9
71-060	0.45	3.11	10.0	86.7	788.5	3.4	3.2	0.4	0.4	0.2	0.0	0.0	0.0	0.1
71-070	0.00	386.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71-080	0.46	101.79	330.7	2,875.7	26,169.3	111.9	106.7	13.1	14.5	6.0	0.0	0.7	0.5	3.2
71-090	0.45	6.5	20.6	179.3	1,631.8	7.0	6.7	0.8	0.9	0.4	0.0	0.0	0.0	0.2
71-100	0.10	1.99	1.4	12.3	112.1	0.5	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
72-010	0.18	17.32	21.6	187.8	1,708.8	7.3	7.0	0.9	0.9	0.4	0.0	0.0	0.0	0.2
72-020	0.40	24.7	69.5	604.3	5,499.2	23.5	22.4	2.8	3.1	1.3	0.0	0.2	0.1	0.7
72-030	0.10	5.25	3.7	32.5	295.8	1.3	1.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0
72-040	0.42	166.54	493.9	4,295.2	39,086.4	167.1	159.4	19.6	21.7	9.0	0.1	1.1	0.7	4.9
72-050	0.10	5.16	3.7	31.9	290.7	1.2	1.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0
72-060	0.36	113.04	291.1	2,531.7	23,038.8	98.5	93.9	11.6	12.8	5.3	0.0	0.6	0.4	2.9
72-070	0.10	2.21	1.6	13.7	124.5	0.5	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
72-080	0.60	4.74	20.3	176.1	1,602.5	6.9	6.5	0.8	0.9	0.4	0.0	0.0	0.0	0.2
72-090	0.45	68.71	218.8	1,902.4	17,312.0	74.0	70.6	8.7	9.6	4.0	0.0	0.5	0.3	2.1
72-100	0.46	68.32	225.2	1,958.6	17,823.3	76.2	72.7	9.0	9.9	4.1	0.0	0.5	0.3	2.2
72-110	0.10	3.22	2.3	19.9	181.4	0.8	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
72-120	0.45	62.98	201.8	1,754.8	15,968.7	68.3	65.1	8.0	8.9	3.7	0.0	0.4	0.3	2.0
72-130	0.46	58.06	188.7	1,640.5	14,928.3	63.8	60.9	7.5	8.3	3.4	0.0	0.4	0.3	1.9
72-140	0.10	10.19	7.3	63.1	574.2	2.5	2.3	0.3	0.3	0.1	0.0	0.0	0.0	0.1
72-150	0.10	4.76	3.4	29.5	268.2	1.1	1.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
72-160	0.10	4.55	3.2	28.2	256.4	1.1	1.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
73-010	0.44	20.76	64.9	564.1	5,133.7	21.9	20.9	2.6	2.8	1.2	0.0	0.1	0.1	0.6
73-020	0.44	57.47	181.1	1,574.9	14,331.4	61.3	58.4	7.2	8.0	3.3	0.0	0.4	0.3	1.8
73-030	0.10	21.56	15.4	133.5	1,214.8	5.2	5.0	0.6	0.7	0.3	0.0	0.0	0.0	0.2
74-010	0.48	44.39	151.3	1,315.6	11,972.1	51.2	48.8	6.0	6.6	2.7	0.0	0.3	0.2	1.5
74-020	0.45	4.41	14.1	122.9	1,118.2	4.8	4.6	0.6	0.6	0.3	0.0	0.0	0.0	0.1
75-005	0.45	12.39	39.7	344.8	3,137.7	13.4	12.8	1.6	1.7	0.7	0.0	0.1	0.1	0.4
75-010	0.60	3.65	15.6	135.6	1,234.0	5.3	5.0	0.6	0.7	0.3	0.0	0.0	0.0	0.2
75-020	0.45	1.53	4.9	42.6	387.9	1.7	1.6	0.2	0.2	0.1	0.0	0.0	0.0	0.0
75-030	0.45	8.38	26.9	233.5	2,124.8	9.1	8.7	1.1	1.2	0.5	0.0	0.1	0.0	0.3
75-040	0.45	14.74	47.2	410.7	3,737.4	16.0	15.2	1.9	2.1	0.9	0.0	0.1	0.1	0.5
76-010	0.46	907.31	2,996.6	26,057.8	237,126.0	1,013.6	966.7	119.1	131.6	54.3	0.3	6.5	4.5	29.4
76-020	0.46	88.62	287.5	2,500.4	22,753.2	97.3	92.8	11.4	12.6	5.2	0.0	0.6	0.4	2.8
76-030	0.45	7.55	24.2	210.4	1,914.3	8.2	7.8	1.0	1.1	0.4	0.0	0.1	0.0	0.2
76-040	0.19	4.67	6.2	53.8	489.8	2.1	2.0	0.2	0.3	0.1	0.0	0.0	0.0	0.1
76-050	0.00	2.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81-010	0.10	31.17	22.2	193.0	1,756.3	7.5	7.2	0.9	1.0	0.4	0.0	0.0	0.0	0.2
82-010	0.49	23.53	81.5	708.9	6,451.0	27.6	26.3	3.2	3.6	1.5	0.0	0.2	0.1	0.8
82-020	0.45	73.45	237.9	2,068.4	18,822.7	80.5	76.7	9.5	10.4	4.3	0.0	0.5	0.4	2.3
82-030	0.45	90.04	291.5	2,535.0	23,068.3	98.6	94.0	11.6	12.8	5.3	0.0	0.6	0.4	2.9
82-040	0.46	98.49	325.3	2,829.0	25,744.0	110.0	105.0	12.9	14.3	5.9	0.0	0.7	0.5	3.2
83-010	0.45	6.59	21.1	183.6	1,670.9	7.1	6.8	0.8	0.9	0.4	0.0	0.0	0.0	0.2
83-015	0.45	0.99	3.2	27.6	251.0	1.1	1.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
83-020	0.43	85.96	266.1	2,314.1	21,058.0	90.0	85.9	10.6	11.7	4.8	0.0	0.6	0.4	2.6
83-025	0.45	51.23	164.2	1,427.4	12,989.5	55.5	53.0	6.5	7.2	3.0	0.0	0.4	0.2	1.6
83-030	0.60	0.82	3.5	30.5	277.2	1.2	1.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0
83-040	0.10	1.08	0.8	6.7	60.9	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83-050	0.45	40.4	129.8	1,128.7	10,271.5	43.9	41.9	5.2	5.7	2.4	0.0	0.3	0.2	1.3
83-060	0.45	10.05	32.2	280.0	2,548.2	10.9	10.4	1.3	1.4	0.6	0.0	0.1	0.0	0.3
83-070	0.10	1.19	0.8	7.4	67.1	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83-080	0.48	178.63	604.7	5,258.5	47,852.6	204.6	195.1	24.0	26.6	11.0	0.1	1.3	0.9	5.9
83-090	0.41	9.16	26.7	232.4	2,115.0	9.0	8.6	1.1	1.2	0.5	0.0	0.1	0.0	0.3
84-010	0.47	21.56	72.2	627.9	5,713.7	24.4	23.3	2.9	3.2	1.3	0.0	0.2	0.1	0.7

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

2005 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/05 - 03/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Winter/snowmelt Median Event Mean Concentration			23.0	200	1820	7.78	7.420	0.914	1.010	0.417	0.002500	0.050	0.035	0.226
Precipitation (meters)	0.09													
85-010	0.10	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WINTER (SNOWMELT) SEASONAL SUMMATION (kg)			**96,182.78**	**836,371.98**	**7,610,984.98**	**32,534.87**	**31,029.40**	**3,822.22**	**4,223.68**	**1,743.84**	**10.45**	**208.26**	**145.53**	**945.10**

2005 SPRING POLLUTANT LOADINGS BY OUTFALL

2005 SPRING POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (04/01/05 - 05/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Spring Median Event Mean Concentration			11.0	90	89	2.48	1.510	0.274	0.421	0.111	0.002500	0.015	0.0225	0.117
Precipitation (meters)	0.129													
10-010	0.43	113.55	239.1	1,956.4	1,934.7	53.9	32.8	6.0	9.2	2.4	0.1	0.3	0.5	2.5
10-020	0.45	7.81	17.2	140.4	138.8	3.9	2.4	0.4	0.7	0.2	0.0	0.0	0.0	0.2
10-030	0.10	4.05	2.0	16.2	16.0	0.4	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0
10-040	0.45	167.42	365.2	2,987.9	2,954.7	82.3	50.1	9.1	14.0	3.7	0.1	0.5	0.7	3.9
10-050	0.46	114.18	253.7	2,075.7	2,052.7	57.2	34.8	6.3	9.7	2.6	0.1	0.3	0.5	2.7
10-060	0.60	10.5	30.8	251.6	248.8	6.9	4.2	0.8	1.2	0.3	0.0	0.0	0.1	0.3
10-070	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-080	0.38	30.66	57.2	467.9	462.7	12.9	7.9	1.4	2.2	0.6	0.0	0.1	0.1	0.6
10-090A	0.00	0.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-090B	0.00	1.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-090C	0.54	12.77	33.8	276.2	273.1	7.6	4.6	0.8	1.3	0.3	0.0	0.0	0.1	0.4
10-090D	0.00	4.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-100	0.36	1392.1	2,464.7	20,165.9	19,941.8	555.7	338.3	61.4	94.3	24.9	0.6	3.4	5.0	26.2
10-110	0.47	300.11	683.4	5,591.6	5,529.5	154.1	93.8	17.0	26.2	6.9	0.2	0.9	1.4	7.3
10-120A/B	0.44	372.78	792.0	6,480.0	6,408.0	178.6	108.7	19.7	30.3	8.0	0.2	1.1	1.6	8.4
10-130	0.45	336.46	741.5	6,067.1	5,999.7	167.2	101.8	18.5	28.4	7.5	0.2	1.0	1.5	7.9
10-140a	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-140a,b	0.58	220.65	619.8	5,070.7	5,014.4	139.7	85.1	15.4	23.7	6.3	0.1	0.8	1.3	6.6
10-150	0.47	157.15	359.7	2,942.7	2,910.0	81.1	49.4	9.0	13.8	3.6	0.1	0.5	0.7	3.8
10-160	0.00	17	0.2	1.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-170	0.50	176.01	432.3	3,537.3	3,498.0	97.5	59.3	10.8	16.5	4.4	0.1	0.6	0.9	4.6
10-180	0.45	284.26	617.9	5,055.4	4,999.2	139.3	84.8	15.4	23.6	6.2	0.1	0.8	1.3	6.6
10-190	0.59	14.58	42.1	344.6	340.7	9.5	5.8	1.0	1.6	0.4	0.0	0.1	0.1	0.4
10-200	0.40	42.44	82.2	673.0	665.5	18.5	11.3	2.0	3.1	0.8	0.0	0.1	0.2	0.9
10-210	0.49	98.32	235.9	1,930.2	1,908.8	53.2	32.4	5.9	9.0	2.4	0.1	0.3	0.5	2.5
10-220	0.56	18.83	51.4	420.4	415.8	11.6	7.1	1.3	2.0	0.5	0.0	0.1	0.1	0.5
10-230	0.47	235.02	542.3	4,436.8	4,387.5	122.3	74.4	13.5	20.8	5.5	0.1	0.7	1.1	5.8
10-240	0.51	103.83	260.4	2,130.2	2,106.5	58.7	35.7	6.5	10.0	2.6	0.1	0.4	0.5	2.8
10-250	0.49	242.96	579.7	4,743.4	4,690.7	130.7	79.6	14.4	22.2	5.9	0.1	0.8	1.2	6.2
10-260	0.56	23.77	64.6	528.9	523.0	14.6	8.9	1.6	2.5	0.7	0.0	0.1	0.1	0.7
10-270	0.47	72.45	167.6	1,371.1	1,355.8	37.8	23.0	4.2	6.4	1.7	0.0	0.2	0.3	1.8
10-280	0.44	55.08	119.3	976.3	965.4	26.9	16.4	3.0	4.6	1.2	0.0	0.2	0.2	1.3
10-290	0.10	6.83	3.3	27.3	27.0	0.8	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
10-300	0.36	17.74	31.2	255.5	252.6	7.0	4.3	0.8	1.2	0.3	0.0	0.0	0.1	0.3
10-310	0.47	60.29	139.0	1,137.0	1,124.4	31.3	19.1	3.5	5.3	1.4	0.0	0.2	0.3	1.5
10-320	0.45	341.99	754.1	6,170.3	6,101.7	170.0	103.5	18.8	28.9	7.6	0.2	1.0	1.5	8.0
10-330	0.35	21.61	37.1	303.4	300.1	8.4	5.1	0.9	1.4	0.4	0.0	0.1	0.1	0.4
10-340	0.45	20.74	45.7	373.7	369.6	10.3	6.3	1.1	1.7	0.5	0.0	0.1	0.1	0.5
10-350	0.60	28.16	82.3	673.5	666.1	18.6	11.3	2.1	3.2	0.8	0.0	0.1	0.2	0.9
10-360	0.59	29.02	84.0	686.9	679.2	18.9	11.5	2.1	3.2	0.8	0.0	0.1	0.2	0.9
10-370	0.59	14.46	41.6	340.5	336.7	9.4	5.7	1.0	1.6	0.4	0.0	0.1	0.1	0.4
10-380	0.45	14.38	31.2	255.7	252.8	7.0	4.3	0.8	1.2	0.3	0.0	0.0	0.1	0.3
10-390	0.49	41.97	101.0	826.5	817.3	22.8	13.9	2.5	3.9	1.0	0.0	0.1	0.2	1.1
10-400A	0.10	1.07	0.5	4.3	4.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-400B	0.47	17.66	40.7	332.6	328.9	9.2	5.6	1.0	1.6	0.4	0.0	0.1	0.1	0.4
10-400C	0.57	50.25	138.8	1,135.4	1,122.8	31.3	19.1	3.5	5.3	1.4	0.0	0.2	0.3	1.5
10-410A	0.50	46.22	112.3	918.9	908.7	25.3	15.4	2.8	4.3	1.1	0.0	0.2	0.2	1.2
10-410B	0.32	21.29	32.9	269.0	266.0	7.4	4.5	0.8	1.3	0.3	0.0	0.0	0.1	0.3
10-410C	0.53	22.8	58.7	480.6	475.3	13.2	8.1	1.5	2.2	0.6	0.0	0.1	0.1	0.6
10-410D	0.60	27.34	80.1	655.4	648.1	18.1	11.0	2.0	3.1	0.8	0.0	0.1	0.2	0.9
10-410E	0.58	256.04	719.2	5,884.0	5,818.6	162.1	98.7	17.9	27.5	7.3	0.2	1.0	1.5	7.6
10-410F	0.59	37.92	108.9	890.8	880.9	24.5	14.9	2.7	4.2	1.1	0.0	0.1	0.2	1.2
10-420A	0.27	23.05	30.7	250.9	248.1	6.9	4.2	0.8	1.2	0.3	0.0	0.0	0.1	0.3
10-420B	0.00	10.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420C	0.00	7.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420D	0.00	20.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420E	0.59	127.89	366.3	2,997.2	2,963.9	82.6	50.3	9.1	14.0	3.7	0.1	0.5	0.7	3.9
10-430A	0.00	8.14	0.1	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430B	0.53	54.72	142.7	1,167.7	1,154.7	32.2	19.6	3.6	5.5	1.4	0.0	0.2	0.3	1.5
10-430C	0.48	44.83	105.1	860.1	850.5	23.7	14.4	2.6	4.0	1.1	0.0	0.1	0.2	1.1
10-430D	0.49	85.79	205.9	1,684.3	1,665.6	46.4	28.3	5.1	7.9	2.1	0.0	0.3	0.4	2.2
10-430E	0.56	86.66	235.9	1,929.8	1,908.4	53.2	32.4	5.9	9.0	2.4	0.1	0.3	0.5	2.5
10-430F	0.10	377.97	184.5	1,509.5	1,492.7	41.6	25.3	4.6	7.1	1.9	0.0	0.3	0.4	2.0
10-430G	0.50	125.89	304.5	2,491.6	2,463.9	68.7	41.8	7.6	11.7	3.1	0.1	0.4	0.6	3.2
10-430H	0.49	33.18	79.6	651.1	643.9	17.9	10.9	2.0	3.0	0.8	0.0	0.1	0.2	0.8
10-430I	0.59	32.61	93.7	766.6	758.1	21.1	12.9	2.3	3.6	0.9	0.0	0.1	0.2	1.0
10-430J	0.43	532.36	1,127.6	9,226.1	9,123.6	254.2	154.8	28.1	43.2	11.4	0.3	1.5	2.3	12.0
10-430K	0.48	337.06	785.9	6,429.7	6,358.3	177.2	107.9	19.6	30.1	7.9	0.2	1.1	1.6	8.4
10-430L	0.45	84.4	185.7	1,519.3	1,502.5	41.9	25.5	4.6	7.1	1.9	0.0	0.3	0.4	2.0
10-430M	0.54	75.94	201.0	1,644.9	1,626.7	45.3	27.6	5.0	7.7	2.0	0.0	0.3	0.4	2.1
10-430N	0.44	26.43	57.3	468.6	463.4	12.9	7.9	1.4	2.2	0.6	0.0	0.1	0.1	0.6
10-430O	0.00	109.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430P	0.00	229.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430Q	0.10	8.03	3.9	32.1	31.7	0.9	0.5	0.1	0.2	0.0	0.0	0.0	0.0	0.0
10-430R	0.47	150.32	343.0	2,806.4	2,775.2	77.3	47.1	8.5	13.1	3.5	0.1	0.5	0.7	3.6
10-430S	0.10	5.15	2.5	20.6	20.3	0.6	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
10-430T	0.46	262.47	585.6	4,791.6	4,738.4	132.0	80.4	14.6	22.4	5.9	0.1	0.8	1.2	6.2
10-430U	0.47	431.37	989.3	8,094.5	8,004.5	223.0	135.8	24.6	37.9	10.0	0.2	1.3	2.0	10.5
10-430V	0.46	329.11	746.7	6,109.6	6,041.7	168.4	102.5	18.6	28.6	7.5	0.2	1.0	1.5	7.9
10-440A	0.46	23.18	51.8	424.1	419.4	11.7	7.1	1.3	2.0	0.5	0.0	0.1	0.1	0.6
10-440B	0.49	34.23	82.3	673.7	666.2	18.6	11.3	2.1	3.2	0.8	0.0	0.1	0.2	0.9
10-440C/D	0.00	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-440E	0.51	831.25	2,086.5	17,071.3	16,881.6	470.4	286.4	52.0	79.9	21.1	0.5	2.8	4.3	22.2
10-440F	0.46	538.85	1,210.5	9,904.0	9,793.9	272.9	166.2	30.2	46.3	12.2	0.3	1.7	2.5	12.9
10-450A	0.00	343.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-450B	0.52	3.41	8.6	70.4	69.6	1.9	1.2	0.2	0.3	0.1	0.0	0.0	0.0	0.1

2005 SPRING POLLUTANT LOADINGS BY OUTFALL

2005 SPRING POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (04/01/05 - 05/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Spring Median Event Mean Concentration			11.0	90	89	2.48	1.510	0.274	0.421	0.111	0.002500	0.015	0.0225	0.117
Precipitation (meters)	0.129													
10-450C	0.59	55.64	161.3	1,319.6	1,304.9	36.4	22.1	4.0	6.2	1.6	0.0	0.2	0.3	1.7
10-450D	0.45	4.62	10.1	83.0	82.1	2.3	1.4	0.3	0.4	0.1	0.0	0.0	0.0	0.1
10-450E	0.44	3.2	6.9	56.5	55.9	1.6	0.9	0.2	0.3	0.1	0.0	0.0	0.0	0.1
10-450F	0.46	158.55	355.6	2,909.1	2,876.8	80.2	48.8	8.9	13.6	3.6	0.1	0.5	0.7	3.8
10-450G/H	0.48	75.02	175.9	1,439.6	1,423.6	39.7	24.2	4.4	6.7	1.8	0.0	0.2	0.4	1.9
10-450I	0.49	243.64	584.2	4,779.7	4,726.6	131.7	80.2	14.6	22.4	5.9	0.1	0.8	1.2	6.2
10-450J	0.49	17.16	40.7	332.7	329.0	9.2	5.6	1.0	1.6	0.4	0.0	0.1	0.1	0.4
10-450K	0.58	37.01	104.6	856.2	846.7	23.6	14.4	2.6	4.0	1.1	0.0	0.1	0.2	1.1
10-450L	0.51	213.41	526.1	4,304.6	4,256.8	118.6	72.2	13.1	20.1	5.3	0.1	0.7	1.1	5.6
10-460	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460A	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460B	0.52	7.29	18.4	150.5	148.8	4.1	2.5	0.5	0.7	0.2	0.0	0.0	0.0	0.2
10-460C/D/F	0.00	159.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460E	0.49	231.41	557.8	4,564.0	4,513.3	125.8	76.6	13.9	21.3	5.6	0.1	0.8	1.1	5.9
10-460F	0.49	14.75	35.6	291.4	288.2	8.0	4.9	0.9	1.4	0.4	0.0	0.0	0.1	0.4
10-460G	0.51	79.66	198.6	1,625.1	1,607.0	44.8	27.3	4.9	7.6	2.0	0.0	0.3	0.4	2.1
10-460H	0.48	12.35	28.9	236.5	233.8	6.5	4.0	0.7	1.1	0.3	0.0	0.0	0.1	0.3
10-460I	0.00	72.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460J	0.46	5.36	12.1	99.3	98.2	2.7	1.7	0.3	0.5	0.1	0.0	0.0	0.0	0.1
10-460K	0.36	5.48	9.6	78.7	77.8	2.2	1.3	0.2	0.4	0.1	0.0	0.0	0.0	0.1
10-460L	0.46	3.5	7.9	64.8	64.1	1.8	1.1	0.2	0.3	0.1	0.0	0.0	0.0	0.1
10-460M	0.48	9.55	22.3	182.5	180.5	5.0	3.1	0.6	0.9	0.2	0.0	0.0	0.0	0.2
10-460N	0.45	3.85	8.5	69.2	68.4	1.9	1.2	0.2	0.3	0.1	0.0	0.0	0.0	0.1
10-460O	0.45	4.15	9.2	75.2	74.4	2.1	1.3	0.2	0.4	0.1	0.0	0.0	0.0	0.1
10-460P	0.45	4.34	9.5	78.0	77.1	2.1	1.3	0.2	0.4	0.1	0.0	0.0	0.0	0.1
10-460Q	0.56	19.73	54.3	444.5	439.6	12.2	7.5	1.4	2.1	0.5	0.0	0.1	0.1	0.6
10-460R	0.00	51.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460S	0.56	233.54	643.3	5,263.1	5,204.6	145.0	88.3	16.0	24.6	6.5	0.1	0.9	1.3	6.8
10-465	0.10	8.56	4.2	34.2	33.8	0.9	0.6	0.1	0.2	0.0	0.0	0.0	0.0	0.0
10-470	0.38	25.6	47.7	390.2	385.8	10.8	6.5	1.2	1.8	0.5	0.0	0.1	0.1	0.5
10-480	0.58	39.66	112.3	918.9	908.7	25.3	15.4	2.8	4.3	1.1	0.0	0.2	0.2	1.2
10-485	0.00	7.27	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-490	0.43	150.96	319.4	2,613.6	2,584.6	72.0	43.9	8.0	12.2	3.2	0.1	0.4	0.7	3.4
10-500A	0.26	26.21	33.6	274.7	271.7	7.6	4.6	0.8	1.3	0.3	0.0	0.0	0.1	0.4
10-500B	0.46	8.48	19.1	155.9	154.1	4.3	2.6	0.5	0.7	0.2	0.0	0.0	0.0	0.2
10-500C	0.44	111.36	236.6	1,936.2	1,914.7	53.4	32.5	5.9	9.1	2.4	0.1	0.3	0.5	2.5
10-500D	0.24	3.83	4.5	36.4	36.0	1.0	0.6	0.1	0.2	0.0	0.0	0.0	0.0	0.0
10-500E	0.53	23.34	60.7	496.3	490.8	13.7	8.3	1.5	2.3	0.6	0.0	0.1	0.1	0.6
10-500F	0.49	12.04	29.0	237.4	234.8	6.5	4.0	0.7	1.1	0.3	0.0	0.0	0.1	0.3
10-500G	0.00	112.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-505	0.10	7.85	3.8	31.4	31.0	0.9	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
10-510	0.51	62.36	154.8	1,266.7	1,252.7	34.9	21.3	3.9	5.9	1.6	0.0	0.2	0.3	1.6
10-520	0.00	139.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-530	0.45	116.15	255.6	2,091.0	2,067.8	57.6	35.1	6.4	9.8	2.6	0.1	0.3	0.5	2.7
10-540	0.12	53.9	31.2	254.9	252.1	7.0	4.3	0.8	1.2	0.3	0.0	0.0	0.1	0.3
10-550	0.46	25.83	58.0	474.4	469.2	13.1	8.0	1.4	2.2	0.6	0.0	0.1	0.1	0.6
10-560A/B	0.44	600.63	1,282.6	10,494.2	10,377.6	289.2	176.1	31.9	49.1	12.9	0.3	1.7	2.6	13.6
10-570A	0.54	14.64	38.9	317.9	314.4	8.8	5.3	1.0	1.5	0.4	0.0	0.1	0.1	0.4
10-570B	0.44	228.18	486.2	3,977.9	3,933.7	109.6	66.7	12.1	18.6	4.9	0.1	0.7	1.0	5.2
10-580	0.45	73.39	160.8	1,315.5	1,300.9	36.2	22.1	4.0	6.2	1.6	0.0	0.2	0.3	1.7
10-600	0.48	89.24	210.7	1,723.6	1,704.4	47.5	28.9	5.2	8.1	2.1	0.0	0.3	0.4	2.2
10-610	0.46	25.6	57.3	468.6	463.4	12.9	7.9	1.4	2.2	0.6	0.0	0.1	0.1	0.6
10-620	0.00	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630A	0.10	6.24	3.0	24.9	24.6	0.7	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
10-630B	0.45	4.68	10.3	84.1	83.2	2.3	1.4	0.3	0.4	0.1	0.0	0.0	0.0	0.1
10-630C	0.48	96.03	226.5	1,852.9	1,832.3	51.1	31.1	5.6	8.7	2.3	0.1	0.3	0.5	2.4
10-630D	0.45	6.37	14.0	114.5	113.2	3.2	1.9	0.3	0.5	0.1	0.0	0.0	0.0	0.1
10-630E	0.45	8.52	18.7	153.1	151.4	4.2	2.6	0.5	0.7	0.2	0.0	0.0	0.0	0.2
10-630F	0.54	17.56	46.3	378.9	374.7	10.4	6.4	1.2	1.8	0.5	0.0	0.1	0.1	0.5
10-630G	0.45	5.9	13.0	106.0	104.9	2.9	1.8	0.3	0.5	0.1	0.0	0.0	0.0	0.1
10-630H	0.30	25.63	37.9	310.0	306.6	8.5	5.2	0.9	1.5	0.4	0.0	0.1	0.1	0.4
10-630I	0.47	12.48	28.3	231.8	229.2	6.4	3.9	0.7	1.1	0.3	0.0	0.0	0.1	0.3
10-630J	0.55	14.69	39.7	324.8	321.2	9.0	5.4	1.0	1.5	0.4	0.0	0.1	0.1	0.4
10-630K	0.47	95.29	220.1	1,801.1	1,781.1	49.6	30.2	5.5	8.4	2.2	0.1	0.3	0.5	2.3
10-630L	0.52	100.42	255.4	2,089.4	2,066.2	57.6	35.1	6.4	9.8	2.6	0.1	0.3	0.5	2.7
10-630M	0.50	11.71	28.4	232.2	229.6	6.4	3.9	0.7	1.1	0.3	0.0	0.0	0.1	0.3
10-630N	0.45	8.45	18.6	151.9	150.2	4.2	2.5	0.5	0.7	0.2	0.0	0.0	0.0	0.2
10-630O	0.36	5.77	10.3	83.9	83.0	2.3	1.4	0.3	0.4	0.1	0.0	0.0	0.0	0.1
10-630P/Q	0.00	67.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630R	0.33	83.89	136.8	1,118.9	1,106.5	30.8	18.8	3.4	5.2	1.4	0.0	0.2	0.3	1.5
10-630S	0.22	37.02	39.3	321.4	317.8	8.9	5.4	1.0	1.5	0.4	0.0	0.1	0.1	0.4
10-630T	0.56	7.72	21.2	173.4	171.5	4.8	2.9	0.5	0.8	0.2	0.0	0.0	0.0	0.2
10-630U	0.52	115.42	294.7	2,411.2	2,384.4	66.4	40.5	7.3	11.3	3.0	0.1	0.4	0.6	3.1
10-630V	0.11	33.85	17.4	142.8	141.2	3.9	2.4	0.4	0.7	0.2	0.0	0.0	0.0	0.2
10-630W	0.47	23.68	54.8	448.0	443.0	12.3	7.5	1.4	2.1	0.6	0.0	0.1	0.1	0.6
10-630X	0.44	14.78	31.9	261.1	258.2	7.2	4.4	0.8	1.2	0.3	0.0	0.0	0.1	0.3
10-630Y	0.00	112.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630Z	0.47	45.66	104.9	858.5	849.0	23.7	14.4	2.6	4.0	1.1	0.0	0.1	0.2	1.1
10-640	0.46	258.18	576.4	4,715.7	4,663.3	129.9	79.1	14.4	22.1	5.8	0.1	0.8	1.2	6.1
10-650	0.56	19.53	53.1	434.5	429.6	12.0	7.3	1.3	2.0	0.5	0.0	0.1	0.1	0.6
10-660	0.46	306.37	692.8	5,668.1	5,605.2	156.2	95.1	17.3	26.5	7.0	0.2	0.9	1.4	7.4
10-670	0.45	137.88	302.4	2,474.3	2,446.8	68.2	41.5	7.5	11.6	3.1	0.1	0.4	0.6	3.2
10-680	0.46	707.95	1,584.5	12,963.7	12,819.7	357.2	217.5	39.5	60.6	16.0	0.4	2.2	3.2	16.9
10-690	0.50	70.63	172.5	1,411.2	1,395.5	38.9	23.7	4.3	6.6	1.7	0.0	0.2	0.4	1.8
10-700	0.46	222.07	503.3	4,118.3	4,072.5	113.5	69.1	12.5	19.3	5.1	0.1	0.7	1.0	5.4
10-710	0.33	29.95	48.7	398.5	394.0	11.0	6.7	1.2	1.9	0.5	0.0	0.1	0.1	0.5

2005 SPRING POLLUTANT LOADINGS BY OUTFALL

2005 SPRING POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (04/01/05 - 05/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Spring Median Event Mean Concentration			11.0	90	89	2.48	1.510	0.274	0.421	0.111	0.002500	0.015	0.0225	0.117
Precipitation (meters)	0.129													
10-720A	0.44	15.77	34.1	279.3	276.2	7.7	4.7	0.9	1.3	0.3	0.0	0.0	0.1	0.4
10-720B	0.48	422.18	992.8	8,123.1	8,032.8	223.8	136.3	24.7	38.0	10.0	0.2	1.4	2.0	10.6
10-720C	0.43	26.35	55.2	451.9	446.9	12.5	7.6	1.4	2.1	0.6	0.0	0.1	0.1	0.6
10-720D	0.46	22.95	51.0	417.3	412.6	11.5	7.0	1.3	2.0	0.5	0.0	0.1	0.1	0.5
10-720E	0.46	18.39	40.9	334.7	331.0	9.2	5.6	1.0	1.6	0.4	0.0	0.1	0.1	0.4
10-720F	0.48	317.75	744.2	6,088.8	6,021.1	167.8	102.2	18.5	28.5	7.5	0.2	1.0	1.5	7.9
10-720G	0.00	13.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-720H	0.45	4.55	10.0	81.8	80.9	2.3	1.4	0.2	0.4	0.1	0.0	0.0	0.0	0.1
10-720I	0.45	87.27	190.0	1,554.3	1,537.0	42.8	26.1	4.7	7.3	1.9	0.0	0.3	0.4	2.0
10-720J	0.36	3.71	6.5	52.9	52.3	1.5	0.9	0.2	0.2	0.1	0.0	0.0	0.0	0.1
10-720K	0.55	32.76	87.8	718.4	710.4	19.8	12.1	2.2	3.4	0.9	0.0	0.1	0.2	0.9
10-720L	0.45	4.57	10.0	82.1	81.2	2.3	1.4	0.3	0.4	0.1	0.0	0.0	0.0	0.1
20-010	0.42	93.99	192.6	1,575.8	1,558.3	43.4	26.4	4.8	7.4	1.9	0.0	0.3	0.4	2.0
20-020	0.44	15.09	32.3	264.4	261.4	7.3	4.4	0.8	1.2	0.3	0.0	0.0	0.1	0.3
20-030	0.45	7.95	17.5	142.9	141.3	3.9	2.4	0.4	0.7	0.2	0.0	0.0	0.0	0.2
20-040	0.37	6.79	12.4	101.1	100.0	2.8	1.7	0.3	0.5	0.1	0.0	0.0	0.0	0.1
20-050	0.00	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-060	0.45	5.91	13.0	106.2	105.0	2.9	1.8	0.3	0.5	0.1	0.0	0.0	0.0	0.1
20-070	0.44	39.07	84.6	691.8	684.1	19.1	11.6	2.1	3.2	0.9	0.0	0.1	0.2	0.9
20-080	0.45	33.72	74.6	610.6	603.8	16.8	10.2	1.9	2.9	0.8	0.0	0.1	0.2	0.8
20-090	0.55	9.95	26.8	219.6	217.2	6.1	3.7	0.7	1.0	0.3	0.0	0.0	0.1	0.3
20-100	0.10	0.99	0.5	4.0	3.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-110	0.24	216.04	253.0	2,070.0	2,047.0	57.0	34.7	6.3	9.7	2.6	0.1	0.3	0.5	2.7
20-120	0.47	10.22	23.3	190.8	188.7	5.3	3.2	0.6	0.9	0.2	0.0	0.0	0.0	0.2
20-130	0.45	16.12	35.4	289.7	286.5	8.0	4.9	0.9	1.4	0.4	0.0	0.0	0.1	0.4
20-140	0.44	2.97	6.4	52.3	51.8	1.4	0.9	0.2	0.2	0.1	0.0	0.0	0.0	0.1
20-150	0.45	14.48	31.8	260.2	257.3	7.2	4.4	0.8	1.2	0.3	0.0	0.0	0.1	0.3
20-160	0.54	3.21	8.5	69.3	68.5	1.9	1.2	0.2	0.3	0.1	0.0	0.0	0.0	0.1
20-170	0.37	4.94	9.0	73.5	72.7	2.0	1.2	0.2	0.3	0.1	0.0	0.0	0.0	0.1
20-180	0.51	5.3	13.1	107.1	105.9	3.0	1.8	0.3	0.5	0.1	0.0	0.0	0.0	0.1
20-190	0.45	1.35	3.0	24.3	24.0	0.7	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
20-200	0.45	13.84	30.4	248.7	246.0	6.9	4.2	0.8	1.2	0.3	0.0	0.0	0.1	0.3
20-210A	0.44	92.9	199.2	1,629.7	1,611.6	44.9	27.3	5.0	7.6	2.0	0.0	0.3	0.4	2.1
20-210B	0.50	620.78	1,528.9	12,509.0	12,370.0	344.7	209.9	38.1	58.5	15.4	0.3	2.1	3.1	16.3
20-220	0.46	26.38	59.4	485.7	480.3	13.4	8.1	1.5	2.3	0.6	0.0	0.1	0.1	0.6
20-230	0.00	21.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-240	0.48	30.06	70.7	578.4	572.0	15.9	9.7	1.8	2.7	0.7	0.0	0.1	0.1	0.8
20-250	0.57	6.28	17.5	143.4	141.8	4.0	2.4	0.4	0.7	0.2	0.0	0.0	0.0	0.2
20-260	0.60	3.5	10.3	83.9	82.9	2.3	1.4	0.3	0.4	0.1	0.0	0.0	0.0	0.1
20-270	0.48	42.81	99.6	815.0	806.0	22.5	13.7	2.5	3.8	1.0	0.0	0.1	0.2	1.1
20-280	0.54	8.98	23.6	192.7	190.6	5.3	3.2	0.6	0.9	0.2	0.0	0.0	0.0	0.3
20-290	0.00	4.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-010	0.45	49.49	108.3	886.0	876.1	24.4	14.9	2.7	4.1	1.1	0.0	0.1	0.2	1.2
40-010	0.45	719.17	1,573.1	12,870.5	12,727.5	354.7	215.9	39.2	60.2	15.9	0.4	2.1	3.2	16.7
40-020	0.45	15.36	33.7	276.0	273.0	7.6	4.6	0.8	1.3	0.3	0.0	0.0	0.1	0.4
40-030	0.42	51.02	104.0	851.2	841.7	23.5	14.3	2.6	4.0	1.0	0.0	0.1	0.2	1.1
40-040	0.43	65.39	138.6	1,133.9	1,121.3	31.2	19.0	3.5	5.3	1.4	0.0	0.2	0.3	1.5
40-050	0.45	10.28	22.6	184.7	182.7	5.1	3.1	0.6	0.9	0.2	0.0	0.0	0.0	0.2
40-060	0.45	3.2	7.0	57.5	56.9	1.6	1.0	0.2	0.3	0.1	0.0	0.0	0.0	0.1
40-070	0.38	7.98	14.7	120.6	119.2	3.3	2.0	0.4	0.6	0.1	0.0	0.0	0.0	0.2
40-080	0.41	60.51	120.6	986.9	975.9	27.2	16.6	3.0	4.6	1.2	0.0	0.2	0.2	1.3
40-090	0.46	20.65	46.9	383.4	379.1	10.6	6.4	1.2	1.8	0.5	0.0	0.1	0.1	0.5
40-100	0.00	20.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-110	0.44	2.61	5.7	46.3	45.7	1.3	0.8	0.1	0.2	0.1	0.0	0.0	0.0	0.1
40-120	0.44	65.87	140.9	1,152.9	1,140.1	31.8	19.3	3.5	5.4	1.4	0.0	0.2	0.3	1.5
40-130	0.45	35.01	77.2	631.8	624.8	17.4	10.6	1.9	3.0	0.8	0.0	0.1	0.2	0.8
40-140	0.35	125.46	212.9	1,742.3	1,722.9	48.0	29.2	5.3	8.2	2.1	0.0	0.3	0.4	2.3
40-150	0.47	24.31	56.2	459.9	454.8	12.7	7.7	1.4	2.2	0.6	0.0	0.1	0.1	0.6
40-160	0.49	30.99	74.8	611.8	605.0	16.9	10.3	1.9	2.9	0.8	0.0	0.1	0.2	0.8
40-170	0.00	194.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-180	0.54	16.8	44.1	361.2	357.2	10.0	6.1	1.1	1.7	0.4	0.0	0.1	0.1	0.5
40-190	0.53	65.53	169.1	1,383.8	1,368.5	38.1	23.2	4.2	6.5	1.7	0.0	0.2	0.3	1.8
40-200	0.46	24.75	55.9	457.0	451.9	12.6	7.7	1.4	2.1	0.6	0.0	0.1	0.1	0.6
40-210	0.54	17.26	45.9	375.6	371.4	10.3	6.3	1.1	1.8	0.5	0.0	0.1	0.1	0.5
40-220	0.47	100.58	229.5	1,877.8	1,857.0	51.7	31.5	5.7	8.8	2.3	0.1	0.3	0.5	2.4
40-230	0.44	13.78	29.9	244.8	242.1	6.7	4.1	0.7	1.1	0.3	0.0	0.0	0.1	0.3
40-240	0.00	340.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-250	0.60	1.15	3.4	27.6	27.3	0.8	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
40-260	0.45	3.49	7.7	62.7	62.0	1.7	1.1	0.2	0.3	0.1	0.0	0.0	0.0	0.1
40-270	0.45	9.59	21.1	172.3	170.4	4.7	2.9	0.5	0.8	0.2	0.0	0.0	0.0	0.2
40-280	0.53	12.76	32.8	268.0	265.0	7.4	4.5	0.8	1.3	0.3	0.0	0.0	0.1	0.3
40-290	0.51	13.73	34.3	280.8	277.6	7.7	4.7	0.9	1.3	0.3	0.0	0.0	0.1	0.4
40-300	0.52	10.38	26.4	216.0	213.6	6.0	3.6	0.7	1.0	0.3	0.0	0.0	0.1	0.3
40-310	0.45	97.86	216.2	1,769.0	1,749.4	48.7	29.7	5.4	8.3	2.2	0.0	0.3	0.4	2.3
40-320	0.60	9.43	27.6	226.0	223.5	6.2	3.8	0.7	1.1	0.3	0.0	0.0	0.1	0.3
40-330	0.59	15.34	44.4	363.1	359.1	10.0	6.1	1.1	1.7	0.4	0.0	0.1	0.1	0.5
40-340	0.53	35.27	91.7	750.7	742.3	20.7	12.6	2.3	3.5	0.9	0.0	0.1	0.2	1.0
40-350	0.60	8.99	26.3	215.4	213.0	5.9	3.6	0.7	1.0	0.3	0.0	0.0	0.1	0.3
40-360	0.60	8.09	23.7	193.9	191.7	5.3	3.3	0.6	0.9	0.2	0.0	0.0	0.0	0.3
40-370	0.58	12.41	35.0	286.7	283.5	7.9	4.8	0.9	1.3	0.4	0.0	0.0	0.1	0.4
40-380	0.39	24.92	47.9	391.5	387.2	10.8	6.6	1.2	1.8	0.5	0.0	0.1	0.1	0.5
40-390	0.58	5.72	16.2	132.5	131.0	3.7	2.2	0.4	0.6	0.2	0.0	0.0	0.0	0.2
40-400	0.10	1.07	0.5	4.3	4.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41-010	0.38	94.73	174.5	1,428.0	1,412.1	39.3	24.0	4.3	6.7	1.8	0.0	0.2	0.4	1.9
41-020	0.00	14.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41-030	0.50	60.47	148.2	1,212.3	1,198.8	33.4	20.3	3.7	5.7	1.5	0.0	0.2	0.3	1.6

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OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Spring Median Event Mean Concentration			11.0	90	89	2.48	1.510	0.274	0.421	0.111	0.002500	0.015	0.0225	0.117
Precipitation (meters)	0.129													
41-040	0.57	35.59	99.5	814.4	805.4	22.4	13.7	2.5	3.8	1.0	0.0	0.1	0.2	1.1
41-050	0.60	10.48	30.7	251.1	248.3	6.9	4.2	0.8	1.2	0.3	0.0	0.0	0.1	0.3
41-060	0.60	2.95	8.6	70.7	69.9	1.9	1.2	0.2	0.3	0.1	0.0	0.0	0.0	0.1
51-010	0.45	29.63	65.3	534.1	528.1	14.7	9.0	1.6	2.5	0.7	0.0	0.1	0.1	0.7
51-020	0.45	4.55	10.0	81.8	80.9	2.3	1.4	0.2	0.4	0.1	0.0	0.0	0.0	0.1
52-010	0.28	45.29	61.1	499.8	494.3	13.8	8.4	1.5	2.3	0.6	0.0	0.1	0.1	0.6
52-020	0.45	6.09	13.4	109.4	108.2	3.0	1.8	0.3	0.5	0.1	0.0	0.0	0.0	0.1
52-030	0.45	7.18	15.8	129.0	127.6	3.6	2.2	0.4	0.6	0.2	0.0	0.0	0.0	0.2
52-040	0.41	4.54	9.2	74.9	74.1	2.1	1.3	0.2	0.4	0.1	0.0	0.0	0.0	0.1
52-050	0.44	15.3	32.5	265.8	262.9	7.3	4.5	0.8	1.2	0.3	0.0	0.0	0.1	0.3
52-060	0.10	3.22	1.6	12.9	12.7	0.4	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0
52-070	0.42	86.94	179.6	1,469.3	1,453.0	40.5	24.7	4.5	6.9	1.8	0.0	0.2	0.4	1.9
52-080	0.24	8.08	9.5	78.1	77.2	2.2	1.3	0.2	0.4	0.1	0.0	0.0	0.0	0.1
52-090	0.45	4.89	10.7	87.9	86.9	2.4	1.5	0.3	0.4	0.1	0.0	0.0	0.0	0.1
52-100A/B	0.27	11.89	15.5	126.6	125.2	3.5	2.1	0.4	0.6	0.2	0.0	0.0	0.0	0.2
52-110	0.45	8.84	19.3	157.6	155.8	4.3	2.6	0.5	0.7	0.2	0.0	0.0	0.0	0.2
52-120	0.45	14.74	32.4	264.9	262.0	7.3	4.4	0.8	1.2	0.3	0.0	0.0	0.1	0.3
52-130	0.31	7.18	11.0	90.3	89.3	2.5	1.5	0.3	0.4	0.1	0.0	0.0	0.0	0.1
53-010	0.45	7.03	15.4	126.3	124.9	3.5	2.1	0.4	0.6	0.2	0.0	0.0	0.0	0.2
53-020	0.28	12.38	16.7	136.6	135.1	3.8	2.3	0.4	0.6	0.2	0.0	0.0	0.0	0.2
53-030	0.44	11.37	24.2	198.4	196.2	5.5	3.3	0.6	0.9	0.2	0.0	0.0	0.0	0.3
53-040	0.45	2.78	6.1	50.0	49.4	1.4	0.8	0.2	0.2	0.1	0.0	0.0	0.0	0.1
53-050	0.45	13.66	30.0	245.5	242.8	6.8	4.1	0.7	1.1	0.3	0.0	0.0	0.1	0.3
53-060	0.45	20.37	44.7	366.1	362.0	10.1	6.1	1.1	1.7	0.5	0.0	0.1	0.1	0.5
53-070	0.45	4.89	10.7	87.9	86.9	2.4	1.5	0.3	0.4	0.1	0.0	0.0	0.0	0.1
53-080	0.39	5.81	11.2	91.5	90.5	2.5	1.5	0.3	0.4	0.1	0.0	0.0	0.0	0.1
53-090	0.46	59.59	133.6	1,092.7	1,080.6	30.1	18.3	3.3	5.1	1.3	0.0	0.2	0.3	1.4
53-100	0.00	107	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53-110	0.38	4.59	8.6	70.6	69.8	1.9	1.2	0.2	0.3	0.1	0.0	0.0	0.0	0.1
53-120A/B	0.46	129.79	288.6	2,361.6	2,335.4	65.1	39.6	7.2	11.0	2.9	0.1	0.4	0.6	3.1
53-130	0.45	5.02	11.0	90.2	89.2	2.5	1.5	0.3	0.4	0.1	0.0	0.0	0.0	0.1
53-140	0.45	6.36	14.0	114.3	113.0	3.1	1.9	0.3	0.5	0.1	0.0	0.0	0.0	0.1
53-150	0.48	90.4	213.5	1,746.7	1,727.3	48.1	29.3	5.3	8.2	2.2	0.0	0.3	0.4	2.3
53-160	0.47	252.19	582.0	4,761.6	4,708.7	131.2	79.9	14.5	22.3	5.9	0.1	0.8	1.2	6.2
53-170	0.36	6.39	11.3	92.1	91.1	2.5	1.5	0.3	0.4	0.1	0.0	0.0	0.0	0.1
53-180	0.10	8.09	3.9	32.3	31.9	0.9	0.5	0.1	0.2	0.0	0.0	0.0	0.0	0.0
53-190	0.30	11.41	16.7	136.9	135.4	3.8	2.3	0.4	0.6	0.2	0.0	0.0	0.0	0.2
54-010A/B	0.44	84.93	180.4	1,475.7	1,459.3	40.7	24.8	4.5	6.9	1.8	0.0	0.2	0.4	1.9
54-040A/B	0.49	255.14	616.4	5,043.2	4,987.1	139.0	84.6	15.4	23.6	6.2	0.1	0.8	1.3	6.6
54-050	0.17	9.27	7.9	64.4	63.7	1.8	1.1	0.2	0.3	0.1	0.0	0.0	0.0	0.1
54-060	0.44	32.13	68.9	563.6	557.4	15.5	9.5	1.7	2.6	0.7	0.0	0.1	0.1	0.7
54-070	0.36	60.8	106.4	870.7	861.0	24.0	14.6	2.7	4.1	1.1	0.0	0.1	0.2	1.1
54-080A/B/C	0.46	414.26	924.3	7,562.2	7,478.2	208.4	126.9	23.0	35.4	9.3	0.2	1.3	1.9	9.8
54-090	0.10	3.55	1.7	14.2	14.0	0.4	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0
54-100A/B	0.60	114.24	332.2	2,717.8	2,687.6	74.9	45.6	8.3	12.7	3.4	0.1	0.5	0.7	3.5
54-110	0.45	24.55	53.9	441.2	436.3	12.2	7.4	1.3	2.1	0.5	0.0	0.1	0.1	0.6
54-120	0.46	62.08	138.5	1,132.9	1,120.3	31.2	19.0	3.4	5.3	1.4	0.0	0.2	0.3	1.5
54-130	0.10	1.07	0.5	4.3	4.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54-140A/B	0.41	113.01	225.0	1,841.1	1,820.6	50.7	30.9	5.6	8.6	2.3	0.1	0.3	0.5	2.4
54-150	0.45	55.34	120.3	984.2	973.3	27.1	16.5	3.0	4.6	1.2	0.0	0.2	0.2	1.3
54-160	0.60	2.62	7.7	62.8	62.1	1.7	1.1	0.2	0.3	0.1	0.0	0.0	0.0	0.1
54-170	0.59	8.08	23.5	191.9	189.7	5.3	3.2	0.6	0.9	0.2	0.0	0.0	0.0	0.2
54-180	0.60	2.82	8.3	67.6	66.8	1.9	1.1	0.2	0.3	0.1	0.0	0.0	0.0	0.1
54-190	0.10	2.2	1.1	8.8	8.7	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54-200	0.10	2.13	1.0	8.5	8.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54-210	0.10	1.14	0.6	4.6	4.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55-010	0.60	14.98	43.9	359.0	355.0	9.9	6.0	1.1	1.7	0.4	0.0	0.1	0.1	0.5
55-020	0.60	189.58	551.6	4,513.2	4,463.1	124.4	75.7	13.7	21.1	5.6	0.1	0.8	1.1	5.9
56-010	0.60	67.62	198.0	1,620.3	1,602.3	44.6	27.2	4.9	7.6	2.0	0.0	0.3	0.4	2.1
57-010	0.53	26.1	68.0	556.1	549.9	15.3	9.3	1.7	2.6	0.7	0.0	0.1	0.1	0.7
57-020	0.00	142	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-030	0.45	18.22	40.0	327.4	323.8	9.0	5.5	1.0	1.5	0.4	0.0	0.1	0.1	0.4
57-040	0.35	39.88	67.9	555.8	549.6	15.3	9.3	1.7	2.6	0.7	0.0	0.1	0.1	0.7
57-050	0.45	7.9	17.4	142.0	140.4	3.9	2.4	0.4	0.7	0.2	0.0	0.0	0.0	0.2
57-060	0.46	26.11	58.9	482.2	476.9	13.3	8.1	1.5	2.3	0.6	0.0	0.1	0.1	0.6
57-070	0.45	81.33	179.1	1,465.1	1,448.8	40.4	24.6	4.5	6.9	1.8	0.0	0.2	0.4	1.9
57-080	0.42	5.54	11.4	93.5	92.5	2.6	1.6	0.3	0.4	0.1	0.0	0.0	0.0	0.1
57-090	0.47	77.77	178.2	1,457.6	1,441.4	40.2	24.5	4.4	6.8	1.8	0.0	0.2	0.4	1.9
57-100A/B	0.47	313.43	722.7	5,913.3	5,847.6	162.9	99.2	18.0	27.7	7.3	0.2	1.0	1.5	7.7
57-110	0.54	21.6	57.0	466.5	461.3	12.9	7.8	1.4	2.2	0.6	0.0	0.1	0.1	0.6
57-120A/B/C	0.00	65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-130	0.10	1.16	0.6	4.6	4.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-140	0.10	1.55	0.8	6.2	6.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-150	0.43	35.68	75.2	615.0	608.2	16.9	10.3	1.9	2.9	0.8	0.0	0.1	0.2	0.8
57-160	0.10	1.89	0.9	7.5	7.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
61-010	0.55	2.86	7.7	63.0	62.3	1.7	1.1	0.2	0.3	0.1	0.0	0.0	0.0	0.1
62-010	0.45	27.84	61.4	502.6	497.1	13.9	8.4	1.5	2.4	0.6	0.0	0.1	0.1	0.7
63-010	0.45	388.79	858.0	7,020.2	6,942.2	193.4	117.8	21.4	32.8	8.7	0.2	1.2	1.8	9.1
63-020	0.00	11.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64-100	0.45	24.92	54.7	447.4	442.5	12.3	7.5	1.4	2.1	0.6	0.0	0.1	0.1	0.6
64-110	0.45	6.01	13.2	108.0	106.8	3.0	1.8	0.3	0.5	0.1	0.0	0.0	0.0	0.1
64-120	0.45	16.04	35.2	288.3	285.1	7.9	4.8	0.9	1.3	0.4	0.0	0.0	0.1	0.4
64-130	0.45	2.44	5.4	43.9	43.4	1.2	0.7	0.1	0.2	0.1	0.0	0.0	0.0	0.1
65-010	0.00	18.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65-020	0.53	38.46	99.3	812.8	803.7	22.4	13.6	2.5	3.8	1.0	0.0	0.1	0.2	1.1
70-010	0.46	6.23	13.9	114.1	112.8	3.1	1.9	0.3	0.5	0.1	0.0	0.0	0.0	0.1

2005 SPRING POLLUTANT LOADINGS BY OUTFALL

2005 SPRING POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (04/01/05 - 05/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Spring Median Event Mean Concentration			11.0	90	89	2.48	1.510	0.274	0.421	0.111	0.002500	0.015	0.0225	0.117
Precipitation (meters)	0.129													
70-015	0.45	11.69	25.7	210.1	207.8	5.8	3.5	0.6	1.0	0.3	0.0	0.0	0.1	0.3
70-020	0.45	37.55	82.5	674.8	667.3	18.6	11.3	2.1	3.2	0.8	0.0	0.1	0.2	0.9
70-025	0.00	3.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-030	0.45	13.48	29.6	242.1	239.4	6.7	4.1	0.7	1.1	0.3	0.0	0.0	0.1	0.3
70-035	0.45	4.53	10.0	81.4	80.5	2.2	1.4	0.2	0.4	0.1	0.0	0.0	0.0	0.1
70-040	0.45	2.42	5.3	43.5	43.0	1.2	0.7	0.1	0.2	0.1	0.0	0.0	0.0	0.1
70-045	0.00	0.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-050	0.45	17.41	38.2	312.9	309.4	8.6	5.2	1.0	1.5	0.4	0.0	0.1	0.1	0.4
70-055	0.46	333.43	755.4	6,180.2	6,111.6	170.3	103.7	18.8	28.9	7.6	0.2	1.0	1.5	8.0
70-060	0.45	3.53	7.8	63.4	62.7	1.7	1.1	0.2	0.3	0.1	0.0	0.0	0.0	0.1
70-065	0.45	1.89	4.2	34.0	33.6	0.9	0.6	0.1	0.2	0.0	0.0	0.0	0.0	0.0
70-070	0.45	5.8	12.7	104.2	103.1	2.9	1.7	0.3	0.5	0.1	0.0	0.0	0.0	0.1
70-075	0.43	5	10.5	86.1	85.2	2.4	1.4	0.3	0.4	0.1	0.0	0.0	0.0	0.1
70-080	0.46	11.96	27.0	220.7	218.2	6.1	3.7	0.7	1.0	0.3	0.0	0.0	0.1	0.3
70-085	0.45	229.48	501.0	4,098.8	4,053.2	112.9	68.8	12.5	19.2	5.1	0.1	0.7	1.0	5.3
70-090	0.45	18.57	40.8	333.7	330.0	9.2	5.6	1.0	1.6	0.4	0.0	0.1	0.1	0.4
70-095	0.45	9.99	21.9	179.5	177.5	4.9	3.0	0.5	0.8	0.2	0.0	0.0	0.0	0.2
70-100	0.45	9.64	21.2	173.2	171.3	4.8	2.9	0.5	0.8	0.2	0.0	0.0	0.0	0.2
70-105	0.45	1.63	3.6	29.3	29.0	0.8	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-110	0.45	18.13	39.8	325.8	322.2	9.0	5.5	1.0	1.5	0.4	0.0	0.1	0.1	0.4
70-115	0.45	3.71	8.1	66.7	65.9	1.8	1.1	0.2	0.3	0.1	0.0	0.0	0.0	0.1
70-120	0.45	4.22	9.3	75.8	75.0	2.1	1.3	0.2	0.4	0.1	0.0	0.0	0.0	0.1
70-125	0.00	5.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-130	0.49	34.29	82.6	676.1	668.6	18.6	11.3	2.1	3.2	0.8	0.0	0.1	0.2	0.9
70-135	0.45	7.46	16.4	134.1	132.6	3.7	2.2	0.4	0.6	0.2	0.0	0.0	0.0	0.2
70-140	0.60	0.78	2.3	18.7	18.5	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-145	0.60	9.19	26.9	220.2	217.8	6.1	3.7	0.7	1.0	0.3	0.0	0.0	0.1	0.3
70-150	0.45	4.51	9.9	81.1	80.2	2.2	1.4	0.2	0.4	0.1	0.0	0.0	0.0	0.1
70-155	0.45	2.05	4.5	36.8	36.4	1.0	0.6	0.1	0.2	0.0	0.0	0.0	0.0	0.0
70-160	0.45	2.95	6.5	53.0	52.4	1.5	0.9	0.2	0.2	0.1	0.0	0.0	0.0	0.1
70-165	0.45	27.77	61.0	499.1	493.5	13.8	8.4	1.5	2.3	0.6	0.0	0.1	0.1	0.6
70-170	0.45	23.74	52.1	426.6	421.9	11.8	7.2	1.3	2.0	0.5	0.0	0.1	0.1	0.6
70-175	0.46	30.89	68.9	564.0	557.8	15.5	9.5	1.7	2.6	0.7	0.0	0.1	0.1	0.7
70-180	0.45	1.14	2.5	20.5	20.3	0.6	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-185	0.45	1.53	3.4	27.5	27.2	0.8	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-190	0.17	15.04	12.6	103.4	102.2	2.8	1.7	0.3	0.5	0.1	0.0	0.0	0.0	0.1
70-195	0.45	46.02	101.6	831.6	822.3	22.9	14.0	2.5	3.9	1.0	0.0	0.1	0.2	1.1
70-200	0.45	31.52	69.2	566.5	560.2	15.6	9.5	1.7	2.6	0.7	0.0	0.1	0.1	0.7
70-205	0.45	1.39	3.1	25.0	24.7	0.7	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-210	0.45	3.58	7.9	64.3	63.6	1.8	1.1	0.2	0.3	0.1	0.0	0.0	0.0	0.1
70-215	0.45	5.93	13.0	106.6	105.4	2.9	1.8	0.3	0.5	0.1	0.0	0.0	0.0	0.1
70-220	0.45	4.54	10.0	81.6	80.7	2.2	1.4	0.2	0.4	0.1	0.0	0.0	0.0	0.1
70-225	0.45	4.99	11.0	89.7	88.7	2.5	1.5	0.3	0.4	0.1	0.0	0.0	0.0	0.1
70-230	0.45	4.72	10.4	84.8	83.9	2.3	1.4	0.3	0.4	0.1	0.0	0.0	0.0	0.1
70-235	0.45	5.04	11.1	90.6	89.6	2.5	1.5	0.3	0.4	0.1	0.0	0.0	0.0	0.1
70-240	0.45	4.52	9.9	81.2	80.3	2.2	1.4	0.2	0.4	0.1	0.0	0.0	0.0	0.1
70-245	0.44	9.98	21.4	175.0	173.0	4.8	2.9	0.5	0.8	0.2	0.0	0.0	0.0	0.2
70-250	0.48	41.27	97.2	795.0	786.2	21.9	13.3	2.4	3.7	1.0	0.0	0.1	0.2	1.0
70-255	0.45	45.37	99.7	815.6	806.6	22.5	13.7	2.5	3.8	1.0	0.0	0.1	0.2	1.1
70-260	0.46	24.9	55.6	455.2	450.1	12.5	7.6	1.4	2.1	0.6	0.0	0.1	0.1	0.6
70-265A/B	0.00	183.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-270	0.45	4.66	10.2	83.7	82.8	2.3	1.4	0.3	0.4	0.1	0.0	0.0	0.0	0.1
70-275	0.45	4.28	9.4	76.9	76.1	2.1	1.3	0.2	0.4	0.1	0.0	0.0	0.0	0.1
70-280	0.45	9.39	20.7	169.0	167.2	4.7	2.8	0.5	0.8	0.2	0.0	0.0	0.0	0.2
70-285	0.45	19.03	41.8	341.6	337.8	9.4	5.7	1.0	1.6	0.4	0.0	0.1	0.1	0.4
70-290	0.45	2.37	5.2	42.2	41.8	1.2	0.7	0.1	0.2	0.1	0.0	0.0	0.0	0.1
70-295	0.45	7.18	15.8	129.0	127.6	3.6	2.2	0.4	0.6	0.2	0.0	0.0	0.0	0.2
70-300	0.10	0.4	0.2	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-305	0.45	12.68	27.6	225.8	223.3	6.2	3.8	0.7	1.1	0.3	0.0	0.0	0.1	0.3
70-310	0.00	5.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-315	0.30	5.79	8.5	69.4	68.6	1.9	1.2	0.2	0.3	0.1	0.0	0.0	0.0	0.1
70-320	0.44	2.32	5.0	40.7	40.2	1.1	0.7	0.1	0.2	0.1	0.0	0.0	0.0	0.1
70-325	0.00	2.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-330	0.47	279.41	642.4	5,256.3	5,197.9	144.8	88.2	16.0	24.6	6.5	0.1	0.9	1.3	6.8
70-335	0.45	1.99	4.4	35.8	35.4	1.0	0.6	0.1	0.2	0.0	0.0	0.0	0.0	0.0
70-340	0.39	22.25	42.7	349.6	345.7	9.6	5.9	1.1	1.6	0.4	0.0	0.1	0.1	0.5
70-345	0.45	3.81	8.4	68.5	67.7	1.9	1.1	0.2	0.3	0.1	0.0	0.0	0.0	0.1
70-350	0.49	314.4	758.3	6,204.2	6,135.3	171.0	104.1	18.9	29.0	7.7	0.2	1.0	1.6	8.1
70-355	0.45	1.29	2.8	23.2	22.9	0.6	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-360	0.45	131.96	292.8	2,395.3	2,368.7	66.0	40.2	7.3	11.2	3.0	0.1	0.4	0.6	3.1
70-365	0.45	6.7	14.7	120.4	119.1	3.3	2.0	0.4	0.6	0.1	0.0	0.0	0.0	0.2
70-370	0.44	3.75	8.1	66.3	65.6	1.8	1.1	0.2	0.3	0.1	0.0	0.0	0.0	0.1
70-375	0.47	7.1	16.4	134.0	132.5	3.7	2.2	0.4	0.6	0.2	0.0	0.0	0.0	0.2
70-380	0.45	14.4	31.6	258.8	255.9	7.1	4.3	0.8	1.2	0.3	0.0	0.0	0.1	0.3
70-385	0.45	14.97	32.9	269.0	266.0	7.4	4.5	0.8	1.3	0.3	0.0	0.0	0.1	0.3
70-390	0.46	58.11	131.4	1,075.0	1,063.1	29.6	18.0	3.3	5.0	1.3	0.0	0.2	0.3	1.4
70-395	0.43	57.19	119.9	981.0	970.1	27.0	16.5	3.0	4.6	1.2	0.0	0.2	0.2	1.3
70-400	0.44	9.67	20.7	169.5	167.6	4.7	2.8	0.5	0.8	0.2	0.0	0.0	0.0	0.2
70-405	0.25	7.16	8.7	71.5	70.7	2.0	1.2	0.2	0.3	0.1	0.0	0.0	0.0	0.1
70-410	0.43	5.8	12.1	99.3	98.2	2.7	1.7	0.3	0.5	0.1	0.0	0.0	0.0	0.1
70-415	0.45	120.75	267.6	2,189.2	2,164.8	60.3	36.7	6.7	10.2	2.7	0.1	0.4	0.5	2.8
70-420	0.45	16.99	37.3	305.3	301.9	8.4	5.1	0.9	1.4	0.4	0.0	0.1	0.1	0.4
70-425	0.51	20.63	51.5	421.0	416.3	11.6	7.1	1.3	2.0	0.5	0.0	0.1	0.1	0.5
70-430	0.10	6.19	3.0	24.7	24.4	0.7	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-435	0.10	9.16	4.5	36.6	36.2	1.0	0.6	0.1	0.2	0.0	0.0	0.0	0.0	0.0
70-440	0.50	34.48	83.6	684.0	676.4	18.8	11.5	2.1	3.2	0.8	0.0	0.1	0.2	0.9

2005 SPRING POLLUTANT LOADINGS BY OUTFALL

2005 SPRING POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (04/01/05 - 05/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Spring Median Event Mean Concentration			11.0	90	89	2.48	1.510	0.274	0.421	0.111	0.002500	0.015	0.0225	0.117
Precipitation (meters)	0.129													
70-445	0.45	5.6	12.3	100.6	99.5	2.8	1.7	0.3	0.5	0.1	0.0	0.0	0.0	0.1
70-450	0.45	2.65	5.8	47.6	47.1	1.3	0.8	0.1	0.2	0.1	0.0	0.0	0.0	0.1
70-455	0.00	2.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-460	0.45	2.67	5.9	48.0	47.5	1.3	0.8	0.1	0.2	0.1	0.0	0.0	0.0	0.1
70-465	0.45	2.58	5.7	46.4	45.9	1.3	0.8	0.1	0.2	0.1	0.0	0.0	0.0	0.1
70-470	0.38	8.55	16.0	131.1	129.7	3.6	2.2	0.4	0.6	0.2	0.0	0.0	0.0	0.2
70-475	0.46	229.14	514.9	4,212.5	4,165.7	116.1	70.7	12.8	19.7	5.2	0.1	0.7	1.1	5.5
70-480	0.60	0.31	0.9	7.4	7.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-485	0.45	13.36	29.3	240.1	237.4	6.6	4.0	0.7	1.1	0.3	0.0	0.0	0.1	0.3
70-490	0.47	48.75	111.7	913.8	903.7	25.2	15.3	2.8	4.3	1.1	0.0	0.2	0.2	1.2
70-495	0.45	7.74	17.0	139.1	137.6	3.8	2.3	0.4	0.7	0.2	0.0	0.0	0.0	0.2
70-500	0.45	0.56	1.2	10.1	10.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-505	0.41	8.12	16.3	133.5	132.0	3.7	2.2	0.4	0.6	0.2	0.0	0.0	0.0	0.2
70-510	0.45	41.82	92.2	754.0	745.6	20.8	12.7	2.3	3.5	0.9	0.0	0.1	0.2	1.0
70-515	0.47	62.73	143.9	1,177.3	1,164.2	32.4	19.8	3.6	5.5	1.5	0.0	0.2	0.3	1.5
70-520	0.45	6.05	13.3	108.7	107.5	3.0	1.8	0.3	0.5	0.1	0.0	0.0	0.0	0.1
70-525	0.45	6.23	13.7	112.0	110.7	3.1	1.9	0.3	0.5	0.1	0.0	0.0	0.0	0.1
70-530	0.45	1.67	3.7	30.0	29.7	0.8	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-535	0.45	30.24	66.6	544.7	538.7	15.0	9.1	1.7	2.5	0.7	0.0	0.1	0.1	0.7
70-540	0.21	5.1	5.3	43.5	43.0	1.2	0.7	0.1	0.2	0.1	0.0	0.0	0.0	0.1
70-545	0.45	1.89	4.2	34.0	33.6	0.9	0.6	0.1	0.2	0.0	0.0	0.0	0.0	0.0
70-550	0.26	1.3	1.6	13.4	13.3	0.4	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0
70-555	0.45	1.73	3.8	31.1	30.7	0.9	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-560	0.45	3.33	7.3	59.8	59.2	1.6	1.0	0.2	0.3	0.1	0.0	0.0	0.0	0.1
70-565	0.24	16.63	19.5	159.8	158.0	4.4	2.7	0.5	0.7	0.2	0.0	0.0	0.0	0.2
70-570	0.45	1.23	2.7	22.1	21.9	0.6	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-575	0.45	15.39	33.8	276.3	273.2	7.6	4.6	0.8	1.3	0.3	0.0	0.0	0.1	0.4
70-580	0.43	119.93	253.9	2,077.7	2,054.6	57.3	34.9	6.3	9.7	2.6	0.1	0.3	0.5	2.7
71-010	0.10	1.12	0.5	4.5	4.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71-020	0.45	14.05	30.9	252.5	249.7	7.0	4.2	0.8	1.2	0.3	0.0	0.0	0.1	0.3
71-030	0.45	28.58	63.1	516.4	510.7	14.2	8.7	1.6	2.4	0.6	0.0	0.1	0.1	0.7
71-040	0.22	20.93	22.4	183.5	181.4	5.1	3.1	0.6	0.9	0.2	0.0	0.0	0.0	0.2
71-050	0.46	120.42	269.2	2,202.6	2,178.1	60.7	37.0	6.7	10.3	2.7	0.1	0.4	0.6	2.9
71-060	0.45	3.11	6.8	55.9	55.3	1.5	0.9	0.2	0.3	0.1	0.0	0.0	0.0	0.1
71-070	0.00	386.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71-080	0.46	101.79	226.7	1,854.9	1,834.2	51.1	31.1	5.6	8.7	2.3	0.1	0.3	0.5	2.4
71-090	0.45	6.5	14.1	115.7	114.4	3.2	1.9	0.4	0.5	0.1	0.0	0.0	0.0	0.2
71-100	0.10	1.99	1.0	7.9	7.9	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72-010	0.18	17.32	14.8	121.1	119.8	3.3	2.0	0.4	0.6	0.1	0.0	0.0	0.0	0.2
72-020	0.40	24.7	47.6	389.8	385.4	10.7	6.5	1.2	1.8	0.5	0.0	0.1	0.1	0.5
72-030	0.10	5.25	2.6	21.0	20.7	0.6	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
72-040	0.42	166.54	338.6	2,770.4	2,739.6	76.3	46.5	8.4	13.0	3.4	0.1	0.5	0.7	3.6
72-050	0.10	5.16	2.5	20.6	20.4	0.6	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
72-060	0.36	113.04	199.6	1,633.0	1,614.8	45.0	27.4	5.0	7.6	2.0	0.0	0.3	0.4	2.1
72-070	0.10	2.21	1.1	8.8	8.7	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72-080	0.60	4.74	13.9	113.6	112.3	3.1	1.9	0.3	0.5	0.1	0.0	0.0	0.0	0.1
72-090	0.45	68.71	150.0	1,227.1	1,213.4	33.8	20.6	3.7	5.7	1.5	0.0	0.2	0.3	1.6
72-100	0.46	68.32	154.4	1,263.3	1,249.3	34.8	21.2	3.8	5.9	1.6	0.0	0.2	0.3	1.6
72-110	0.10	3.22	1.6	12.9	12.7	0.4	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0
72-120	0.45	62.98	138.3	1,131.8	1,119.3	31.2	19.0	3.4	5.3	1.4	0.0	0.2	0.3	1.5
72-130	0.46	58.06	129.3	1,058.1	1,046.4	29.2	17.8	3.2	4.9	1.3	0.0	0.2	0.3	1.4
72-140	0.10	10.19	5.0	40.7	40.2	1.1	0.7	0.1	0.2	0.1	0.0	0.0	0.0	0.1
72-150	0.10	4.76	2.3	19.0	18.8	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
72-160	0.10	4.55	2.2	18.2	18.0	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
73-010	0.44	20.76	44.5	363.9	359.8	10.0	6.1	1.1	1.7	0.4	0.0	0.1	0.1	0.5
73-020	0.44	57.47	124.2	1,015.8	1,004.5	28.0	17.0	3.1	4.8	1.3	0.0	0.2	0.3	1.3
73-030	0.10	21.56	10.5	86.1	85.1	2.4	1.4	0.3	0.4	0.1	0.0	0.0	0.0	0.1
74-010	0.48	44.39	103.7	848.6	839.1	23.4	14.2	2.6	4.0	1.0	0.0	0.1	0.2	1.1
74-020	0.45	4.41	9.7	79.3	78.4	2.2	1.3	0.2	0.4	0.1	0.0	0.0	0.0	0.1
75-005	0.45	12.39	27.2	222.4	219.9	6.1	3.7	0.7	1.0	0.3	0.0	0.0	0.1	0.3
75-010	0.60	3.65	10.7	87.5	86.5	2.4	1.5	0.3	0.4	0.1	0.0	0.0	0.0	0.1
75-020	0.45	1.53	3.4	27.5	27.2	0.8	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
75-030	0.45	8.38	18.4	150.6	148.9	4.1	2.5	0.5	0.7	0.2	0.0	0.0	0.0	0.2
75-040	0.45	14.74	32.4	264.9	262.0	7.3	4.4	0.8	1.2	0.3	0.0	0.0	0.1	0.3
76-010	0.46	907.31	2,054.2	16,807.3	16,620.5	463.1	282.0	51.2	78.6	20.7	0.5	2.8	4.2	21.8
76-020	0.46	88.62	197.1	1,612.7	1,594.8	44.4	27.1	4.9	7.5	2.0	0.0	0.3	0.4	2.1
76-030	0.45	7.55	16.6	135.7	134.2	3.7	2.3	0.4	0.6	0.2	0.0	0.0	0.0	0.2
76-040	0.19	4.67	4.2	34.7	34.3	1.0	0.6	0.1	0.2	0.0	0.0	0.0	0.0	0.0
76-050	0.00	2.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81-010	0.10	31.17	15.2	124.5	123.1	3.4	2.1	0.4	0.6	0.2	0.0	0.0	0.0	0.2
82-010	0.49	23.53	55.9	457.2	452.2	12.6	7.7	1.4	2.1	0.6	0.0	0.1	0.1	0.6
82-020	0.45	73.45	163.1	1,334.1	1,319.3	36.8	22.4	4.1	6.2	1.6	0.0	0.2	0.3	1.7
82-030	0.45	90.04	199.8	1,635.1	1,616.9	45.1	27.4	5.0	7.6	2.0	0.0	0.3	0.4	2.1
82-040	0.46	98.49	223.0	1,824.7	1,804.4	50.3	30.6	5.6	8.5	2.3	0.1	0.3	0.5	2.4
83-010	0.45	6.59	14.5	118.4	117.1	3.3	2.0	0.4	0.6	0.1	0.0	0.0	0.0	0.2
83-015	0.45	0.99	2.2	17.8	17.6	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
83-020	0.43	85.96	182.4	1,492.6	1,476.0	41.1	25.0	4.5	7.0	1.8	0.0	0.2	0.4	1.9
83-025	0.45	51.23	112.5	920.7	910.5	25.4	15.4	2.8	4.3	1.1	0.0	0.2	0.2	1.2
83-030	0.60	0.82	2.4	19.6	19.4	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
83-040	0.10	1.08	0.5	4.3	4.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83-050	0.45	40.4	89.0	728.0	719.9	20.1	12.2	2.2	3.4	0.9	0.0	0.1	0.2	0.9
83-060	0.45	10.05	22.1	180.6	178.6	5.0	3.0	0.5	0.8	0.2	0.0	0.0	0.0	0.2
83-070	0.10	1.19	0.6	4.8	4.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83-080	0.48	178.63	414.5	3,391.7	3,354.1	93.5	56.9	10.3	15.9	4.2	0.1	0.6	0.8	4.4
83-090	0.41	9.16	18.3	149.9	148.2	4.1	2.5	0.5	0.7	0.2	0.0	0.0	0.0	0.2
84-010	0.47	21.56	49.5	405.0	400.5	11.2	6.8	1.2	1.9	0.5	0.0	0.1	0.1	0.5

2005 SPRING POLLUTANT LOADINGS BY OUTFALL

2005 SPRING POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (04/01/05 - 05/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Spring Median Event Mean Concentration			11.0	90	89	2.48	1.510	0.274	0.421	0.111	0.002500	0.015	0.0225	0.117
Precipitation (meters)	0.129													
85-010	0.10	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SPRING SEASONAL SUM (kg)			**65,933.99**	**539,459.92**	**533,465.93**	**14,865.12**	**9,050.94**	**1,642.36**	**2,523.47**	**665.33**	**14.98**	**89.91**	**134.86**	**701.30**

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/05 - 08/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Summer Median Event Mean Concentration			8.0	63	79	1.89	1.380	0.378	0.291	0.107	0.002500	0.018	0.016	0.064
Precipitation (meters)	**0.315**													
10-010	0.43	113.55	424.6	3,344.1	4,193.4	100.3	73.3	20.1	15.4	5.7	0.1	0.9	0.8	3.4
10-020	0.45	7.81	30.5	239.9	300.8	7.2	5.3	1.4	1.1	0.4	0.0	0.1	0.1	0.2
10-030	0.10	4.05	3.5	27.6	34.7	0.8	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0
10-040	0.45	167.42	648.5	5,107.3	6,404.3	153.2	111.9	30.6	23.6	8.7	0.2	1.4	1.3	5.2
10-050	0.46	114.18	450.5	3,548.0	4,449.1	106.4	77.7	21.3	16.4	6.0	0.1	1.0	0.9	3.6
10-060	0.60	10.5	54.6	430.1	539.3	12.9	9.4	2.6	2.0	0.7	0.0	0.1	0.1	0.4
10-070	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-080	0.38	30.66	101.6	799.8	1,002.9	24.0	17.5	4.8	3.7	1.4	0.0	0.2	0.2	0.8
10-090A	0.00	0.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-090B	0.00	1.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-090C	0.54	12.77	59.9	472.1	591.9	14.2	10.3	2.8	2.2	0.8	0.0	0.1	0.1	0.5
10-090D	0.00	4.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-100	0.36	1392.1	4,377.1	34,469.6	43,223.8	1,034.1	755.0	206.8	159.2	58.5	1.4	9.7	8.8	35.0
10-110	0.47	300.11	1,213.7	9,557.8	11,985.2	286.7	209.4	57.3	44.1	16.2	0.4	2.7	2.4	9.7
10-120A/B	0.44	372.78	1,406.5	11,076.2	13,889.2	332.3	242.6	66.5	51.2	18.8	0.4	3.1	2.8	11.3
10-130	0.45	336.46	1,316.9	10,370.6	13,004.4	311.1	227.2	62.2	47.9	17.6	0.4	2.9	2.6	10.5
10-140a	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-140a,b	0.58	220.65	1,100.6	8,667.4	10,868.6	260.0	189.9	52.0	40.0	14.7	0.3	2.4	2.2	8.8
10-150	0.47	157.15	638.7	5,029.9	6,307.4	150.9	110.2	30.2	23.2	8.5	0.2	1.4	1.3	5.1
10-160	0.00	17	0.4	2.9	3.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-170	0.50	176.01	767.8	6,046.3	7,581.9	181.4	132.4	36.3	27.9	10.3	0.2	1.7	1.5	6.1
10-180	0.45	284.26	1,097.3	8,641.2	10,835.8	259.2	189.3	51.8	39.9	14.7	0.3	2.4	2.2	8.8
10-190	0.59	14.58	74.8	589.0	738.5	17.7	12.9	3.5	2.7	1.0	0.0	0.2	0.1	0.6
10-200	0.40	42.44	146.1	1,150.3	1,442.4	34.5	25.2	6.9	5.3	2.0	0.0	0.3	0.3	1.2
10-210	0.49	98.32	419.0	3,299.3	4,137.3	99.0	72.3	19.8	15.2	5.6	0.1	0.9	0.8	3.4
10-220	0.56	18.83	91.3	718.6	901.2	21.6	15.7	4.3	3.3	1.2	0.0	0.2	0.2	0.7
10-230	0.47	235.02	963.0	7,583.8	9,509.8	227.5	166.1	45.5	35.0	12.9	0.3	2.1	1.9	7.7
10-240	0.51	103.83	462.4	3,641.1	4,565.8	109.2	79.8	21.8	16.8	6.2	0.1	1.0	0.9	3.7
10-250	0.49	242.96	1,029.6	8,107.8	10,167.0	243.2	177.6	48.6	37.5	13.8	0.3	2.3	2.1	8.2
10-260	0.56	23.77	114.8	904.0	1,133.6	27.1	19.8	5.4	4.2	1.5	0.0	0.3	0.2	0.9
10-270	0.47	72.45	297.6	2,343.5	2,938.7	70.3	51.3	14.1	10.8	4.0	0.1	0.7	0.6	2.4
10-280	0.44	55.08	211.9	1,668.8	2,092.6	50.1	36.6	10.0	7.7	2.8	0.1	0.5	0.4	1.7
10-290	0.10	6.83	5.9	46.6	58.5	1.4	1.0	0.3	0.2	0.1	0.0	0.0	0.0	0.0
10-300	0.36	17.74	55.5	436.7	547.6	13.1	9.6	2.6	2.0	0.7	0.0	0.1	0.1	0.4
10-310	0.47	60.29	246.8	1,943.5	2,437.1	58.3	42.6	11.7	9.0	3.3	0.1	0.5	0.5	2.0
10-320	0.45	341.99	1,339.3	10,546.8	13,225.4	316.4	231.0	63.3	48.7	17.9	0.4	3.0	2.7	10.7
10-330	0.35	21.61	65.9	518.6	650.4	15.6	11.4	3.1	2.4	0.9	0.0	0.1	0.1	0.5
10-340	0.45	20.74	81.1	638.8	801.1	19.2	14.0	3.8	3.0	1.1	0.0	0.2	0.2	0.6
10-350	0.60	28.16	146.2	1,151.3	1,443.7	34.5	25.2	6.9	5.3	2.0	0.0	0.3	0.3	1.2
10-360	0.59	29.02	149.1	1,174.1	1,472.3	35.2	25.7	7.0	5.4	2.0	0.0	0.3	0.3	1.2
10-370	0.59	14.46	73.9	582.0	729.8	17.5	12.7	3.5	2.7	1.0	0.0	0.2	0.1	0.6
10-380	0.45	14.38	55.5	437.0	548.0	13.1	9.6	2.6	2.0	0.7	0.0	0.1	0.1	0.4
10-390	0.49	41.97	179.4	1,412.7	1,771.4	42.4	30.9	8.5	6.5	2.4	0.1	0.4	0.4	1.4
10-400A	0.10	1.07	0.9	7.3	9.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-400B	0.47	17.66	72.2	568.5	712.9	17.1	12.5	3.4	2.6	1.0	0.0	0.2	0.1	0.6
10-400C	0.57	50.25	246.5	1,940.8	2,433.7	58.2	42.5	11.6	9.0	3.3	0.1	0.5	0.5	2.0
10-410A	0.50	46.22	199.5	1,570.7	1,969.7	47.1	34.4	9.4	7.3	2.7	0.1	0.4	0.4	1.6
10-410B	0.32	21.29	58.4	459.8	576.6	13.8	10.1	2.8	2.1	0.8	0.0	0.1	0.1	0.5
10-410C	0.53	22.8	104.3	821.5	1,030.1	24.6	18.0	4.9	3.8	1.4	0.0	0.2	0.2	0.8
10-410D	0.60	27.34	142.3	1,120.3	1,404.8	33.6	24.5	6.7	5.2	1.9	0.0	0.3	0.3	1.1
10-410E	0.58	256.04	1,277.2	10,057.6	12,611.9	301.7	220.3	60.3	46.5	17.1	0.4	2.8	2.6	10.2
10-410F	0.59	37.92	193.4	1,522.7	1,909.4	45.7	33.4	9.1	7.0	2.6	0.1	0.4	0.4	1.5
10-420A	0.27	23.05	54.4	428.8	537.7	12.9	9.4	2.6	2.0	0.7	0.0	0.1	0.1	0.4
10-420B	0.00	10.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420C	0.00	7.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420D	0.00	20.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420E	0.59	127.89	650.6	5,123.2	6,424.3	153.7	112.2	30.7	23.7	8.7	0.2	1.4	1.3	5.2
10-430A	0.00	8.14	0.2	1.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430B	0.53	54.72	253.5	1,996.0	2,502.9	59.9	43.7	12.0	9.2	3.4	0.1	0.6	0.5	2.0
10-430C	0.48	44.83	186.7	1,470.1	1,843.5	44.1	32.2	8.8	6.8	2.5	0.1	0.4	0.4	1.5
10-430D	0.49	85.79	365.6	2,879.0	3,610.2	86.4	63.1	17.3	13.3	4.9	0.1	0.8	0.7	2.9
10-430E	0.56	86.66	418.9	3,298.7	4,136.4	99.0	72.3	19.8	15.2	5.6	0.1	0.9	0.8	3.4
10-430F	0.10	377.97	327.6	2,580.2	3,235.5	77.4	56.5	15.5	11.9	4.4	0.1	0.7	0.7	2.6
10-430G	0.50	125.89	540.8	4,258.9	5,340.6	127.8	93.3	25.6	19.7	7.2	0.2	1.2	1.1	4.3
10-430H	0.49	33.18	141.3	1,113.0	1,395.6	33.4	24.4	6.7	5.1	1.9	0.0	0.3	0.3	1.1
10-430I	0.59	32.61	166.4	1,310.3	1,643.1	39.3	28.7	7.9	6.1	2.2	0.1	0.4	0.3	1.3
10-430J	0.43	532.36	2,002.6	15,770.2	19,775.4	473.1	345.4	94.6	72.8	26.8	0.6	4.5	4.0	16.0
10-430K	0.48	337.06	1,395.6	10,990.4	13,781.6	329.7	240.7	65.9	50.8	18.7	0.4	3.1	2.8	11.2
10-430L	0.45	84.4	329.8	2,597.0	3,256.6	77.9	56.9	15.6	12.0	4.4	0.1	0.7	0.7	2.6
10-430M	0.54	75.94	357.0	2,811.7	3,525.8	84.4	61.6	16.9	13.0	4.8	0.1	0.8	0.7	2.9
10-430N	0.44	26.43	101.7	800.9	1,004.3	24.0	17.5	4.8	3.7	1.4	0.0	0.2	0.2	0.8
10-430O	0.00	109.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430P	0.00	229.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430Q	0.10	8.03	7.0	54.8	68.7	1.6	1.2	0.3	0.3	0.1	0.0	0.0	0.0	0.1
10-430R	0.47	150.32	609.1	4,796.9	6,015.2	143.9	105.1	28.8	22.2	8.1	0.2	1.4	1.2	4.9
10-430S	0.10	5.15	4.5	35.2	44.1	1.1	0.8	0.2	0.2	0.1	0.0	0.0	0.0	0.0
10-430T	0.46	262.47	1,040.0	8,190.3	10,270.4	245.7	179.4	49.1	37.8	13.9	0.3	2.3	2.1	8.3
10-430U	0.47	431.37	1,756.9	13,835.9	17,349.7	415.1	303.1	83.0	63.9	23.5	0.5	3.9	3.5	14.1
10-430V	0.46	329.11	1,326.1	10,443.2	13,095.4	313.3	228.8	62.7	48.2	17.7	0.4	3.0	2.7	10.6
10-440A	0.46	23.18	92.1	724.9	909.0	21.7	15.9	4.3	3.3	1.2	0.0	0.2	0.2	0.7
10-440B	0.49	34.23	146.2	1,151.5	1,444.0	34.5	25.2	6.9	5.3	2.0	0.0	0.3	0.3	1.2
10-440C/D	0.00	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-440E	0.51	831.25	3,705.4	29,180.1	36,590.9	875.4	639.2	175.1	134.8	49.6	1.2	8.2	7.4	29.6
10-440F	0.46	538.85	2,149.7	16,928.9	21,228.3	507.9	370.8	101.6	78.2	28.8	0.7	4.8	4.3	17.2
10-450A	0.00	343.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-450B	0.52	3.41	15.3	120.3	150.8	3.6	2.6	0.7	0.6	0.2	0.0	0.0	0.0	0.1

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/05 - 08/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Summer Median Event Mean Concentration			8.0	63	79	1.89	1.380	0.378	0.291	0.107	0.002500	0.018	0.016	0.064
Precipitation (meters)	0.315													
10-450C	0.59	55.64	286.4	2,255.5	2,828.4	67.7	49.4	13.5	10.4	3.8	0.1	0.6	0.6	2.3
10-450D	0.45	4.62	18.0	141.9	178.0	4.3	3.1	0.9	0.7	0.2	0.0	0.0	0.0	0.1
10-450E	0.44	3.2	12.3	96.5	121.1	2.9	2.1	0.6	0.4	0.2	0.0	0.0	0.0	0.1
10-450F	0.46	158.55	631.4	4,972.5	6,235.4	149.2	108.9	29.8	23.0	8.4	0.2	1.4	1.3	5.1
10-450G/H	0.48	75.02	312.5	2,460.7	3,085.6	73.8	53.9	14.8	11.4	4.2	0.1	0.7	0.6	2.5
10-450I	0.49	243.64	1,037.5	8,170.0	10,244.9	245.1	179.0	49.0	37.7	13.9	0.3	2.3	2.1	8.3
10-450J	0.49	17.16	72.2	568.7	713.1	17.1	12.5	3.4	2.6	1.0	0.0	0.2	0.1	0.6
10-450K	0.58	37.01	185.8	1,463.5	1,835.2	43.9	32.1	8.8	6.8	2.5	0.1	0.4	0.4	1.5
10-450L	0.51	213.41	934.3	7,357.9	9,226.5	220.7	161.2	44.1	34.0	12.5	0.3	2.1	1.9	7.5
10-460	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460A	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460B	0.52	7.29	32.7	257.2	322.5	7.7	5.6	1.5	1.2	0.4	0.0	0.1	0.1	0.3
10-460C/D/F	0.00	159.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460E	0.49	231.41	990.6	7,801.2	9,782.5	234.0	170.9	46.8	36.0	13.2	0.3	2.2	2.0	7.9
10-460F	0.49	14.75	63.3	498.1	624.6	14.9	10.9	3.0	2.3	0.8	0.0	0.1	0.1	0.5
10-460G	0.51	79.66	352.7	2,777.7	3,483.2	83.3	60.8	16.7	12.8	4.7	0.1	0.8	0.7	2.8
10-460H	0.48	12.35	51.3	404.2	506.8	12.1	8.9	2.4	1.9	0.7	0.0	0.1	0.1	0.4
10-460I	0.00	72.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460J	0.46	5.36	21.5	169.7	212.7	5.1	3.7	1.0	0.8	0.3	0.0	0.0	0.0	0.2
10-460K	0.36	5.48	17.1	134.6	168.7	4.0	2.9	0.8	0.6	0.2	0.0	0.0	0.0	0.1
10-460L	0.46	3.5	14.1	110.7	138.8	3.3	2.4	0.7	0.5	0.2	0.0	0.0	0.0	0.1
10-460M	0.48	9.55	39.6	312.0	391.2	9.4	6.8	1.9	1.4	0.5	0.0	0.1	0.1	0.3
10-460N	0.45	3.85	15.0	118.3	148.3	3.5	2.6	0.7	0.5	0.2	0.0	0.0	0.0	0.1
10-460O	0.45	4.15	16.3	128.5	161.2	3.9	2.8	0.8	0.6	0.2	0.0	0.0	0.0	0.1
10-460P	0.45	4.34	16.9	133.3	167.2	4.0	2.9	0.8	0.6	0.2	0.0	0.0	0.0	0.1
10-460Q	0.56	19.73	96.5	759.8	952.8	22.8	16.6	4.6	3.5	1.3	0.0	0.2	0.2	0.8
10-460R	0.00	51.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460S	0.56	233.54	1,142.4	8,996.3	11,281.0	269.9	197.1	54.0	41.6	15.3	0.4	2.5	2.3	9.1
10-465	0.10	8.56	7.4	58.4	73.3	1.8	1.3	0.4	0.3	0.1	0.0	0.0	0.0	0.1
10-470	0.38	25.6	84.7	666.9	836.3	20.0	14.6	4.0	3.1	1.1	0.0	0.2	0.2	0.7
10-480	0.58	39.66	199.5	1,570.8	1,969.7	47.1	34.4	9.4	7.3	2.7	0.1	0.4	0.4	1.6
10-485	0.00	7.27	0.2	1.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-490	0.43	150.96	567.3	4,467.5	5,602.1	134.0	97.9	26.8	20.6	7.6	0.2	1.3	1.1	4.5
10-500A	0.26	26.21	59.6	469.6	588.8	14.1	10.3	2.8	2.2	0.8	0.0	0.1	0.1	0.5
10-500B	0.46	8.48	33.8	266.4	334.1	8.0	5.8	1.6	1.2	0.5	0.0	0.1	0.1	0.3
10-500C	0.44	111.36	420.3	3,309.5	4,150.0	99.3	72.5	19.9	15.3	5.6	0.1	0.9	0.8	3.4
10-500D	0.24	3.83	7.9	62.2	78.1	1.9	1.4	0.4	0.3	0.1	0.0	0.0	0.0	0.1
10-500E	0.53	23.34	107.7	848.3	1,063.8	25.4	18.6	5.1	3.9	1.4	0.0	0.2	0.2	0.9
10-500F	0.49	12.04	51.5	405.8	508.9	12.2	8.9	2.4	1.9	0.7	0.0	0.1	0.1	0.4
10-500G	0.00	112.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-505	0.10	7.85	6.8	53.6	67.2	1.6	1.2	0.3	0.2	0.1	0.0	0.0	0.0	0.1
10-510	0.51	62.36	275.0	2,165.3	2,715.2	65.0	47.4	13.0	10.0	3.7	0.1	0.6	0.5	2.2
10-520	0.00	139.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-530	0.45	116.15	453.9	3,574.1	4,481.9	107.2	78.3	21.4	16.5	6.1	0.1	1.0	0.9	3.6
10-540	0.12	53.9	55.3	435.7	546.4	13.1	9.5	2.6	2.0	0.7	0.0	0.1	0.1	0.4
10-550	0.46	25.83	103.0	811.0	1,016.9	24.3	17.8	4.9	3.7	1.4	0.0	0.2	0.2	0.8
10-560A/B	0.44	600.63	2,277.8	17,937.8	22,493.4	538.1	392.9	107.6	82.9	30.5	0.7	5.1	4.6	18.2
10-570A	0.54	14.64	69.0	543.4	681.5	16.3	11.9	3.3	2.5	0.9	0.0	0.2	0.1	0.6
10-570B	0.44	228.18	863.4	6,799.4	8,526.2	204.0	148.9	40.8	31.4	11.5	0.3	1.9	1.7	6.9
10-580	0.45	73.39	285.5	2,248.6	2,819.7	67.5	49.3	13.5	10.4	3.8	0.1	0.6	0.6	2.3
10-600	0.48	89.24	374.1	2,946.1	3,694.3	88.4	64.5	17.7	13.6	5.0	0.1	0.8	0.7	3.0
10-610	0.46	25.6	101.7	801.0	1,004.4	24.0	17.5	4.8	3.7	1.4	0.0	0.2	0.2	0.8
10-620	0.00	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630A	0.10	6.24	5.4	42.6	53.4	1.3	0.9	0.3	0.2	0.1	0.0	0.0	0.0	0.0
10-630B	0.45	4.68	18.3	143.8	180.3	4.3	3.1	0.9	0.7	0.2	0.0	0.0	0.0	0.1
10-630C	0.48	96.03	402.2	3,167.1	3,971.5	95.0	69.4	19.0	14.6	5.4	0.1	0.9	0.8	3.2
10-630D	0.45	6.37	24.8	195.7	245.4	5.9	4.3	1.2	0.9	0.3	0.0	0.1	0.0	0.2
10-630E	0.45	8.52	33.2	261.7	328.2	7.9	5.7	1.6	1.2	0.4	0.0	0.1	0.1	0.3
10-630F	0.54	17.56	82.2	647.6	812.1	19.4	14.2	3.9	3.0	1.1	0.0	0.2	0.2	0.7
10-630G	0.45	5.9	23.0	181.2	227.3	5.4	4.0	1.1	0.8	0.3	0.0	0.1	0.0	0.2
10-630H	0.30	25.63	67.3	529.9	664.5	15.9	11.6	3.2	2.4	0.9	0.0	0.1	0.1	0.5
10-630I	0.47	12.48	50.3	396.2	496.8	11.9	8.7	2.4	1.8	0.7	0.0	0.1	0.1	0.4
10-630J	0.55	14.69	70.5	555.2	696.2	16.7	12.2	3.3	2.6	0.9	0.0	0.2	0.1	0.6
10-630K	0.47	95.29	390.9	3,078.7	3,860.6	92.4	67.4	18.5	14.2	5.2	0.1	0.9	0.8	3.1
10-630L	0.52	100.42	453.5	3,571.5	4,478.5	107.1	78.2	21.4	16.5	6.1	0.1	1.0	0.9	3.6
10-630M	0.50	11.71	50.4	396.9	497.7	11.9	8.7	2.4	1.8	0.7	0.0	0.1	0.1	0.4
10-630N	0.45	8.45	33.0	259.6	325.5	7.8	5.7	1.6	1.2	0.4	0.0	0.1	0.1	0.3
10-630O	0.36	5.77	18.2	143.4	179.8	4.3	3.1	0.9	0.7	0.2	0.0	0.0	0.0	0.1
10-630P/Q	0.00	67.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630R	0.33	83.89	242.9	1,912.6	2,398.4	57.4	41.9	11.5	8.8	3.2	0.1	0.5	0.5	1.9
10-630S	0.22	37.02	69.8	549.3	688.9	16.5	12.0	3.3	2.5	0.9	0.0	0.2	0.1	0.6
10-630T	0.56	7.72	37.6	296.4	371.7	8.9	6.5	1.8	1.4	0.5	0.0	0.1	0.1	0.3
10-630U	0.52	115.42	523.4	4,121.4	5,168.2	123.6	90.3	24.7	19.0	7.0	0.2	1.2	1.0	4.2
10-630V	0.11	33.85	31.0	244.0	306.0	7.3	5.3	1.5	1.1	0.4	0.0	0.1	0.1	0.2
10-630W	0.47	23.68	97.2	765.7	960.2	23.0	16.8	4.6	3.5	1.3	0.0	0.2	0.2	0.8
10-630X	0.44	14.78	56.7	446.3	559.7	13.4	9.8	2.7	2.1	0.8	0.0	0.1	0.1	0.5
10-630Y	0.00	112.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630Z	0.47	45.66	186.3	1,467.4	1,840.1	44.0	32.1	8.8	6.8	2.5	0.1	0.4	0.4	1.5
10-640	0.46	258.18	1,023.6	8,060.6	10,107.7	241.8	176.6	48.4	37.2	13.7	0.3	2.3	2.0	8.2
10-650	0.56	19.53	94.3	742.6	931.2	22.3	16.3	4.5	3.4	1.3	0.0	0.2	0.2	0.8
10-660	0.46	306.37	1,230.3	9,688.6	12,149.1	290.7	212.2	58.1	44.8	16.5	0.4	2.7	2.5	9.8
10-670	0.45	137.88	537.1	4,229.3	5,303.4	126.9	92.6	25.4	19.5	7.2	0.2	1.2	1.1	4.3
10-680	0.46	707.95	2,813.8	22,158.9	27,786.6	664.8	485.4	133.0	102.4	37.6	0.9	6.3	5.6	22.5
10-690	0.50	70.63	306.3	2,412.1	3,024.7	72.4	52.8	14.5	11.1	4.1	0.1	0.7	0.6	2.5
10-700	0.46	222.07	893.9	7,039.4	8,827.1	211.2	154.2	42.2	32.5	12.0	0.3	2.0	1.8	7.2
10-710	0.33	29.95	86.5	681.1	854.0	20.4	14.9	4.1	3.1	1.2	0.0	0.2	0.2	0.7

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/05 - 08/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Summer Median Event Mean Concentration			8.0	63	79	1.89	1.380	0.378	0.291	0.107	0.002500	0.018	0.016	0.064
Precipitation (meters)	0.315													
10-720A	0.44	15.77	60.6	477.4	598.6	14.3	10.5	2.9	2.2	0.8	0.0	0.1	0.1	0.5
10-720B	0.48	422.18	1,763.1	13,884.8	17,411.1	416.5	304.1	83.3	64.1	23.6	0.6	3.9	3.5	14.1
10-720C	0.43	26.35	98.1	772.4	968.5	23.2	16.9	4.6	3.6	1.3	0.0	0.2	0.2	0.8
10-720D	0.46	22.95	90.6	713.2	894.4	21.4	15.6	4.3	3.3	1.2	0.0	0.2	0.2	0.7
10-720E	0.46	18.39	72.6	572.1	717.4	17.2	12.5	3.4	2.6	1.0	0.0	0.2	0.1	0.6
10-720F	0.48	317.75	1,321.6	10,407.5	13,050.7	312.2	228.0	62.4	48.1	17.7	0.4	2.9	2.6	10.6
10-720G	0.00	13.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-720H	0.45	4.55	17.7	139.8	175.3	4.2	3.1	0.8	0.6	0.2	0.0	0.0	0.0	0.1
10-720I	0.45	87.27	337.4	2,656.7	3,331.5	79.7	58.2	15.9	12.3	4.5	0.1	0.8	0.7	2.7
10-720J	0.36	3.71	11.5	90.5	113.5	2.7	2.0	0.5	0.4	0.2	0.0	0.0	0.0	0.1
10-720K	0.55	32.76	155.9	1,227.9	1,539.8	36.8	26.9	7.4	5.7	2.1	0.0	0.3	0.3	1.2
10-720L	0.45	4.57	17.8	140.4	176.0	4.2	3.1	0.8	0.6	0.2	0.0	0.0	0.0	0.1
20-010	0.42	93.99	342.0	2,693.5	3,377.6	80.8	59.0	16.2	12.4	4.6	0.1	0.8	0.7	2.7
20-020	0.44	15.09	57.4	451.9	566.6	13.6	9.9	2.7	2.1	0.8	0.0	0.1	0.1	0.5
20-030	0.45	7.95	31.0	244.2	306.2	7.3	5.3	1.5	1.1	0.4	0.0	0.1	0.1	0.2
20-040	0.37	6.79	21.9	172.8	216.7	5.2	3.8	1.0	0.8	0.3	0.0	0.0	0.0	0.2
20-050	0.00	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-060	0.45	5.91	23.1	181.5	227.7	5.4	4.0	1.1	0.8	0.3	0.0	0.1	0.0	0.2
20-070	0.44	39.07	150.2	1,182.5	1,482.9	35.5	25.9	7.1	5.5	2.0	0.0	0.3	0.3	1.2
20-080	0.45	33.72	132.5	1,043.6	1,308.7	31.3	22.9	6.3	4.8	1.8	0.0	0.3	0.3	1.1
20-090	0.55	9.95	47.7	375.4	470.8	11.3	8.2	2.3	1.7	0.6	0.0	0.1	0.1	0.4
20-100	0.10	0.99	0.9	6.8	8.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-110	0.24	216.04	449.3	3,538.3	4,436.9	106.1	77.5	21.2	16.3	6.0	0.1	1.0	0.9	3.6
20-120	0.47	10.22	41.4	326.1	408.9	9.8	7.1	2.0	1.5	0.6	0.0	0.1	0.1	0.3
20-130	0.45	16.12	62.9	495.2	620.9	14.9	10.8	3.0	2.3	0.8	0.0	0.1	0.1	0.5
20-140	0.44	2.97	11.4	89.5	112.2	2.7	2.0	0.5	0.4	0.2	0.0	0.0	0.0	0.1
20-150	0.45	14.48	56.5	444.8	557.8	13.3	9.7	2.7	2.1	0.8	0.0	0.1	0.1	0.5
20-160	0.54	3.21	15.0	118.4	148.5	3.6	2.6	0.7	0.5	0.2	0.0	0.0	0.0	0.1
20-170	0.37	4.94	16.0	125.6	157.6	3.8	2.8	0.8	0.6	0.2	0.0	0.0	0.0	0.1
20-180	0.51	5.3	23.3	183.1	229.6	5.5	4.0	1.1	0.8	0.3	0.0	0.1	0.0	0.2
20-190	0.45	1.35	5.3	41.5	52.0	1.2	0.9	0.2	0.2	0.1	0.0	0.0	0.0	0.0
20-200	0.45	13.84	54.0	425.1	533.1	12.8	9.3	2.6	2.0	0.7	0.0	0.1	0.1	0.4
20-210A	0.44	92.9	353.7	2,785.7	3,493.2	83.6	61.0	16.7	12.9	4.7	0.1	0.8	0.7	2.8
20-210B	0.50	620.78	2,715.1	21,381.6	26,811.9	641.4	468.4	128.3	98.8	36.3	0.8	6.0	5.4	21.7
20-220	0.46	26.38	105.4	830.2	1,041.1	24.9	18.2	5.0	3.8	1.4	0.0	0.2	0.2	0.8
20-230	0.00	21.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-240	0.48	30.06	125.5	988.7	1,239.8	29.7	21.7	5.9	4.6	1.7	0.0	0.3	0.3	1.0
20-250	0.57	6.28	31.1	245.1	307.3	7.4	5.4	1.5	1.1	0.4	0.0	0.1	0.1	0.2
20-260	0.60	3.5	18.2	143.4	179.8	4.3	3.1	0.9	0.7	0.2	0.0	0.0	0.0	0.1
20-270	0.48	42.81	176.9	1,393.1	1,747.0	41.8	30.5	8.4	6.4	2.4	0.1	0.4	0.4	1.4
20-280	0.54	8.98	41.8	329.5	413.1	9.9	7.2	2.0	1.5	0.6	0.0	0.1	0.1	0.3
20-290	0.00	4.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-010	0.45	49.49	192.3	1,514.4	1,899.0	45.4	33.2	9.1	7.0	2.6	0.1	0.4	0.4	1.5
40-010	0.45	719.17	2,793.6	21,999.5	27,586.7	660.0	481.9	132.0	101.6	37.4	0.9	6.2	5.6	22.3
40-020	0.45	15.36	59.9	471.8	591.7	14.2	10.3	2.8	2.2	0.8	0.0	0.1	0.1	0.5
40-030	0.42	51.02	184.8	1,454.9	1,824.4	43.6	31.9	8.7	6.7	2.5	0.1	0.4	0.4	1.5
40-040	0.43	65.39	246.1	1,938.2	2,430.4	58.1	42.5	11.6	9.0	3.3	0.1	0.5	0.5	2.0
40-050	0.45	10.28	40.1	315.8	396.0	9.5	6.9	1.9	1.5	0.5	0.0	0.1	0.1	0.3
40-060	0.45	3.2	12.5	98.3	123.3	2.9	2.2	0.6	0.5	0.2	0.0	0.0	0.0	0.1
40-070	0.38	7.98	26.2	206.1	258.4	6.2	4.5	1.2	1.0	0.4	0.0	0.1	0.1	0.2
40-080	0.41	60.51	214.2	1,686.9	2,115.3	50.6	37.0	10.1	7.8	2.9	0.1	0.5	0.4	1.7
40-090	0.46	20.65	83.2	655.3	821.7	19.7	14.4	3.9	3.0	1.1	0.0	0.2	0.2	0.7
40-100	0.00	20.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-110	0.44	2.61	10.0	79.1	99.2	2.4	1.7	0.5	0.4	0.1	0.0	0.0	0.0	0.1
40-120	0.44	65.87	250.3	1,970.7	2,471.2	59.1	43.2	11.8	9.1	3.3	0.1	0.6	0.5	2.0
40-130	0.45	35.01	137.1	1,079.9	1,354.2	32.4	23.7	6.5	5.0	1.8	0.0	0.3	0.3	1.1
40-140	0.35	125.46	378.2	2,978.1	3,734.5	89.3	65.2	17.9	13.8	5.1	0.1	0.8	0.8	3.0
40-150	0.47	24.31	99.8	786.2	985.8	23.6	17.2	4.7	3.6	1.3	0.0	0.2	0.2	0.8
40-160	0.49	30.99	132.8	1,045.8	1,311.4	31.4	22.9	6.3	4.8	1.8	0.0	0.3	0.3	1.1
40-170	0.00	194.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-180	0.54	16.8	78.4	617.4	774.2	18.5	13.5	3.7	2.9	1.0	0.0	0.2	0.2	0.6
40-190	0.53	65.53	300.4	2,365.4	2,966.1	71.0	51.8	14.2	10.9	4.0	0.1	0.7	0.6	2.4
40-200	0.46	24.75	99.2	781.1	979.5	23.4	17.1	4.7	3.6	1.3	0.0	0.2	0.2	0.8
40-210	0.54	17.26	81.5	642.0	805.0	19.3	14.1	3.9	3.0	1.1	0.0	0.2	0.2	0.7
40-220	0.47	100.58	407.6	3,209.8	4,024.9	96.3	70.3	19.3	14.8	5.5	0.1	0.9	0.8	3.3
40-230	0.44	13.78	53.1	418.4	524.7	12.6	9.2	2.5	1.9	0.7	0.0	0.1	0.1	0.4
40-240	0.00	340.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-250	0.60	1.15	6.0	47.1	59.1	1.4	1.0	0.3	0.2	0.1	0.0	0.0	0.0	0.0
40-260	0.45	3.49	13.6	107.2	134.4	3.2	2.3	0.6	0.5	0.2	0.0	0.0	0.0	0.1
40-270	0.45	9.59	37.4	294.6	369.4	8.8	6.5	1.8	1.4	0.5	0.0	0.1	0.1	0.3
40-280	0.53	12.76	58.2	458.1	574.4	13.7	10.0	2.7	2.1	0.8	0.0	0.1	0.1	0.5
40-290	0.51	13.73	60.9	479.9	601.8	14.4	10.5	2.9	2.2	0.8	0.0	0.1	0.1	0.5
40-300	0.52	10.38	46.9	369.2	463.0	11.1	8.1	2.2	1.7	0.6	0.0	0.1	0.1	0.4
40-310	0.45	97.86	384.0	3,023.8	3,791.8	90.7	66.2	18.1	14.0	5.1	0.1	0.9	0.8	3.1
40-320	0.60	9.43	49.0	386.2	484.3	11.6	8.5	2.3	1.8	0.7	0.0	0.1	0.1	0.4
40-330	0.59	15.34	78.8	620.7	778.3	18.6	13.6	3.7	2.9	1.1	0.0	0.2	0.2	0.6
40-340	0.53	35.27	162.9	1,283.1	1,609.0	38.5	28.1	7.7	5.9	2.2	0.1	0.4	0.3	1.3
40-350	0.60	8.99	46.8	368.2	461.7	11.0	8.1	2.2	1.7	0.6	0.0	0.1	0.1	0.4
40-360	0.60	8.09	42.1	331.4	415.5	9.9	7.3	2.0	1.5	0.6	0.0	0.1	0.1	0.3
40-370	0.58	12.41	62.2	490.0	614.5	14.7	10.7	2.9	2.3	0.8	0.0	0.1	0.1	0.5
40-380	0.39	24.92	85.0	669.3	839.2	20.1	14.7	4.0	3.1	1.1	0.0	0.2	0.2	0.7
40-390	0.58	5.72	28.8	226.5	284.0	6.8	5.0	1.4	1.0	0.4	0.0	0.1	0.1	0.2
40-400	0.10	1.07	0.9	7.3	9.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41-010	0.38	94.73	309.9	2,440.8	3,060.7	73.2	53.5	14.6	11.3	4.1	0.1	0.7	0.6	2.5
41-020	0.00	14.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41-030	0.50	60.47	263.1	2,072.2	2,598.4	62.2	45.4	12.4	9.6	3.5	0.1	0.6	0.5	2.1

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/05 - 08/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Summer Median Event Mean Concentration			8.0	63	79	1.89	1.380	0.378	0.291	0.107	0.002500	0.018	0.016	0.064
Precipitation (meters)	0.315													
41-040	0.57	35.59	176.8	1,392.1	1,745.7	41.8	30.5	8.4	6.4	2.4	0.1	0.4	0.4	1.4
41-050	0.60	10.48	54.5	429.2	538.3	12.9	9.4	2.6	2.0	0.7	0.0	0.1	0.1	0.4
41-060	0.60	2.95	15.3	120.8	151.5	3.6	2.6	0.7	0.6	0.2	0.0	0.0	0.0	0.1
51-010	0.45	29.63	115.9	912.9	1,144.7	27.4	20.0	5.5	4.2	1.6	0.0	0.3	0.2	0.9
51-020	0.45	4.55	17.7	139.8	175.3	4.2	3.1	0.8	0.6	0.2	0.0	0.0	0.0	0.1
52-010	0.28	45.29	108.5	854.4	1,071.4	25.6	18.7	5.1	3.9	1.5	0.0	0.2	0.2	0.9
52-020	0.45	6.09	23.8	187.1	234.6	5.6	4.1	1.1	0.9	0.3	0.0	0.1	0.0	0.2
52-030	0.45	7.18	28.0	220.6	276.6	6.6	4.8	1.3	1.0	0.4	0.0	0.1	0.1	0.2
52-040	0.41	4.54	16.3	128.1	160.6	3.8	2.8	0.8	0.6	0.2	0.0	0.0	0.0	0.1
52-050	0.44	15.3	57.7	454.4	569.7	13.6	10.0	2.7	2.1	0.8	0.0	0.1	0.1	0.5
52-060	0.10	3.22	2.8	22.0	27.6	0.7	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
52-070	0.42	86.94	318.9	2,511.5	3,149.4	75.3	55.0	15.1	11.6	4.3	0.1	0.7	0.6	2.6
52-080	0.24	8.08	17.0	133.5	167.4	4.0	2.9	0.8	0.6	0.2	0.0	0.0	0.0	0.1
52-090	0.45	4.89	19.1	150.2	188.4	4.5	3.3	0.9	0.7	0.3	0.0	0.0	0.0	0.2
52-100A/B	0.27	11.89	27.5	216.4	271.4	6.5	4.7	1.3	1.0	0.4	0.0	0.1	0.1	0.2
52-110	0.45	8.84	34.2	269.4	337.8	8.1	5.9	1.6	1.2	0.5	0.0	0.1	0.1	0.3
52-120	0.45	14.74	57.5	452.8	567.8	13.6	9.9	2.7	2.1	0.8	0.0	0.1	0.1	0.5
52-130	0.31	7.18	19.6	154.3	193.5	4.6	3.4	0.9	0.7	0.3	0.0	0.0	0.0	0.2
53-010	0.45	7.03	27.4	216.0	270.8	6.5	4.7	1.3	1.0	0.4	0.0	0.1	0.1	0.2
53-020	0.28	12.38	29.7	233.6	292.9	7.0	5.1	1.4	1.1	0.4	0.0	0.1	0.1	0.2
53-030	0.44	11.37	43.1	339.1	425.2	10.2	7.4	2.0	1.6	0.6	0.0	0.1	0.1	0.3
53-040	0.45	2.78	10.8	85.4	107.1	2.6	1.9	0.5	0.4	0.1	0.0	0.0	0.0	0.1
53-050	0.45	13.66	53.3	419.6	526.2	12.6	9.2	2.5	1.9	0.7	0.0	0.1	0.1	0.4
53-060	0.45	20.37	79.5	625.7	784.7	18.8	13.7	3.8	2.9	1.1	0.0	0.2	0.2	0.6
53-070	0.45	4.89	19.1	150.2	188.4	4.5	3.3	0.9	0.7	0.3	0.0	0.0	0.0	0.2
53-080	0.39	5.81	19.9	156.3	196.1	4.7	3.4	0.9	0.7	0.3	0.0	0.0	0.0	0.2
53-090	0.46	59.59	237.2	1,867.8	2,342.2	56.0	40.9	11.2	8.6	3.2	0.1	0.5	0.5	1.9
53-100	0.00	107	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53-110	0.38	4.59	15.3	120.6	151.2	3.6	2.6	0.7	0.6	0.2	0.0	0.0	0.0	0.1
53-120A/B	0.46	129.79	512.6	4,036.7	5,062.0	121.1	88.4	24.2	18.6	6.9	0.2	1.1	1.0	4.1
53-130	0.45	5.02	19.6	154.2	193.4	4.6	3.4	0.9	0.7	0.3	0.0	0.0	0.0	0.2
53-140	0.45	6.36	24.8	195.4	245.0	5.9	4.3	1.2	0.9	0.3	0.0	0.1	0.0	0.2
53-150	0.48	90.4	379.1	2,985.7	3,743.9	89.6	65.4	17.9	13.8	5.1	0.1	0.8	0.8	3.0
53-160	0.47	252.19	1,033.5	8,139.0	10,206.0	244.2	178.3	48.8	37.6	13.8	0.3	2.3	2.1	8.3
53-170	0.36	6.39	20.0	157.4	197.4	4.7	3.4	0.9	0.7	0.3	0.0	0.0	0.0	0.2
53-180	0.10	8.09	7.0	55.2	69.3	1.7	1.2	0.3	0.3	0.1	0.0	0.0	0.0	0.1
53-190	0.30	11.41	29.7	234.1	293.5	7.0	5.1	1.4	1.1	0.4	0.0	0.1	0.1	0.2
54-010A/B	0.44	84.93	320.3	2,522.5	3,163.1	75.7	55.3	15.1	11.7	4.3	0.1	0.7	0.6	2.6
54-040A/B	0.49	255.14	1,094.6	8,620.3	10,809.6	258.6	188.8	51.7	39.8	14.6	0.3	2.4	2.2	8.8
54-050	0.17	9.27	14.0	110.0	138.0	3.3	2.4	0.7	0.5	0.2	0.0	0.0	0.0	0.1
54-060	0.44	32.13	122.3	963.4	1,208.1	28.9	21.1	5.8	4.5	1.6	0.0	0.3	0.2	1.0
54-070	0.36	60.8	189.0	1,488.3	1,866.2	44.6	32.6	8.9	6.9	2.5	0.1	0.4	0.4	1.5
54-080A/B/C	0.46	414.26	1,641.4	12,926.1	16,208.9	387.8	283.1	77.6	59.7	22.0	0.5	3.7	3.3	13.1
54-090	0.10	3.55	3.1	24.2	30.4	0.7	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
54-100A/B	0.60	114.24	589.9	4,645.6	5,825.4	139.4	101.8	27.9	21.5	7.9	0.2	1.3	1.2	4.7
54-110	0.45	24.55	95.8	754.1	945.7	22.6	16.5	4.5	3.5	1.3	0.0	0.2	0.2	0.8
54-120	0.46	62.08	245.9	1,936.5	2,428.3	58.1	42.4	11.6	8.9	3.3	0.1	0.5	0.5	2.0
54-130	0.10	1.07	0.9	7.3	9.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54-140A/B	0.41	113.01	399.6	3,147.0	3,946.2	94.4	68.9	18.9	14.5	5.3	0.1	0.9	0.8	3.2
54-150	0.45	55.34	213.6	1,682.3	2,109.6	50.5	36.9	10.1	7.8	2.9	0.1	0.5	0.4	1.7
54-160	0.60	2.62	13.6	107.3	134.6	3.2	2.4	0.6	0.5	0.2	0.0	0.0	0.0	0.1
54-170	0.59	8.08	41.6	328.0	411.3	9.8	7.2	2.0	1.5	0.6	0.0	0.1	0.1	0.3
54-180	0.60	2.82	14.7	115.5	144.8	3.5	2.5	0.7	0.5	0.2	0.0	0.0	0.0	0.1
54-190	0.10	2.2	1.9	15.0	18.8	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
54-200	0.10	2.13	1.8	14.5	18.2	0.4	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
54-210	0.10	1.14	1.0	7.8	9.8	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55-010	0.60	14.98	77.9	613.6	769.4	18.4	13.4	3.7	2.8	1.0	0.0	0.2	0.2	0.6
55-020	0.60	189.58	979.6	7,714.4	9,673.7	231.4	169.0	46.3	35.6	13.1	0.3	2.2	2.0	7.8
56-010	0.60	67.62	351.7	2,769.6	3,473.0	83.1	60.7	16.6	12.8	4.7	0.1	0.8	0.7	2.8
57-010	0.53	26.1	120.7	950.5	1,191.8	28.5	20.8	5.7	4.4	1.6	0.0	0.3	0.2	1.0
57-020	0.00	142	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-030	0.45	18.22	71.1	559.7	701.8	16.8	12.3	3.4	2.6	1.0	0.0	0.2	0.1	0.6
57-040	0.35	39.88	120.6	950.0	1,191.3	28.5	20.8	5.7	4.4	1.6	0.0	0.3	0.2	1.0
57-050	0.45	7.9	30.8	242.7	304.3	7.3	5.3	1.5	1.1	0.4	0.0	0.1	0.1	0.2
57-060	0.46	26.11	104.7	824.3	1,033.6	24.7	18.1	4.9	3.8	1.4	0.0	0.2	0.2	0.8
57-070	0.45	81.33	318.0	2,504.3	3,140.4	75.1	54.9	15.0	11.6	4.3	0.1	0.7	0.6	2.5
57-080	0.42	5.54	20.3	159.9	200.5	4.8	3.5	1.0	0.7	0.3	0.0	0.0	0.0	0.2
57-090	0.47	77.77	316.4	2,491.5	3,124.3	74.7	54.6	14.9	11.5	4.2	0.1	0.7	0.6	2.5
57-100A/B	0.47	313.43	1,283.5	10,107.7	12,674.7	303.2	221.4	60.6	46.7	17.2	0.4	2.9	2.6	10.3
57-110	0.54	21.6	101.3	797.4	999.9	23.9	17.5	4.8	3.7	1.4	0.0	0.2	0.2	0.8
57-120A/B/C	0.00	65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-130	0.10	1.16	1.0	7.9	9.9	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-140	0.10	1.55	1.3	10.6	13.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
57-150	0.43	35.68	133.5	1,051.2	1,318.2	31.5	23.0	6.3	4.9	1.8	0.0	0.3	0.3	1.1
57-160	0.10	1.89	1.6	12.9	16.2	0.4	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
61-010	0.55	2.86	13.7	107.7	135.1	3.2	2.4	0.6	0.5	0.2	0.0	0.0	0.0	0.1
62-010	0.45	27.84	109.1	859.2	1,077.4	25.8	18.8	5.2	4.0	1.5	0.0	0.2	0.2	0.9
63-010	0.45	388.79	1,523.8	11,999.7	15,047.3	360.0	262.9	72.0	55.4	20.4	0.5	3.4	3.0	12.2
63-020	0.00	11.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64-100	0.45	24.92	97.1	764.8	959.0	22.9	16.8	4.6	3.5	1.3	0.0	0.2	0.2	0.8
64-110	0.45	6.01	23.4	184.6	231.5	5.5	4.0	1.1	0.9	0.3	0.0	0.1	0.0	0.2
64-120	0.45	16.04	62.6	492.7	617.9	14.8	10.8	3.0	2.3	0.8	0.0	0.1	0.1	0.5
64-130	0.45	2.44	9.5	75.0	94.0	2.2	1.6	0.4	0.3	0.1	0.0	0.0	0.0	0.1
65-010	0.00	18.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65-020	0.53	38.46	176.4	1,389.3	1,742.1	41.7	30.4	8.3	6.4	2.4	0.1	0.4	0.4	1.4
70-010	0.46	6.23	24.8	195.0	244.6	5.9	4.3	1.2	0.9	0.3	0.0	0.1	0.0	0.2

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/05 - 08/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Summer Median Event Mean Concentration			8.0	63	79	1.89	1.380	0.378	0.291	0.107	0.002500	0.018	0.016	0.064
Precipitation (meters)	0.315													
70-015	0.45	11.69	45.6	359.1	450.3	10.8	7.9	2.2	1.7	0.6	0.0	0.1	0.1	0.4
70-020	0.45	37.55	146.5	1,153.5	1,446.4	34.6	25.3	6.9	5.3	2.0	0.0	0.3	0.3	1.2
70-025	0.00	3.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-030	0.45	13.48	52.5	413.8	518.9	12.4	9.1	2.5	1.9	0.7	0.0	0.1	0.1	0.4
70-035	0.45	4.53	17.7	139.2	174.5	4.2	3.0	0.8	0.6	0.2	0.0	0.0	0.0	0.1
70-040	0.45	2.42	9.4	74.3	93.2	2.2	1.6	0.4	0.3	0.1	0.0	0.0	0.0	0.1
70-045	0.00	0.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-050	0.45	17.41	67.9	534.8	670.6	16.0	11.7	3.2	2.5	0.9	0.0	0.2	0.1	0.5
70-055	0.46	333.43	1,341.4	10,563.9	13,246.7	316.9	231.4	63.4	48.8	17.9	0.4	3.0	2.7	10.7
70-060	0.45	3.53	13.8	108.4	136.0	3.3	2.4	0.7	0.5	0.2	0.0	0.0	0.0	0.1
70-065	0.45	1.89	7.4	58.1	72.8	1.7	1.3	0.3	0.3	0.1	0.0	0.0	0.0	0.1
70-070	0.45	5.8	22.6	178.2	223.4	5.3	3.9	1.1	0.8	0.3	0.0	0.1	0.0	0.2
70-075	0.43	5	18.7	147.2	184.6	4.4	3.2	0.9	0.7	0.3	0.0	0.0	0.0	0.1
70-080	0.46	11.96	47.9	377.2	473.0	11.3	8.3	2.3	1.7	0.6	0.0	0.1	0.1	0.4
70-085	0.45	229.48	889.7	7,006.0	8,785.4	210.2	153.5	42.0	32.4	11.9	0.3	2.0	1.8	7.1
70-090	0.45	18.57	72.4	570.4	715.3	17.1	12.5	3.4	2.6	1.0	0.0	0.2	0.1	0.6
70-095	0.45	9.99	39.0	306.9	384.8	9.2	6.7	1.8	1.4	0.5	0.0	0.1	0.1	0.3
70-100	0.45	9.64	37.6	296.1	371.3	8.9	6.5	1.8	1.4	0.5	0.0	0.1	0.1	0.3
70-105	0.45	1.63	6.4	50.1	62.8	1.5	1.1	0.3	0.2	0.1	0.0	0.0	0.0	0.1
70-110	0.45	18.13	70.7	556.9	698.4	16.7	12.2	3.3	2.6	0.9	0.0	0.2	0.1	0.6
70-115	0.45	3.71	14.5	114.0	142.9	3.4	2.5	0.7	0.5	0.2	0.0	0.0	0.0	0.1
70-120	0.45	4.22	16.5	129.6	162.6	3.9	2.8	0.8	0.6	0.2	0.0	0.0	0.0	0.1
70-125	0.00	5.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-130	0.49	34.29	146.7	1,155.6	1,449.1	34.7	25.3	6.9	5.3	2.0	0.0	0.3	0.3	1.2
70-135	0.45	7.46	29.1	229.2	287.4	6.9	5.0	1.4	1.1	0.4	0.0	0.1	0.1	0.2
70-140	0.60	0.78	4.1	31.9	40.1	1.0	0.7	0.2	0.1	0.1	0.0	0.0	0.0	0.0
70-145	0.60	9.19	47.8	376.4	472.0	11.3	8.2	2.3	1.7	0.6	0.0	0.1	0.1	0.4
70-150	0.45	4.51	17.6	138.5	173.7	4.2	3.0	0.8	0.6	0.2	0.0	0.0	0.0	0.1
70-155	0.45	2.05	8.0	63.0	79.0	1.9	1.4	0.4	0.3	0.1	0.0	0.0	0.0	0.1
70-160	0.45	2.95	11.5	90.6	113.6	2.7	2.0	0.5	0.4	0.2	0.0	0.0	0.0	0.1
70-165	0.45	27.77	108.3	853.1	1,069.7	25.6	18.7	5.1	3.9	1.4	0.0	0.2	0.2	0.9
70-170	0.45	23.74	92.6	729.3	914.5	21.9	16.0	4.4	3.4	1.2	0.0	0.2	0.2	0.7
70-175	0.46	30.89	122.4	964.1	1,209.0	28.9	21.1	5.8	4.5	1.6	0.0	0.3	0.2	1.0
70-180	0.45	1.14	4.4	35.0	43.9	1.1	0.8	0.2	0.2	0.1	0.0	0.0	0.0	0.0
70-185	0.45	1.53	6.0	47.0	58.9	1.4	1.0	0.3	0.2	0.1	0.0	0.0	0.0	0.0
70-190	0.17	15.04	22.4	176.7	221.6	5.3	3.9	1.1	0.8	0.3	0.0	0.0	0.0	0.2
70-195	0.45	46.02	180.5	1,421.4	1,782.4	42.6	31.1	8.5	6.6	2.4	0.1	0.4	0.4	1.4
70-200	0.45	31.52	123.0	968.3	1,214.2	29.0	21.2	5.8	4.5	1.6	0.0	0.3	0.2	1.0
70-205	0.45	1.39	5.4	42.7	53.5	1.3	0.9	0.3	0.2	0.1	0.0	0.0	0.0	0.0
70-210	0.45	3.58	14.0	110.0	137.9	3.3	2.4	0.7	0.5	0.2	0.0	0.0	0.0	0.1
70-215	0.45	5.93	23.1	182.2	228.4	5.5	4.0	1.1	0.8	0.3	0.0	0.1	0.0	0.2
70-220	0.45	4.54	17.7	139.5	174.9	4.2	3.1	0.8	0.6	0.2	0.0	0.0	0.0	0.1
70-225	0.45	4.99	19.5	153.3	192.2	4.6	3.4	0.9	0.7	0.3	0.0	0.0	0.0	0.2
70-230	0.45	4.72	18.4	145.0	181.8	4.3	3.2	0.9	0.7	0.2	0.0	0.0	0.0	0.1
70-235	0.45	5.04	19.7	154.8	194.1	4.6	3.4	0.9	0.7	0.3	0.0	0.0	0.0	0.2
70-240	0.45	4.52	17.6	138.8	174.1	4.2	3.0	0.8	0.6	0.2	0.0	0.0	0.0	0.1
70-245	0.44	9.98	38.0	299.1	375.0	9.0	6.6	1.8	1.4	0.5	0.0	0.1	0.1	0.3
70-250	0.48	41.27	172.6	1,358.9	1,704.0	40.8	29.8	8.2	6.3	2.3	0.1	0.4	0.3	1.4
70-255	0.45	45.37	177.0	1,394.1	1,748.2	41.8	30.5	8.4	6.4	2.4	0.1	0.4	0.4	1.4
70-260	0.46	24.9	98.8	778.1	975.7	23.3	17.0	4.7	3.6	1.3	0.0	0.2	0.2	0.8
70-265A/B	0.00	183.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-270	0.45	4.66	18.2	143.1	179.5	4.3	3.1	0.9	0.7	0.2	0.0	0.0	0.0	0.1
70-275	0.45	4.28	16.7	131.5	164.9	3.9	2.9	0.8	0.6	0.2	0.0	0.0	0.0	0.1
70-280	0.45	9.39	36.7	288.9	362.3	8.7	6.3	1.7	1.3	0.5	0.0	0.1	0.1	0.3
70-285	0.45	19.03	74.2	583.9	732.2	17.5	12.8	3.5	2.7	1.0	0.0	0.2	0.1	0.6
70-290	0.45	2.37	9.2	72.2	90.5	2.2	1.6	0.4	0.3	0.1	0.0	0.0	0.0	0.1
70-295	0.45	7.18	28.0	220.6	276.6	6.6	4.8	1.3	1.0	0.4	0.0	0.1	0.1	0.2
70-300	0.10	0.4	0.3	2.7	3.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-305	0.45	12.68	49.0	386.0	484.0	11.6	8.5	2.3	1.8	0.7	0.0	0.1	0.1	0.4
70-310	0.00	5.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-315	0.30	5.79	15.1	118.6	148.7	3.6	2.6	0.7	0.5	0.2	0.0	0.0	0.0	0.1
70-320	0.44	2.32	8.8	69.6	87.2	2.1	1.5	0.4	0.3	0.1	0.0	0.0	0.0	0.1
70-325	0.00	2.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-330	0.47	279.41	1,140.9	8,984.6	11,266.4	269.5	196.8	53.9	41.5	15.3	0.4	2.5	2.3	9.1
70-335	0.45	1.99	7.8	61.1	76.7	1.8	1.3	0.4	0.3	0.1	0.0	0.0	0.0	0.1
70-340	0.39	22.25	75.9	597.6	749.3	17.9	13.1	3.6	2.8	1.0	0.0	0.2	0.2	0.6
70-345	0.45	3.81	14.9	117.0	146.8	3.5	2.6	0.7	0.5	0.2	0.0	0.0	0.0	0.1
70-350	0.49	314.4	1,346.7	10,604.9	13,298.2	318.1	232.3	63.6	49.0	18.0	0.4	3.0	2.7	10.8
70-355	0.45	1.29	5.0	39.6	49.7	1.2	0.9	0.2	0.2	0.1	0.0	0.0	0.0	0.0
70-360	0.45	131.96	519.9	4,094.3	5,134.1	122.8	89.7	24.6	18.9	7.0	0.2	1.2	1.0	4.2
70-365	0.45	6.7	26.1	205.8	258.1	6.2	4.5	1.2	1.0	0.3	0.0	0.1	0.1	0.2
70-370	0.44	3.75	14.4	113.4	142.2	3.4	2.5	0.7	0.5	0.2	0.0	0.0	0.0	0.1
70-375	0.47	7.1	29.1	229.1	287.3	6.9	5.0	1.4	1.1	0.4	0.0	0.1	0.1	0.2
70-380	0.45	14.4	56.2	442.4	554.7	13.3	9.7	2.7	2.0	0.8	0.0	0.1	0.1	0.4
70-385	0.45	14.97	58.4	459.9	576.7	13.8	10.1	2.8	2.1	0.8	0.0	0.1	0.1	0.5
70-390	0.46	58.11	233.3	1,837.6	2,304.3	55.1	40.3	11.0	8.5	3.1	0.1	0.5	0.5	1.9
70-395	0.43	57.19	212.9	1,676.9	2,102.7	50.3	36.7	10.1	7.7	2.8	0.1	0.5	0.4	1.7
70-400	0.44	9.67	36.8	289.7	363.3	8.7	6.3	1.7	1.3	0.5	0.0	0.1	0.1	0.3
70-405	0.25	7.16	15.5	122.2	153.3	3.7	2.7	0.7	0.6	0.2	0.0	0.0	0.0	0.1
70-410	0.43	5.8	21.6	169.8	212.9	5.1	3.7	1.0	0.8	0.3	0.0	0.0	0.0	0.2
70-415	0.45	120.75	475.2	3,741.9	4,692.3	112.3	82.0	22.5	17.3	6.4	0.1	1.1	1.0	3.8
70-420	0.45	16.99	66.3	521.9	654.5	15.7	11.4	3.1	2.4	0.9	0.0	0.1	0.1	0.5
70-425	0.51	20.63	91.4	719.6	902.4	21.6	15.8	4.3	3.3	1.2	0.0	0.2	0.2	0.7
70-430	0.10	6.19	5.4	42.3	53.0	1.3	0.9	0.3	0.2	0.1	0.0	0.0	0.0	0.0
70-435	0.10	9.16	7.9	62.5	78.4	1.9	1.4	0.4	0.3	0.1	0.0	0.0	0.0	0.1
70-440	0.50	34.48	148.5	1,169.1	1,466.1	35.1	25.6	7.0	5.4	2.0	0.0	0.3	0.3	1.2

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/05 - 08/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Summer Median Event Mean Concentration			8.0	63	79	1.89	1.380	0.378	0.291	0.107	0.002500	0.018	0.016	0.064
Precipitation (meters)	0.315													
70-445	0.45	5.6	21.8	172.0	215.7	5.2	3.8	1.0	0.8	0.3	0.0	0.0	0.0	0.2
70-450	0.45	2.65	10.3	81.4	102.1	2.4	1.8	0.5	0.4	0.1	0.0	0.0	0.0	0.1
70-455	0.00	2.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-460	0.45	2.67	10.4	82.0	102.8	2.5	1.8	0.5	0.4	0.1	0.0	0.0	0.0	0.1
70-465	0.45	2.58	10.1	79.3	99.4	2.4	1.7	0.5	0.4	0.1	0.0	0.0	0.0	0.1
70-470	0.38	8.55	28.5	224.2	281.1	6.7	4.9	1.3	1.0	0.4	0.0	0.1	0.1	0.2
70-475	0.46	229.14	914.3	7,200.5	9,029.2	216.0	157.7	43.2	33.3	12.2	0.3	2.0	1.8	7.3
70-480	0.60	0.31	1.6	12.7	15.9	0.4	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-485	0.45	13.36	52.1	410.4	514.6	12.3	9.0	2.5	1.9	0.7	0.0	0.1	0.1	0.4
70-490	0.47	48.75	198.3	1,562.0	1,958.7	46.9	34.2	9.4	7.2	2.7	0.1	0.4	0.4	1.6
70-495	0.45	7.74	30.2	237.8	298.1	7.1	5.2	1.4	1.1	0.4	0.0	0.1	0.1	0.2
70-500	0.45	0.56	2.2	17.2	21.6	0.5	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-505	0.41	8.12	29.0	228.2	286.1	6.8	5.0	1.4	1.1	0.4	0.0	0.1	0.1	0.2
70-510	0.45	41.82	163.7	1,288.9	1,616.2	38.7	28.2	7.7	6.0	2.2	0.1	0.4	0.3	1.3
70-515	0.47	62.73	255.5	2,012.3	2,523.4	60.4	44.1	12.1	9.3	3.4	0.1	0.6	0.5	2.0
70-520	0.45	6.05	23.6	185.8	233.0	5.6	4.1	1.1	0.9	0.3	0.0	0.1	0.0	0.2
70-525	0.45	6.23	24.3	191.4	240.0	5.7	4.2	1.1	0.9	0.3	0.0	0.1	0.0	0.2
70-530	0.45	1.67	6.5	51.3	64.3	1.5	1.1	0.3	0.2	0.1	0.0	0.0	0.0	0.1
70-535	0.45	30.24	118.2	931.1	1,167.6	27.9	20.4	5.6	4.3	1.6	0.0	0.3	0.2	0.9
70-540	0.21	5.1	9.4	74.3	93.2	2.2	1.6	0.4	0.3	0.1	0.0	0.0	0.0	0.1
70-545	0.45	1.89	7.4	58.1	72.8	1.7	1.3	0.3	0.3	0.1	0.0	0.0	0.0	0.1
70-550	0.26	1.3	2.9	23.0	28.8	0.7	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-555	0.45	1.73	6.7	53.1	66.6	1.6	1.2	0.3	0.2	0.1	0.0	0.0	0.0	0.1
70-560	0.45	3.33	13.0	102.3	128.3	3.1	2.2	0.6	0.5	0.2	0.0	0.0	0.0	0.1
70-565	0.24	16.63	34.7	273.1	342.4	8.2	6.0	1.6	1.3	0.5	0.0	0.1	0.1	0.3
70-570	0.45	1.23	4.8	37.8	47.4	1.1	0.8	0.2	0.2	0.1	0.0	0.0	0.0	0.0
70-575	0.45	15.39	60.0	472.3	592.2	14.2	10.3	2.8	2.2	0.8	0.0	0.1	0.1	0.5
70-580	0.43	119.93	451.0	3,551.4	4,453.4	106.5	77.8	21.3	16.4	6.0	0.1	1.0	0.9	3.6
71-010	0.10	1.12	1.0	7.6	9.6	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71-020	0.45	14.05	54.8	431.6	541.2	12.9	9.5	2.6	2.0	0.7	0.0	0.1	0.1	0.4
71-030	0.45	28.58	112.1	882.7	1,106.9	26.5	19.3	5.3	4.1	1.5	0.0	0.2	0.2	0.9
71-040	0.22	20.93	39.8	313.6	393.2	9.4	6.9	1.9	1.4	0.5	0.0	0.1	0.1	0.3
71-050	0.46	120.42	478.1	3,764.9	4,721.0	112.9	82.5	22.6	17.4	6.4	0.1	1.1	1.0	3.8
71-060	0.45	3.11	12.1	95.5	119.8	2.9	2.1	0.6	0.4	0.2	0.0	0.0	0.0	0.1
71-070	0.00	386.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71-080	0.46	101.79	402.6	3,170.5	3,975.7	95.1	69.4	19.0	14.6	5.4	0.1	0.9	0.8	3.2
71-090	0.45	6.5	25.1	197.7	247.9	5.9	4.3	1.2	0.9	0.3	0.0	0.1	0.1	0.2
71-100	0.10	1.99	1.7	13.6	17.0	0.4	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
72-010	0.18	17.32	26.3	207.0	259.6	6.2	4.5	1.2	1.0	0.4	0.0	0.1	0.1	0.2
72-020	0.40	24.7	84.6	666.2	835.5	20.0	14.6	4.0	3.1	1.1	0.0	0.2	0.2	0.7
72-030	0.10	5.25	4.6	35.8	44.9	1.1	0.8	0.2	0.2	0.1	0.0	0.0	0.0	0.0
72-040	0.42	166.54	601.3	4,735.5	5,938.1	142.1	103.7	28.4	21.9	8.0	0.2	1.3	1.2	4.8
72-050	0.10	5.16	4.5	35.2	44.2	1.1	0.8	0.2	0.2	0.1	0.0	0.0	0.0	0.0
72-060	0.36	113.04	354.4	2,791.2	3,500.1	83.7	61.1	16.7	12.9	4.7	0.1	0.8	0.7	2.8
72-070	0.10	2.21	1.9	15.1	18.9	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
72-080	0.60	4.74	24.7	194.1	243.4	5.8	4.3	1.2	0.9	0.3	0.0	0.1	0.0	0.2
72-090	0.45	68.71	266.3	2,097.4	2,630.1	62.9	45.9	12.6	9.7	3.6	0.1	0.6	0.5	2.1
72-100	0.46	68.32	274.2	2,159.4	2,707.8	64.8	47.3	13.0	10.0	3.7	0.1	0.6	0.5	2.2
72-110	0.10	3.22	2.8	22.0	27.6	0.7	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
72-120	0.45	62.98	245.7	1,934.7	2,426.0	58.0	42.4	11.6	8.9	3.3	0.1	0.5	0.5	2.0
72-130	0.46	58.06	229.7	1,808.6	2,268.0	54.3	39.6	10.9	8.4	3.1	0.1	0.5	0.5	1.8
72-140	0.10	10.19	8.8	69.6	87.2	2.1	1.5	0.4	0.3	0.1	0.0	0.0	0.0	0.1
72-150	0.10	4.76	4.1	32.5	40.7	1.0	0.7	0.2	0.2	0.1	0.0	0.0	0.0	0.0
72-160	0.10	4.55	3.9	31.1	38.9	0.9	0.7	0.2	0.1	0.1	0.0	0.0	0.0	0.0
73-010	0.44	20.76	79.0	622.0	779.9	18.7	13.6	3.7	2.9	1.1	0.0	0.2	0.2	0.6
73-020	0.44	57.47	220.5	1,736.3	2,177.3	52.1	38.0	10.4	8.0	2.9	0.1	0.5	0.4	1.8
73-030	0.10	21.56	18.7	147.2	184.6	4.4	3.2	0.9	0.7	0.2	0.0	0.0	0.0	0.1
74-010	0.48	44.39	184.2	1,450.5	1,818.8	43.5	31.8	8.7	6.7	2.5	0.1	0.4	0.4	1.5
74-020	0.45	4.41	17.2	135.5	169.9	4.1	3.0	0.8	0.6	0.2	0.0	0.0	0.0	0.1
75-005	0.45	12.39	48.3	380.1	476.7	11.4	8.3	2.3	1.8	0.6	0.0	0.1	0.1	0.4
75-010	0.60	3.65	19.0	149.5	187.5	4.5	3.3	0.9	0.7	0.3	0.0	0.0	0.0	0.2
75-020	0.45	1.53	6.0	47.0	58.9	1.4	1.0	0.3	0.2	0.1	0.0	0.0	0.0	0.0
75-030	0.45	8.38	32.7	257.4	322.8	7.7	5.6	1.5	1.2	0.4	0.0	0.1	0.1	0.3
75-040	0.45	14.74	57.5	452.8	567.8	13.6	9.9	2.7	2.1	0.8	0.0	0.1	0.1	0.5
76-010	0.46	907.31	3,648.1	28,728.7	36,024.9	861.9	629.3	172.4	132.7	48.8	1.1	8.1	7.3	29.2
76-020	0.46	88.62	350.0	2,756.6	3,456.7	82.7	60.4	16.5	12.7	4.7	0.1	0.8	0.7	2.8
76-030	0.45	7.55	29.5	231.9	290.8	7.0	5.1	1.4	1.1	0.4	0.0	0.1	0.1	0.2
76-040	0.19	4.67	7.5	59.3	74.4	1.8	1.3	0.4	0.3	0.1	0.0	0.0	0.0	0.1
76-050	0.00	2.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81-010	0.10	31.17	27.0	212.8	266.8	6.4	4.7	1.3	1.0	0.4	0.0	0.1	0.1	0.2
82-010	0.49	23.53	99.2	781.6	980.1	23.4	17.1	4.7	3.6	1.3	0.0	0.2	0.2	0.8
82-020	0.45	73.45	289.6	2,280.4	2,859.6	68.4	50.0	13.7	10.5	3.9	0.1	0.6	0.6	2.3
82-030	0.45	90.04	354.9	2,794.8	3,504.6	83.8	61.2	16.8	12.9	4.7	0.1	0.8	0.7	2.8
82-040	0.46	98.49	396.1	3,119.0	3,911.1	93.6	68.3	18.7	14.4	5.3	0.1	0.9	0.8	3.2
83-010	0.45	6.59	25.7	202.4	253.8	6.1	4.4	1.2	0.9	0.3	0.0	0.1	0.1	0.2
83-015	0.45	0.99	3.9	30.4	38.1	0.9	0.7	0.2	0.1	0.1	0.0	0.0	0.0	0.0
83-020	0.43	85.96	324.0	2,551.3	3,199.2	76.5	55.9	15.3	11.8	4.3	0.1	0.7	0.6	2.6
83-025	0.45	51.23	199.8	1,573.7	1,973.4	47.2	34.5	9.4	7.3	2.7	0.1	0.4	0.4	1.6
83-030	0.60	0.82	4.3	33.6	42.1	1.0	0.7	0.2	0.2	0.1	0.0	0.0	0.0	0.0
83-040	0.10	1.08	0.9	7.4	9.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83-050	0.45	40.4	158.0	1,244.4	1,560.5	37.3	27.3	7.5	5.7	2.1	0.0	0.4	0.3	1.3
83-060	0.45	10.05	39.2	308.7	387.1	9.3	6.8	1.9	1.4	0.5	0.0	0.1	0.1	0.3
83-070	0.10	1.19	1.0	8.1	10.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83-080	0.48	178.63	736.2	5,797.5	7,269.9	173.9	127.0	34.8	26.8	9.8	0.2	1.6	1.5	5.9
83-090	0.41	9.16	32.5	256.2	321.3	7.7	5.6	1.5	1.2	0.4	0.0	0.1	0.1	0.3
84-010	0.47	21.56	87.9	692.2	868.0	20.8	15.2	4.2	3.2	1.2	0.0	0.2	0.2	0.7

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL

2005 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/05 - 08/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Summer Median Event Mean Concentration			8.0	63	79	1.89	1.380	0.378	0.291	0.107	0.002500	0.018	0.016	0.064
Precipitation (meters)	**0.315**													
85-010	0.10	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SUMMER SEASONAL SUM (kg)			**117,092.08**	**922,100.10**	**1,156,284.26**	**27,663.00**	**20,198.38**	**5,532.60**	**4,259.22**	**1,566.11**	**36.59**	**260.53**	**234.18**	**936.74**

2005 FALL POLLUTANT LOADINGS BY OUTFALL

2005 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/05 - 12/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Fall Median Event Mean Concentration			4.0	118	43	2.62	0.892	0.505	0.223	0.066	0.002500	0.015	0.013	0.025
Precipitation (meters)	0.315													
10-010	0.43	113.55	60.7	1,789.6	652.1	39.7	13.5	7.7	3.4	1.0	0.0	0.2	0.2	0.4
10-020	0.45	7.81	4.4	128.4	46.8	2.9	1.0	0.5	0.2	0.1	0.0	0.0	0.0	0.0
10-030	0.10	4.05	0.5	14.8	5.4	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
10-040	0.45	167.42	92.6	2,733.1	996.0	60.7	20.7	11.7	5.2	1.5	0.1	0.3	0.3	0.6
10-050	0.46	114.18	64.4	1,898.7	691.9	42.2	14.4	8.1	3.6	1.1	0.0	0.2	0.2	0.4
10-060	0.60	10.5	7.8	230.1	83.9	5.1	1.7	1.0	0.4	0.1	0.0	0.0	0.0	0.0
10-070	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-080	0.38	30.66	14.5	428.0	156.0	9.5	3.2	1.8	0.8	0.2	0.0	0.1	0.0	0.1
10-090A	0.00	0.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-090B	0.00	1.48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-090C	0.54	12.77	8.6	252.6	92.1	5.6	1.9	1.1	0.5	0.1	0.0	0.0	0.0	0.1
10-090D	0.00	4.68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-100	0.36	1392.1	625.3	18,446.3	6,722.0	409.6	139.4	78.9	34.9	10.3	0.4	2.3	2.1	3.9
10-110	0.47	300.11	173.4	5,114.8	1,863.9	113.6	38.7	21.9	9.7	2.9	0.1	0.7	0.6	1.1
10-120A/B	0.44	372.78	200.9	5,927.4	2,160.0	131.6	44.8	25.4	11.2	3.3	0.1	0.8	0.7	1.3
10-130	0.45	336.46	188.1	5,549.8	2,022.4	123.2	42.0	23.8	10.5	3.1	0.1	0.7	0.6	1.2
10-140a	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-140a,b	0.58	220.65	157.2	4,638.3	1,690.2	103.0	35.1	19.9	8.8	2.6	0.1	0.6	0.5	1.0
10-150	0.47	157.15	91.2	2,691.8	980.9	59.8	20.3	11.5	5.1	1.5	0.1	0.3	0.3	0.6
10-160	0.00	17	0.1	1.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-170	0.50	176.01	109.7	3,235.7	1,179.1	71.8	24.5	13.8	6.1	1.8	0.1	0.4	0.4	0.7
10-180	0.45	284.26	156.8	4,624.3	1,685.1	102.7	35.0	19.8	8.7	2.6	0.1	0.6	0.5	1.0
10-190	0.59	14.58	10.7	315.2	114.9	7.0	2.4	1.3	0.6	0.2	0.0	0.0	0.0	0.1
10-200	0.40	42.44	20.9	615.6	224.3	13.7	4.7	2.6	1.2	0.3	0.0	0.1	0.1	0.1
10-210	0.49	98.32	59.9	1,765.6	643.4	39.2	13.3	7.6	3.3	1.0	0.0	0.2	0.2	0.4
10-220	0.56	18.83	13.0	384.6	140.1	8.5	2.9	1.6	0.7	0.2	0.0	0.0	0.0	0.1
10-230	0.47	235.02	137.6	4,058.4	1,478.9	90.1	30.7	17.4	7.7	2.3	0.1	0.5	0.5	0.9
10-240	0.51	103.83	66.1	1,948.5	710.1	43.3	14.7	8.3	3.7	1.1	0.0	0.2	0.2	0.4
10-250	0.49	242.96	147.1	4,338.9	1,581.1	96.3	32.8	18.6	8.2	2.4	0.1	0.6	0.5	0.9
10-260	0.56	23.77	16.4	483.8	176.3	10.7	3.7	2.1	0.9	0.3	0.0	0.1	0.1	0.1
10-270	0.47	72.45	42.5	1,254.1	457.0	27.8	9.5	5.4	2.4	0.7	0.0	0.2	0.1	0.3
10-280	0.44	55.08	30.3	893.0	325.4	19.8	6.8	3.8	1.7	0.5	0.0	0.1	0.1	0.2
10-290	0.10	6.83	0.8	25.0	9.1	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
10-300	0.36	17.74	7.9	233.7	85.2	5.2	1.8	1.0	0.4	0.1	0.0	0.0	0.0	0.0
10-310	0.47	60.29	35.3	1,040.1	379.0	23.1	7.9	4.5	2.0	0.6	0.0	0.1	0.1	0.2
10-320	0.45	341.99	191.3	5,644.1	2,056.8	125.3	42.7	24.2	10.7	3.2	0.1	0.7	0.6	1.2
10-330	0.35	21.61	9.4	277.5	101.1	6.2	2.1	1.2	0.5	0.2	0.0	0.0	0.0	0.1
10-340	0.45	20.74	11.6	341.9	124.6	7.6	2.6	1.5	0.6	0.2	0.0	0.0	0.0	0.1
10-350	0.60	28.16	20.9	616.1	224.5	13.7	4.7	2.6	1.2	0.3	0.0	0.1	0.1	0.1
10-360	0.59	29.02	21.3	628.3	229.0	14.0	4.7	2.7	1.2	0.4	0.0	0.1	0.1	0.1
10-370	0.59	14.46	10.6	311.4	113.5	6.9	2.4	1.3	0.6	0.2	0.0	0.0	0.0	0.1
10-380	0.45	14.38	7.9	233.9	85.2	5.2	1.8	1.0	0.4	0.1	0.0	0.0	0.0	0.0
10-390	0.49	41.97	25.6	756.0	275.5	16.8	5.7	3.2	1.4	0.4	0.0	0.1	0.1	0.2
10-400A	0.10	1.07	0.1	3.9	1.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-400B	0.47	17.66	10.3	304.2	110.9	6.8	2.3	1.3	0.6	0.2	0.0	0.0	0.0	0.1
10-400C	0.57	50.25	35.2	1,038.6	378.5	23.1	7.9	4.4	2.0	0.6	0.0	0.1	0.1	0.2
10-410A	0.50	46.22	28.5	840.6	306.3	18.7	6.4	3.6	1.6	0.5	0.0	0.1	0.1	0.2
10-410B	0.32	21.29	8.3	246.1	89.7	5.5	1.9	1.1	0.5	0.1	0.0	0.0	0.0	0.1
10-410C	0.53	22.8	14.9	439.6	160.2	9.8	3.3	1.9	0.8	0.2	0.0	0.1	0.0	0.1
10-410D	0.60	27.34	20.3	599.5	218.5	13.3	4.5	2.6	1.1	0.3	0.0	0.1	0.1	0.1
10-410E	0.58	256.04	182.5	5,382.3	1,961.3	119.5	40.7	23.0	10.2	3.0	0.1	0.7	0.6	1.1
10-410F	0.59	37.92	27.6	814.9	296.9	18.1	6.2	3.5	1.5	0.5	0.0	0.1	0.1	0.2
10-420A	0.27	23.05	7.8	229.5	83.6	5.1	1.7	1.0	0.4	0.1	0.0	0.0	0.0	0.0
10-420B	0.00	10.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420C	0.00	7.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420D	0.00	20.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-420E	0.59	127.89	92.9	2,741.7	999.1	60.9	20.7	11.7	5.2	1.5	0.1	0.3	0.3	0.6
10-430A	0.00	8.14	0.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430B	0.53	54.72	36.2	1,068.1	389.2	23.7	8.1	4.6	2.0	0.6	0.0	0.1	0.1	0.2
10-430C	0.48	44.83	26.7	786.7	286.7	17.5	5.9	3.4	1.5	0.4	0.0	0.1	0.1	0.2
10-430D	0.49	85.79	52.2	1,540.7	561.4	34.2	11.6	6.6	2.9	0.9	0.0	0.2	0.2	0.3
10-430E	0.56	86.66	59.8	1,765.3	643.3	39.2	13.3	7.6	3.3	1.0	0.0	0.2	0.2	0.4
10-430F	0.10	377.97	46.8	1,380.8	503.2	30.7	10.4	5.9	2.6	0.8	0.0	0.2	0.2	0.3
10-430G	0.50	125.89	77.3	2,279.2	830.5	50.6	17.2	9.8	4.3	1.3	0.0	0.3	0.3	0.5
10-430H	0.49	33.18	20.2	595.6	217.0	13.2	4.5	2.5	1.1	0.3	0.0	0.1	0.1	0.1
10-430I	0.59	32.61	23.8	701.2	255.5	15.6	5.3	3.0	1.3	0.4	0.0	0.1	0.1	0.1
10-430J	0.43	532.36	286.1	8,439.4	3,075.4	187.4	63.8	36.1	15.9	4.7	0.2	1.1	0.9	1.8
10-430K	0.48	337.06	199.4	5,881.5	2,143.2	130.6	44.5	25.2	11.1	3.3	0.1	0.7	0.7	1.2
10-430L	0.45	84.4	47.1	1,389.8	506.4	30.9	10.5	5.9	2.6	0.8	0.0	0.2	0.2	0.3
10-430M	0.54	75.94	51.0	1,504.7	548.3	33.4	11.4	6.4	2.8	0.8	0.0	0.2	0.2	0.3
10-430N	0.44	26.43	14.5	428.6	156.2	9.5	3.2	1.8	0.8	0.2	0.0	0.1	0.0	0.1
10-430O	0.00	109.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430P	0.00	229.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-430Q	0.10	8.03	1.0	29.3	10.7	0.7	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
10-430R	0.47	150.32	87.0	2,567.1	935.5	57.0	19.4	11.0	4.9	1.4	0.1	0.3	0.3	0.5
10-430S	0.10	5.15	0.6	18.8	6.9	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
10-430T	0.46	262.47	148.6	4,383.0	1,597.2	97.3	33.1	18.8	8.3	2.5	0.1	0.6	0.5	0.9
10-430U	0.47	431.37	251.0	7,404.2	2,698.2	164.4	56.0	31.7	14.0	4.1	0.2	0.9	0.8	1.6
10-430V	0.46	329.11	189.4	5,588.6	2,036.5	124.1	42.2	23.9	10.6	3.1	0.1	0.7	0.6	1.2
10-440A	0.46	23.18	13.2	387.9	141.4	8.6	2.9	1.7	0.7	0.2	0.0	0.0	0.0	0.1
10-440B	0.49	34.23	20.9	616.2	224.6	13.7	4.7	2.6	1.2	0.3	0.0	0.1	0.1	0.1
10-440C/D	0.00	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-440E	0.51	831.25	529.3	15,615.6	5,690.4	346.7	118.0	66.8	29.5	8.7	0.3	2.0	1.7	3.3
10-440F	0.46	538.85	307.1	9,059.4	3,301.3	201.2	68.5	38.8	17.1	5.1	0.2	1.2	1.0	1.9
10-450A	0.00	343.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-450B	0.52	3.41	2.2	64.4	23.5	1.4	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0

2005 FALL POLLUTANT LOADINGS BY OUTFALL

2005 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/05 - 12/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Fall Median Event Mean Concentration			4.0	118	43	2.62	0.892	0.505	0.223	0.066	0.002500	0.015	0.013	0.025
Precipitation (meters)	0.315													
10-450C	0.59	55.64	40.9	1,207.0	439.9	26.8	9.1	5.2	2.3	0.7	0.0	0.2	0.1	0.3
10-450D	0.45	4.62	2.6	75.9	27.7	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
10-450E	0.44	3.2	1.8	51.7	18.8	1.1	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0
10-450F	0.46	158.55	90.2	2,661.0	969.7	59.1	20.1	11.4	5.0	1.5	0.1	0.3	0.3	0.6
10-450G/H	0.48	75.02	44.6	1,316.8	479.9	29.2	10.0	5.6	2.5	0.7	0.0	0.2	0.1	0.3
10-450I	0.49	243.64	148.2	4,372.1	1,593.2	97.1	33.1	18.7	8.3	2.4	0.1	0.6	0.5	0.9
10-450J	0.49	17.16	10.3	304.3	110.9	6.8	2.3	1.3	0.6	0.2	0.0	0.0	0.0	0.1
10-450K	0.58	37.01	26.5	783.2	285.4	17.4	5.9	3.4	1.5	0.4	0.0	0.1	0.1	0.2
10-450L	0.51	213.41	133.5	3,937.5	1,434.9	87.4	29.8	16.9	7.4	2.2	0.1	0.5	0.4	0.8
10-460	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460A	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460B	0.52	7.29	4.7	137.6	50.2	3.1	1.0	0.6	0.3	0.1	0.0	0.0	0.0	0.0
10-460C/D/F	0.00	159.87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460E	0.49	231.41	141.5	4,174.8	1,521.3	92.7	31.6	17.9	7.9	2.3	0.1	0.5	0.5	0.9
10-460F	0.49	14.75	9.0	266.6	97.1	5.9	2.0	1.1	0.5	0.1	0.0	0.0	0.0	0.1
10-460G	0.51	79.66	50.4	1,486.5	541.7	33.0	11.2	6.4	2.8	0.8	0.0	0.2	0.2	0.3
10-460H	0.48	12.35	7.3	216.3	78.8	4.8	1.6	0.9	0.4	0.1	0.0	0.0	0.0	0.0
10-460I	0.00	72.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460J	0.46	5.36	3.1	90.8	33.1	2.0	0.7	0.4	0.2	0.1	0.0	0.0	0.0	0.0
10-460K	0.36	5.48	2.4	72.0	26.2	1.6	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
10-460L	0.46	3.5	2.0	59.3	21.6	1.3	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0
10-460M	0.48	9.55	5.7	167.0	60.8	3.7	1.3	0.7	0.3	0.1	0.0	0.0	0.0	0.0
10-460N	0.45	3.85	2.1	63.3	23.1	1.4	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
10-460O	0.45	4.15	2.3	68.8	25.1	1.5	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
10-460P	0.45	4.34	2.4	71.3	26.0	1.6	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
10-460Q	0.56	19.73	13.8	406.6	148.2	9.0	3.1	1.7	0.8	0.2	0.0	0.1	0.0	0.1
10-460R	0.00	51.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-460S	0.56	233.54	163.2	4,814.3	1,754.4	106.9	36.4	20.6	9.1	2.7	0.1	0.6	0.5	1.0
10-465	0.10	8.56	1.1	31.3	11.4	0.7	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
10-470	0.38	25.6	12.1	356.9	130.1	7.9	2.7	1.5	0.7	0.2	0.0	0.0	0.0	0.1
10-480	0.58	39.66	28.5	840.6	306.3	18.7	6.4	3.6	1.6	0.5	0.0	0.1	0.1	0.2
10-485	0.00	7.27	0.0	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-490	0.43	150.96	81.0	2,390.8	871.2	53.1	18.1	10.2	4.5	1.3	0.1	0.3	0.3	0.5
10-500A	0.26	26.21	8.5	251.3	91.6	5.6	1.9	1.1	0.5	0.1	0.0	0.0	0.0	0.1
10-500B	0.46	8.48	4.8	142.6	52.0	3.2	1.1	0.6	0.3	0.1	0.0	0.0	0.0	0.0
10-500C	0.44	111.36	60.0	1,771.1	645.4	39.3	13.4	7.6	3.3	1.0	0.0	0.2	0.2	0.4
10-500D	0.24	3.83	1.1	33.3	12.1	0.7	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
10-500E	0.53	23.34	15.4	454.0	165.4	10.1	3.4	1.9	0.9	0.3	0.0	0.1	0.1	0.1
10-500F	0.49	12.04	7.4	217.2	79.1	4.8	1.6	0.9	0.4	0.1	0.0	0.0	0.0	0.0
10-500G	0.00	112.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-505	0.10	7.85	1.0	28.7	10.5	0.6	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
10-510	0.51	62.36	39.3	1,158.7	422.2	25.7	8.8	5.0	2.2	0.6	0.0	0.1	0.1	0.2
10-520	0.00	139.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-530	0.45	116.15	64.8	1,912.7	697.0	42.5	14.5	8.2	3.6	1.1	0.0	0.2	0.2	0.4
10-540	0.12	53.9	7.9	233.2	85.0	5.2	1.8	1.0	0.4	0.1	0.0	0.0	0.0	0.0
10-550	0.46	25.83	14.7	434.0	158.1	9.6	3.3	1.9	0.8	0.2	0.0	0.1	0.0	0.1
10-560A/B	0.44	600.63	325.4	9,599.4	3,498.1	213.1	72.6	41.1	18.1	5.4	0.2	1.2	1.1	2.0
10-570A	0.54	14.64	9.9	290.8	106.0	6.5	2.2	1.2	0.5	0.2	0.0	0.0	0.0	0.1
10-570B	0.44	228.18	123.3	3,638.7	1,326.0	80.8	27.5	15.6	6.9	2.0	0.1	0.5	0.4	0.8
10-580	0.45	73.39	40.8	1,203.3	438.5	26.7	9.1	5.1	2.3	0.7	0.0	0.2	0.1	0.3
10-600	0.48	89.24	53.4	1,576.6	574.5	35.0	11.9	6.7	3.0	0.9	0.0	0.2	0.2	0.3
10-610	0.46	25.6	14.5	428.7	156.2	9.5	3.2	1.8	0.8	0.2	0.0	0.1	0.0	0.1
10-620	0.00	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630A	0.10	6.24	0.8	22.8	8.3	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
10-630B	0.45	4.68	2.6	76.9	28.0	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
10-630C	0.48	96.03	57.5	1,694.9	617.6	37.6	12.8	7.3	3.2	0.9	0.0	0.2	0.2	0.4
10-630D	0.45	6.37	3.5	104.7	38.2	2.3	0.8	0.4	0.2	0.1	0.0	0.0	0.0	0.0
10-630E	0.45	8.52	4.7	140.1	51.0	3.1	1.1	0.6	0.3	0.1	0.0	0.0	0.0	0.0
10-630F	0.54	17.56	11.7	346.6	126.3	7.7	2.6	1.5	0.7	0.2	0.0	0.0	0.0	0.1
10-630G	0.45	5.9	3.3	97.0	35.3	2.2	0.7	0.4	0.2	0.1	0.0	0.0	0.0	0.0
10-630H	0.30	25.63	9.6	283.6	103.3	6.3	2.1	1.2	0.5	0.2	0.0	0.0	0.0	0.1
10-630I	0.47	12.48	7.2	212.0	77.3	4.7	1.6	0.9	0.4	0.1	0.0	0.0	0.0	0.0
10-630J	0.55	14.69	10.1	297.1	108.3	6.6	2.2	1.3	0.6	0.2	0.0	0.0	0.0	0.1
10-630K	0.47	95.29	55.8	1,647.5	600.4	36.6	12.5	7.1	3.1	0.9	0.0	0.2	0.2	0.3
10-630L	0.52	100.42	64.8	1,911.3	696.5	42.4	14.4	8.2	3.6	1.1	0.0	0.2	0.2	0.4
10-630M	0.50	11.71	7.2	212.4	77.4	4.7	1.6	0.9	0.4	0.1	0.0	0.0	0.0	0.0
10-630N	0.45	8.45	4.7	138.9	50.6	3.1	1.1	0.6	0.3	0.1	0.0	0.0	0.0	0.0
10-630O	0.36	5.77	2.6	76.7	28.0	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
10-630P/Q	0.00	67.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630R	0.33	83.89	34.7	1,023.5	373.0	22.7	7.7	4.4	1.9	0.6	0.0	0.1	0.1	0.2
10-630S	0.22	37.02	10.0	294.0	107.1	6.5	2.2	1.3	0.6	0.2	0.0	0.0	0.0	0.1
10-630T	0.56	7.72	5.4	158.6	57.8	3.5	1.2	0.7	0.3	0.1	0.0	0.0	0.0	0.0
10-630U	0.52	115.42	74.8	2,205.6	803.7	49.0	16.7	9.4	4.2	1.2	0.0	0.3	0.2	0.5
10-630V	0.11	33.85	4.4	130.6	47.6	2.9	1.0	0.6	0.2	0.1	0.0	0.0	0.0	0.0
10-630W	0.47	23.68	13.9	409.8	149.3	9.1	3.1	1.8	0.8	0.2	0.0	0.1	0.0	0.1
10-630X	0.44	14.78	8.1	238.9	87.0	5.3	1.8	1.0	0.5	0.1	0.0	0.0	0.0	0.1
10-630Y	0.00	112.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-630Z	0.47	45.66	26.6	785.3	286.2	17.4	5.9	3.4	1.5	0.4	0.0	0.1	0.1	0.2
10-640	0.46	258.18	146.2	4,313.6	1,571.9	95.8	32.6	18.5	8.2	2.4	0.1	0.5	0.5	0.9
10-650	0.56	19.53	13.5	397.4	144.8	8.8	3.0	1.7	0.8	0.2	0.0	0.1	0.0	0.1
10-660	0.46	306.37	175.8	5,184.8	1,889.4	115.1	39.2	22.2	9.8	2.9	0.1	0.7	0.6	1.1
10-670	0.45	137.88	76.7	2,263.3	824.8	50.3	17.1	9.7	4.3	1.3	0.0	0.3	0.3	0.5
10-680	0.46	707.95	402.0	11,858.3	4,321.2	263.3	89.6	50.7	22.4	6.6	0.3	1.5	1.3	2.5
10-690	0.50	70.63	43.8	1,290.8	470.4	28.7	9.8	5.5	2.4	0.7	0.0	0.2	0.1	0.3
10-700	0.46	222.07	127.7	3,767.1	1,372.8	83.6	28.5	16.1	7.1	2.1	0.1	0.5	0.4	0.8
10-710	0.33	29.95	12.4	364.5	132.8	8.1	2.8	1.6	0.7	0.2	0.0	0.0	0.0	0.1

2005 FALL POLLUTANT LOADINGS BY OUTFALL

2005 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/05 - 12/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Fall Median Event Mean Concentration			4.0	118	43	2.62	0.892	0.505	0.223	0.066	0.002500	0.015	0.013	0.025
Precipitation (meters)	0.315													
10-720A	0.44	15.77	8.7	255.5	93.1	5.7	1.9	1.1	0.5	0.1	0.0	0.0	0.0	0.1
10-720B	0.48	422.18	251.9	7,430.4	2,707.7	165.0	56.2	31.8	14.0	4.2	0.2	0.9	0.8	1.6
10-720C	0.43	26.35	14.0	413.3	150.6	9.2	3.1	1.8	0.8	0.2	0.0	0.1	0.0	0.1
10-720D	0.46	22.95	12.9	381.7	139.1	8.5	2.9	1.6	0.7	0.2	0.0	0.0	0.0	0.1
10-720E	0.46	18.39	10.4	306.2	111.6	6.8	2.3	1.3	0.6	0.2	0.0	0.0	0.0	0.1
10-720F	0.48	317.75	188.8	5,569.6	2,029.6	123.7	42.1	23.8	10.5	3.1	0.1	0.7	0.6	1.2
10-720G	0.00	13.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-720H	0.45	4.55	2.5	74.8	27.3	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
10-720I	0.45	87.27	48.2	1,421.7	518.1	31.6	10.7	6.1	2.7	0.8	0.0	0.2	0.2	0.3
10-720J	0.36	3.71	1.6	48.4	17.6	1.1	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0
10-720K	0.55	32.76	22.3	657.1	239.5	14.6	5.0	2.8	1.2	0.4	0.0	0.1	0.1	0.1
10-720L	0.45	4.57	2.5	75.1	27.4	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
20-010	0.42	93.99	48.9	1,441.4	525.3	32.0	10.9	6.2	2.7	0.8	0.0	0.2	0.2	0.3
20-020	0.44	15.09	8.2	241.8	88.1	5.4	1.8	1.0	0.5	0.1	0.0	0.0	0.0	0.1
20-030	0.45	7.95	4.4	130.7	47.6	2.9	1.0	0.6	0.2	0.1	0.0	0.0	0.0	0.0
20-040	0.37	6.79	3.1	92.5	33.7	2.1	0.7	0.4	0.2	0.1	0.0	0.0	0.0	0.0
20-050	0.00	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-060	0.45	5.91	3.3	97.2	35.4	2.2	0.7	0.4	0.2	0.1	0.0	0.0	0.0	0.0
20-070	0.44	39.07	21.5	632.8	230.6	14.1	4.8	2.7	1.2	0.4	0.0	0.1	0.1	0.1
20-080	0.45	33.72	18.9	558.5	203.5	12.4	4.2	2.4	1.1	0.3	0.0	0.1	0.1	0.1
20-090	0.55	9.95	6.8	200.9	73.2	4.5	1.5	0.9	0.4	0.1	0.0	0.0	0.0	0.0
20-100	0.10	0.99	0.1	3.6	1.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-110	0.24	216.04	64.2	1,893.5	690.0	42.0	14.3	8.1	3.6	1.1	0.0	0.2	0.2	0.4
20-120	0.47	10.22	5.9	174.5	63.6	3.9	1.3	0.7	0.3	0.1	0.0	0.0	0.0	0.0
20-130	0.45	16.12	9.0	265.0	96.6	5.9	2.0	1.1	0.5	0.1	0.0	0.0	0.0	0.1
20-140	0.44	2.97	1.6	47.9	17.4	1.1	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0
20-150	0.45	14.48	8.1	238.0	86.7	5.3	1.8	1.0	0.4	0.1	0.0	0.0	0.0	0.1
20-160	0.54	3.21	2.1	63.4	23.1	1.4	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
20-170	0.37	4.94	2.3	67.2	24.5	1.5	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
20-180	0.51	5.3	3.3	98.0	35.7	2.2	0.7	0.4	0.2	0.1	0.0	0.0	0.0	0.0
20-190	0.45	1.35	0.8	22.2	8.1	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
20-200	0.45	13.84	7.7	227.5	82.9	5.1	1.7	1.0	0.4	0.1	0.0	0.0	0.0	0.0
20-210A	0.44	92.9	50.5	1,490.8	543.2	33.1	11.3	6.4	2.8	0.8	0.0	0.2	0.2	0.3
20-210B	0.50	620.78	387.9	11,442.3	4,169.7	254.1	86.5	49.0	21.6	6.4	0.2	1.5	1.3	2.4
20-220	0.46	26.38	15.1	444.3	161.9	9.9	3.4	1.9	0.8	0.2	0.0	0.1	0.0	0.1
20-230	0.00	21.46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-240	0.48	30.06	17.9	529.1	192.8	11.7	4.0	2.3	1.0	0.3	0.0	0.1	0.1	0.1
20-250	0.57	6.28	4.4	131.2	47.8	2.9	1.0	0.6	0.2	0.1	0.0	0.0	0.0	0.0
20-260	0.60	3.5	2.6	76.7	28.0	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
20-270	0.48	42.81	25.3	745.5	271.7	16.6	5.6	3.2	1.4	0.4	0.0	0.1	0.1	0.2
20-280	0.54	8.98	6.0	176.3	64.2	3.9	1.3	0.8	0.3	0.1	0.0	0.0	0.0	0.0
20-290	0.00	4.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-010	0.45	49.49	27.5	810.4	295.3	18.0	6.1	3.5	1.5	0.5	0.0	0.1	0.1	0.2
40-010	0.45	719.17	399.1	11,773.0	4,290.2	261.4	89.0	50.4	22.2	6.6	0.2	1.5	1.3	2.5
40-020	0.45	15.36	8.6	252.5	92.0	5.6	1.9	1.1	0.5	0.1	0.0	0.0	0.0	0.1
40-030	0.42	51.02	26.4	778.6	283.7	17.3	5.9	3.3	1.5	0.4	0.0	0.1	0.1	0.2
40-040	0.43	65.39	35.2	1,037.2	378.0	23.0	7.8	4.4	2.0	0.6	0.0	0.1	0.1	0.2
40-050	0.45	10.28	5.7	169.0	61.6	3.8	1.3	0.7	0.3	0.1	0.0	0.0	0.0	0.0
40-060	0.45	3.2	1.8	52.6	19.2	1.2	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0
40-070	0.38	7.98	3.7	110.3	40.2	2.4	0.8	0.5	0.2	0.1	0.0	0.0	0.0	0.0
40-080	0.41	60.51	30.6	902.8	329.0	20.0	6.8	3.9	1.7	0.5	0.0	0.1	0.1	0.2
40-090	0.46	20.65	11.9	350.7	127.8	7.8	2.7	1.5	0.7	0.2	0.0	0.0	0.0	0.1
40-100	0.00	20.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-110	0.44	2.61	1.4	42.3	15.4	0.9	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
40-120	0.44	65.87	35.8	1,054.6	384.3	23.4	8.0	4.5	2.0	0.6	0.0	0.1	0.1	0.2
40-130	0.45	35.01	19.6	577.9	210.6	12.8	4.4	2.5	1.1	0.3	0.0	0.1	0.1	0.1
40-140	0.35	125.46	54.0	1,593.7	580.8	35.4	12.0	6.8	3.0	0.9	0.0	0.2	0.2	0.3
40-150	0.47	24.31	14.3	420.7	153.3	9.3	3.2	1.8	0.8	0.2	0.0	0.1	0.0	0.1
40-160	0.49	30.99	19.0	559.7	203.9	12.4	4.2	2.4	1.1	0.3	0.0	0.1	0.1	0.1
40-170	0.00	194.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-180	0.54	16.8	11.2	330.4	120.4	7.3	2.5	1.4	0.6	0.2	0.0	0.0	0.0	0.1
40-190	0.53	65.53	42.9	1,265.8	461.3	28.1	9.6	5.4	2.4	0.7	0.0	0.2	0.1	0.3
40-200	0.46	24.75	14.2	418.0	152.3	9.3	3.2	1.8	0.8	0.2	0.0	0.1	0.0	0.1
40-210	0.54	17.26	11.6	343.5	125.2	7.6	2.6	1.5	0.6	0.2	0.0	0.0	0.0	0.1
40-220	0.47	100.58	58.2	1,717.7	625.9	38.1	13.0	7.4	3.2	1.0	0.0	0.2	0.2	0.4
40-230	0.44	13.78	7.6	223.9	81.6	5.0	1.7	1.0	0.4	0.1	0.0	0.0	0.0	0.0
40-240	0.00	340.86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-250	0.60	1.15	0.9	25.2	9.2	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
40-260	0.45	3.49	1.9	57.4	20.9	1.3	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0
40-270	0.45	9.59	5.3	157.7	57.4	3.5	1.2	0.7	0.3	0.1	0.0	0.0	0.0	0.0
40-280	0.53	12.76	8.3	245.1	89.3	5.4	1.9	1.0	0.5	0.1	0.0	0.0	0.0	0.1
40-290	0.51	13.73	8.7	256.8	93.6	5.7	1.9	1.1	0.5	0.1	0.0	0.0	0.0	0.1
40-300	0.52	10.38	6.7	197.6	72.0	4.4	1.5	0.8	0.4	0.1	0.0	0.0	0.0	0.0
40-310	0.45	97.86	54.9	1,618.2	589.7	35.9	12.2	6.9	3.1	0.9	0.0	0.2	0.2	0.3
40-320	0.60	9.43	7.0	206.7	75.3	4.6	1.6	0.9	0.4	0.1	0.0	0.0	0.0	0.0
40-330	0.59	15.34	11.3	332.1	121.0	7.4	2.5	1.4	0.6	0.2	0.0	0.0	0.0	0.1
40-340	0.53	35.27	23.3	686.7	250.2	15.2	5.2	2.9	1.3	0.4	0.0	0.1	0.1	0.1
40-350	0.60	8.99	6.7	197.1	71.8	4.4	1.5	0.8	0.4	0.1	0.0	0.0	0.0	0.0
40-360	0.60	8.09	6.0	177.3	64.6	3.9	1.3	0.8	0.3	0.1	0.0	0.0	0.0	0.0
40-370	0.58	12.41	8.9	262.2	95.6	5.8	2.0	1.1	0.5	0.1	0.0	0.0	0.0	0.1
40-380	0.39	24.92	12.1	358.2	130.5	8.0	2.7	1.5	0.7	0.2	0.0	0.0	0.0	0.1
40-390	0.58	5.72	4.1	121.2	44.2	2.7	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
40-400	0.10	1.07	0.1	3.9	1.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41-010	0.38	94.73	44.3	1,306.2	476.0	29.0	9.9	5.6	2.5	0.7	0.0	0.2	0.1	0.3
41-020	0.00	14.89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41-030	0.50	60.47	37.6	1,108.9	404.1	24.6	8.4	4.7	2.1	0.6	0.0	0.1	0.1	0.2

2005 FALL POLLUTANT LOADINGS BY OUTFALL

2005 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/05 - 12/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Fall Median Event Mean Concentration			4.0	118	43	2.62	0.892	0.505	0.223	0.066	0.002500	0.015	0.013	0.025
Precipitation (meters)	0.315													
41-040	0.57	35.59	25.3	745.0	271.5	16.5	5.6	3.2	1.4	0.4	0.0	0.1	0.1	0.2
41-050	0.60	10.48	7.8	229.7	83.7	5.1	1.7	1.0	0.4	0.1	0.0	0.0	0.0	0.0
41-060	0.60	2.95	2.2	64.7	23.6	1.4	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
51-010	0.45	29.63	16.6	488.5	178.0	10.8	3.7	2.1	0.9	0.3	0.0	0.1	0.1	0.1
51-020	0.45	4.55	2.5	74.8	27.3	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
52-010	0.28	45.29	15.5	457.2	166.6	10.2	3.5	2.0	0.9	0.3	0.0	0.1	0.1	0.1
52-020	0.45	6.09	3.4	100.1	36.5	2.2	0.8	0.4	0.2	0.1	0.0	0.0	0.0	0.0
52-030	0.45	7.18	4.0	118.0	43.0	2.6	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
52-040	0.41	4.54	2.3	68.6	25.0	1.5	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
52-050	0.44	15.3	8.2	243.1	88.6	5.4	1.8	1.0	0.5	0.1	0.0	0.0	0.0	0.1
52-060	0.10	3.22	0.4	11.8	4.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
52-070	0.42	86.94	45.6	1,344.0	489.8	29.8	10.2	5.8	2.5	0.8	0.0	0.2	0.2	0.3
52-080	0.24	8.08	2.4	71.4	26.0	1.6	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
52-090	0.45	4.89	2.7	80.4	29.3	1.8	0.6	0.3	0.2	0.0	0.0	0.0	0.0	0.0
52-100A/B	0.27	11.89	3.9	115.8	42.2	2.6	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
52-110	0.45	8.84	4.9	144.2	52.5	3.2	1.1	0.6	0.3	0.1	0.0	0.0	0.0	0.0
52-120	0.45	14.74	8.2	242.3	88.3	5.4	1.8	1.0	0.5	0.1	0.0	0.0	0.0	0.1
52-130	0.31	7.18	2.8	82.6	30.1	1.8	0.6	0.4	0.2	0.0	0.0	0.0	0.0	0.0
53-010	0.45	7.03	3.9	115.6	42.1	2.6	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
53-020	0.28	12.38	4.2	125.0	45.5	2.8	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
53-030	0.44	11.37	6.2	181.5	66.1	4.0	1.4	0.8	0.3	0.1	0.0	0.0	0.0	0.0
53-040	0.45	2.78	1.5	45.7	16.7	1.0	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
53-050	0.45	13.66	7.6	224.6	81.8	5.0	1.7	1.0	0.4	0.1	0.0	0.0	0.0	0.0
53-060	0.45	20.37	11.4	334.9	122.0	7.4	2.5	1.4	0.6	0.2	0.0	0.0	0.0	0.1
53-070	0.45	4.89	2.7	80.4	29.3	1.8	0.6	0.3	0.2	0.0	0.0	0.0	0.0	0.0
53-080	0.39	5.81	2.8	83.7	30.5	1.9	0.6	0.4	0.2	0.0	0.0	0.0	0.0	0.0
53-090	0.46	59.59	33.9	999.6	364.2	22.2	7.6	4.3	1.9	0.6	0.0	0.1	0.1	0.2
53-100	0.00	107	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53-110	0.38	4.59	2.2	64.5	23.5	1.4	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
53-120A/B	0.46	129.79	73.2	2,160.3	787.2	48.0	16.3	9.2	4.1	1.2	0.0	0.3	0.2	0.5
53-130	0.45	5.02	2.8	82.5	30.1	1.8	0.6	0.4	0.2	0.0	0.0	0.0	0.0	0.0
53-140	0.45	6.36	3.5	104.6	38.1	2.3	0.8	0.4	0.2	0.1	0.0	0.0	0.0	0.0
53-150	0.48	90.4	54.2	1,597.8	582.2	35.5	12.1	6.8	3.0	0.9	0.0	0.2	0.2	0.3
53-160	0.47	252.19	147.6	4,355.6	1,587.2	96.7	32.9	18.6	8.2	2.4	0.1	0.6	0.5	0.9
53-170	0.36	6.39	2.9	84.2	30.7	1.9	0.6	0.4	0.2	0.0	0.0	0.0	0.0	0.0
53-180	0.10	8.09	1.0	29.6	10.8	0.7	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
53-190	0.30	11.41	4.2	125.3	45.6	2.8	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
54-010A/B	0.44	84.93	45.8	1,349.9	491.9	30.0	10.2	5.8	2.6	0.8	0.0	0.2	0.2	0.3
54-040A/B	0.49	255.14	156.4	4,613.1	1,681.1	102.4	34.9	19.7	8.7	2.6	0.1	0.6	0.5	1.0
54-050	0.17	9.27	2.0	58.9	21.5	1.3	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0
54-060	0.44	32.13	17.5	515.6	187.9	11.4	3.9	2.2	1.0	0.3	0.0	0.1	0.1	0.1
54-070	0.36	60.8	27.0	796.4	290.2	17.7	6.0	3.4	1.5	0.4	0.0	0.1	0.1	0.2
54-080A/B/C	0.46	414.26	234.5	6,917.4	2,520.7	153.6	52.3	29.6	13.1	3.9	0.1	0.9	0.8	1.5
54-090	0.10	3.55	0.4	13.0	4.7	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
54-100A/B	0.60	114.24	84.3	2,486.1	905.9	55.2	18.8	10.6	4.7	1.4	0.1	0.3	0.3	0.5
54-110	0.45	24.55	13.7	403.6	147.1	9.0	3.1	1.7	0.8	0.2	0.0	0.1	0.0	0.1
54-120	0.46	62.08	35.1	1,036.3	377.6	23.0	7.8	4.4	2.0	0.6	0.0	0.1	0.1	0.2
54-130	0.10	1.07	0.1	3.9	1.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54-140A/B	0.41	113.01	57.1	1,684.1	613.7	37.4	12.7	7.2	3.2	0.9	0.0	0.2	0.2	0.4
54-150	0.45	55.34	30.5	900.3	328.1	20.0	6.8	3.9	1.7	0.5	0.0	0.1	0.1	0.2
54-160	0.60	2.62	1.9	57.4	20.9	1.3	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0
54-170	0.59	8.08	5.9	175.5	64.0	3.9	1.3	0.8	0.3	0.1	0.0	0.0	0.0	0.0
54-180	0.60	2.82	2.1	61.8	22.5	1.4	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
54-190	0.10	2.2	0.3	8.0	2.9	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54-200	0.10	2.13	0.3	7.8	2.8	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54-210	0.10	1.14	0.1	4.2	1.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55-010	0.60	14.98	11.1	328.3	119.7	7.3	2.5	1.4	0.6	0.2	0.0	0.0	0.0	0.1
55-020	0.60	189.58	139.9	4,128.4	1,504.4	91.7	31.2	17.7	7.8	2.3	0.1	0.5	0.5	0.9
56-010	0.60	67.62	50.2	1,482.2	540.1	32.9	11.2	6.3	2.8	0.8	0.0	0.2	0.2	0.3
57-010	0.53	26.1	17.2	508.6	185.4	11.3	3.8	2.2	1.0	0.3	0.0	0.1	0.1	0.1
57-020	0.00	142	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-030	0.45	18.22	10.2	299.5	109.1	6.7	2.3	1.3	0.6	0.2	0.0	0.0	0.0	0.1
57-040	0.35	39.88	17.2	508.4	185.3	11.3	3.8	2.2	1.0	0.3	0.0	0.1	0.1	0.1
57-050	0.45	7.9	4.4	129.9	47.3	2.9	1.0	0.6	0.2	0.1	0.0	0.0	0.0	0.0
57-060	0.46	26.11	15.0	441.1	160.7	9.8	3.3	1.9	0.8	0.2	0.0	0.1	0.0	0.1
57-070	0.45	81.33	45.4	1,340.2	488.4	29.8	10.1	5.7	2.5	0.7	0.0	0.2	0.1	0.3
57-080	0.42	5.54	2.9	85.5	31.2	1.9	0.6	0.4	0.2	0.0	0.0	0.0	0.0	0.0
57-090	0.47	77.77	45.2	1,333.3	485.9	29.6	10.1	5.7	2.5	0.7	0.0	0.2	0.1	0.3
57-100A/B	0.47	313.43	183.4	5,409.1	1,971.1	120.1	40.9	23.1	10.2	3.0	0.1	0.7	0.6	1.1
57-110	0.54	21.6	14.5	426.7	155.5	9.5	3.2	1.8	0.8	0.2	0.0	0.1	0.0	0.1
57-120A/B/C	0.00	65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-130	0.10	1.16	0.1	4.2	1.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-140	0.10	1.55	0.2	5.7	2.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57-150	0.43	35.68	19.1	562.6	205.0	12.5	4.3	2.4	1.1	0.3	0.0	0.1	0.1	0.1
57-160	0.10	1.89	0.2	6.9	2.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
61-010	0.55	2.86	2.0	57.6	21.0	1.3	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0
62-010	0.45	27.84	15.6	459.8	167.5	10.2	3.5	2.0	0.9	0.3	0.0	0.1	0.1	0.1
63-010	0.45	388.79	217.7	6,421.6	2,340.1	142.6	48.5	27.5	12.1	3.6	0.1	0.8	0.7	1.4
63-020	0.00	11.91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64-100	0.45	24.92	13.9	409.3	149.1	9.1	3.1	1.8	0.8	0.2	0.0	0.1	0.0	0.1
64-110	0.45	6.01	3.3	98.8	36.0	2.2	0.7	0.4	0.2	0.1	0.0	0.0	0.0	0.0
64-120	0.45	16.04	8.9	263.7	96.1	5.9	2.0	1.1	0.5	0.1	0.0	0.0	0.0	0.1
64-130	0.45	2.44	1.4	40.1	14.6	0.9	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
65-010	0.00	18.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65-020	0.53	38.46	25.2	743.5	270.9	16.5	5.6	3.2	1.4	0.4	0.0	0.1	0.1	0.2
70-010	0.46	6.23	3.5	104.4	38.0	2.3	0.8	0.4	0.2	0.1	0.0	0.0	0.0	0.0

2005 FALL POLLUTANT LOADINGS BY OUTFALL

2005 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/05 - 12/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Fall Median Event Mean Concentration			4.0	118	43	2.62	0.892	0.505	0.223	0.066	0.002500	0.015	0.013	0.025
Precipitation (meters)	0.315													
70-015	0.45	11.69	6.5	192.2	70.0	4.3	1.5	0.8	0.4	0.1	0.0	0.0	0.0	0.0
70-020	0.45	37.55	20.9	617.3	224.9	13.7	4.7	2.6	1.2	0.3	0.0	0.1	0.1	0.1
70-025	0.00	3.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-030	0.45	13.48	7.5	221.4	80.7	4.9	1.7	0.9	0.4	0.1	0.0	0.0	0.0	0.0
70-035	0.45	4.53	2.5	74.5	27.1	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-040	0.45	2.42	1.3	39.8	14.5	0.9	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
70-045	0.00	0.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-050	0.45	17.41	9.7	286.2	104.3	6.4	2.2	1.2	0.5	0.2	0.0	0.0	0.0	0.1
70-055	0.46	333.43	191.6	5,653.2	2,060.1	125.5	42.7	24.2	10.7	3.2	0.1	0.7	0.6	1.2
70-060	0.45	3.53	2.0	58.0	21.1	1.3	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0
70-065	0.45	1.89	1.1	31.1	11.3	0.7	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-070	0.45	5.8	3.2	95.3	34.7	2.1	0.7	0.4	0.2	0.1	0.0	0.0	0.0	0.0
70-075	0.43	5	2.7	78.8	28.7	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-080	0.46	11.96	6.8	201.8	73.6	4.5	1.5	0.9	0.4	0.1	0.0	0.0	0.0	0.0
70-085	0.45	229.48	127.1	3,749.3	1,366.3	83.2	28.3	16.0	7.1	2.1	0.1	0.5	0.4	0.8
70-090	0.45	18.57	10.3	305.3	111.2	6.8	2.3	1.3	0.6	0.2	0.0	0.0	0.0	0.1
70-095	0.45	9.99	5.6	164.2	59.8	3.6	1.2	0.7	0.3	0.1	0.0	0.0	0.0	0.0
70-100	0.45	9.64	5.4	158.5	57.7	3.5	1.2	0.7	0.3	0.1	0.0	0.0	0.0	0.0
70-105	0.45	1.63	0.9	26.8	9.8	0.6	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-110	0.45	18.13	10.1	298.0	108.6	6.6	2.3	1.3	0.6	0.2	0.0	0.0	0.0	0.1
70-115	0.45	3.71	2.1	61.0	22.2	1.4	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-120	0.45	4.22	2.4	69.4	25.3	1.5	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-125	0.00	5.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-130	0.49	34.29	21.0	618.4	225.4	13.7	4.7	2.6	1.2	0.3	0.0	0.1	0.1	0.1
70-135	0.45	7.46	4.2	122.6	44.7	2.7	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
70-140	0.60	0.78	0.6	17.1	6.2	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
70-145	0.60	9.19	6.8	201.4	73.4	4.5	1.5	0.9	0.4	0.1	0.0	0.0	0.0	0.0
70-150	0.45	4.51	2.5	74.1	27.0	1.6	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-155	0.45	2.05	1.1	33.7	12.3	0.7	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-160	0.45	2.95	1.6	48.5	17.7	1.1	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0
70-165	0.45	27.77	15.5	456.5	166.4	10.1	3.5	2.0	0.9	0.3	0.0	0.1	0.1	0.1
70-170	0.45	23.74	13.2	390.3	142.2	8.7	3.0	1.7	0.7	0.2	0.0	0.0	0.0	0.1
70-175	0.46	30.89	17.5	516.0	188.0	11.5	3.9	2.2	1.0	0.3	0.0	0.1	0.1	0.1
70-180	0.45	1.14	0.6	18.7	6.8	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
70-185	0.45	1.53	0.9	25.2	9.2	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
70-190	0.17	15.04	3.2	94.6	34.5	2.1	0.7	0.4	0.2	0.1	0.0	0.0	0.0	0.0
70-195	0.45	46.02	25.8	760.7	277.2	16.9	5.8	3.3	1.4	0.4	0.0	0.1	0.1	0.2
70-200	0.45	31.52	17.6	518.2	188.8	11.5	3.9	2.2	1.0	0.3	0.0	0.1	0.1	0.1
70-205	0.45	1.39	0.8	22.9	8.3	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
70-210	0.45	3.58	2.0	58.9	21.4	1.3	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-215	0.45	5.93	3.3	97.5	35.5	2.2	0.7	0.4	0.2	0.1	0.0	0.0	0.0	0.0
70-220	0.45	4.54	2.5	74.6	27.2	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-225	0.45	4.99	2.8	82.0	29.9	1.8	0.6	0.4	0.2	0.0	0.0	0.0	0.0	0.0
70-230	0.45	4.72	2.6	77.6	28.3	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-235	0.45	5.04	2.8	82.9	30.2	1.8	0.6	0.4	0.2	0.0	0.0	0.0	0.0	0.0
70-240	0.45	4.52	2.5	74.3	27.1	1.6	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-245	0.44	9.98	5.4	160.0	58.3	3.6	1.2	0.7	0.3	0.1	0.0	0.0	0.0	0.0
70-250	0.48	41.27	24.7	727.2	265.0	16.1	5.5	3.1	1.4	0.4	0.0	0.1	0.1	0.2
70-255	0.45	45.37	25.3	746.1	271.9	16.6	5.6	3.2	1.4	0.4	0.0	0.1	0.1	0.2
70-260	0.46	24.9	14.1	416.4	151.7	9.2	3.1	1.8	0.8	0.2	0.0	0.1	0.0	0.1
70-265A/B	0.00	183.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-270	0.45	4.66	2.6	76.6	27.9	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-275	0.45	4.28	2.4	70.4	25.6	1.6	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-280	0.45	9.39	5.2	154.6	56.3	3.4	1.2	0.7	0.3	0.1	0.0	0.0	0.0	0.0
70-285	0.45	19.03	10.6	312.5	113.9	6.9	2.4	1.3	0.6	0.2	0.0	0.0	0.0	0.1
70-290	0.45	2.37	1.3	38.6	14.1	0.9	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
70-295	0.45	7.18	4.0	118.0	43.0	2.6	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
70-300	0.10	0.4	0.0	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-305	0.45	12.68	7.0	206.6	75.3	4.6	1.6	0.9	0.4	0.1	0.0	0.0	0.0	0.0
70-310	0.00	5.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-315	0.30	5.79	2.2	63.5	23.1	1.4	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-320	0.44	2.32	1.3	37.2	13.6	0.8	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
70-325	0.00	2.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-330	0.47	279.41	163.0	4,808.1	1,752.1	106.8	36.3	20.6	9.1	2.7	0.1	0.6	0.5	1.0
70-335	0.45	1.99	1.1	32.7	11.9	0.7	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-340	0.39	22.25	10.8	319.8	116.5	7.1	2.4	1.4	0.6	0.2	0.0	0.0	0.0	0.1
70-345	0.45	3.81	2.1	62.6	22.8	1.4	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-350	0.49	314.4	192.4	5,675.2	2,068.1	126.0	42.9	24.3	10.7	3.2	0.1	0.7	0.6	1.2
70-355	0.45	1.29	0.7	21.2	7.7	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
70-360	0.45	131.96	74.3	2,191.0	798.4	48.6	16.6	9.4	4.1	1.2	0.0	0.3	0.2	0.5
70-365	0.45	6.7	3.7	110.1	40.1	2.4	0.8	0.5	0.2	0.1	0.0	0.0	0.0	0.0
70-370	0.44	3.75	2.1	60.7	22.1	1.3	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-375	0.47	7.1	4.2	122.6	44.7	2.7	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
70-380	0.45	14.4	8.0	236.7	86.3	5.3	1.8	1.0	0.4	0.1	0.0	0.0	0.0	0.1
70-385	0.45	14.97	8.3	246.1	89.7	5.5	1.9	1.1	0.5	0.1	0.0	0.0	0.0	0.1
70-390	0.46	58.11	33.3	983.4	358.3	21.8	7.4	4.2	1.9	0.6	0.0	0.1	0.1	0.2
70-395	0.43	57.19	30.4	897.4	327.0	19.9	6.8	3.8	1.7	0.5	0.0	0.1	0.1	0.2
70-400	0.44	9.67	5.3	155.0	56.5	3.4	1.2	0.7	0.3	0.1	0.0	0.0	0.0	0.0
70-405	0.25	7.16	2.2	65.4	23.8	1.5	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
70-410	0.43	5.8	3.1	90.9	33.1	2.0	0.7	0.4	0.2	0.1	0.0	0.0	0.0	0.0
70-415	0.45	120.75	67.9	2,002.5	729.7	44.5	15.1	8.6	3.8	1.1	0.0	0.3	0.2	0.4
70-420	0.45	16.99	9.5	279.3	101.8	6.2	2.1	1.2	0.5	0.2	0.0	0.0	0.0	0.1
70-425	0.51	20.63	13.1	385.1	140.3	8.6	2.9	1.6	0.7	0.2	0.0	0.0	0.0	0.1
70-430	0.10	6.19	0.8	22.6	8.2	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
70-435	0.10	9.16	1.1	33.5	12.2	0.7	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-440	0.50	34.48	21.2	625.7	228.0	13.9	4.7	2.7	1.2	0.3	0.0	0.1	0.1	0.1

2005 FALL POLLUTANT LOADINGS BY OUTFALL

2005 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/05 - 12/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Fall Median Event Mean Concentration			4.0	118	43	2.62	0.892	0.505	0.223	0.066	0.002500	0.015	0.013	0.025
Precipitation (meters)	0.315													
70-445	0.45	5.6	3.1	92.1	33.5	2.0	0.7	0.4	0.2	0.1	0.0	0.0	0.0	0.0
70-450	0.45	2.65	1.5	43.6	15.9	1.0	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
70-455	0.00	2.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-460	0.45	2.67	1.5	43.9	16.0	1.0	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
70-465	0.45	2.58	1.4	42.4	15.5	0.9	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
70-470	0.38	8.55	4.1	120.0	43.7	2.7	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
70-475	0.46	229.14	130.6	3,853.3	1,404.2	85.6	29.1	16.5	7.3	2.2	0.1	0.5	0.4	0.8
70-480	0.60	0.31	0.2	6.8	2.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-485	0.45	13.36	7.4	219.6	80.0	4.9	1.7	0.9	0.4	0.1	0.0	0.0	0.0	0.0
70-490	0.47	48.75	28.3	835.9	304.6	18.6	6.3	3.6	1.6	0.5	0.0	0.1	0.1	0.2
70-495	0.45	7.74	4.3	127.2	46.4	2.8	1.0	0.5	0.2	0.1	0.0	0.0	0.0	0.0
70-500	0.45	0.56	0.3	9.2	3.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-505	0.41	8.12	4.1	122.1	44.5	2.7	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
70-510	0.45	41.82	23.4	689.7	251.3	15.3	5.2	3.0	1.3	0.4	0.0	0.1	0.1	0.1
70-515	0.47	62.73	36.5	1,076.9	392.4	23.9	8.1	4.6	2.0	0.6	0.0	0.1	0.1	0.2
70-520	0.45	6.05	3.4	99.5	36.2	2.2	0.8	0.4	0.2	0.1	0.0	0.0	0.0	0.0
70-525	0.45	6.23	3.5	102.4	37.3	2.3	0.8	0.4	0.2	0.1	0.0	0.0	0.0	0.0
70-530	0.45	1.67	0.9	27.5	10.0	0.6	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-535	0.45	30.24	16.9	498.3	181.6	11.1	3.8	2.1	0.9	0.3	0.0	0.1	0.1	0.1
70-540	0.21	5.1	1.3	39.8	14.5	0.9	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
70-545	0.45	1.89	1.1	31.1	11.3	0.7	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-550	0.26	1.3	0.4	12.3	4.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
70-555	0.45	1.73	1.0	28.4	10.4	0.6	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
70-560	0.45	3.33	1.9	54.7	19.9	1.2	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0
70-565	0.24	16.63	5.0	146.1	53.3	3.2	1.1	0.6	0.3	0.1	0.0	0.0	0.0	0.0
70-570	0.45	1.23	0.7	20.2	7.4	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
70-575	0.45	15.39	8.6	252.7	92.1	5.6	1.9	1.1	0.5	0.1	0.0	0.0	0.0	0.1
70-580	0.43	119.93	64.4	1,900.5	692.6	42.2	14.4	8.1	3.6	1.1	0.0	0.2	0.2	0.4
71-010	0.10	1.12	0.1	4.1	1.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71-020	0.45	14.05	7.8	231.0	84.2	5.1	1.7	1.0	0.4	0.1	0.0	0.0	0.0	0.0
71-030	0.45	28.58	16.0	472.4	172.1	10.5	3.6	2.0	0.9	0.3	0.0	0.1	0.1	0.1
71-040	0.22	20.93	5.7	167.8	61.2	3.7	1.3	0.7	0.3	0.1	0.0	0.0	0.0	0.0
71-050	0.46	120.42	68.3	2,014.8	734.2	44.7	15.2	8.6	3.8	1.1	0.0	0.3	0.2	0.4
71-060	0.45	3.11	1.7	51.1	18.6	1.1	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0
71-070	0.00	386.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71-080	0.46	101.79	57.5	1,696.7	618.3	37.7	12.8	7.3	3.2	0.9	0.0	0.2	0.2	0.4
71-090	0.45	6.5	3.6	105.8	38.6	2.3	0.8	0.5	0.2	0.1	0.0	0.0	0.0	0.0
71-100	0.10	1.99	0.2	7.3	2.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72-010	0.18	17.32	3.8	110.8	40.4	2.5	0.8	0.5	0.2	0.1	0.0	0.0	0.0	0.0
72-020	0.40	24.7	12.1	356.5	129.9	7.9	2.7	1.5	0.7	0.2	0.0	0.0	0.0	0.1
72-030	0.10	5.25	0.7	19.2	7.0	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
72-040	0.42	166.54	85.9	2,534.2	923.5	56.3	19.2	10.8	4.8	1.4	0.1	0.3	0.3	0.5
72-050	0.10	5.16	0.6	18.9	6.9	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
72-060	0.36	113.04	50.6	1,493.7	544.3	33.2	11.3	6.4	2.8	0.8	0.0	0.2	0.2	0.3
72-070	0.10	2.21	0.3	8.1	2.9	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72-080	0.60	4.74	3.5	103.9	37.9	2.3	0.8	0.4	0.2	0.1	0.0	0.0	0.0	0.0
72-090	0.45	68.71	38.0	1,122.4	409.0	24.9	8.5	4.8	2.1	0.6	0.0	0.1	0.1	0.2
72-100	0.46	68.32	39.2	1,155.6	421.1	25.7	8.7	4.9	2.2	0.6	0.0	0.1	0.1	0.2
72-110	0.10	3.22	0.4	11.8	4.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
72-120	0.45	62.98	35.1	1,035.3	377.3	23.0	7.8	4.4	2.0	0.6	0.0	0.1	0.1	0.2
72-130	0.46	58.06	32.8	967.9	352.7	21.5	7.3	4.1	1.8	0.5	0.0	0.1	0.1	0.2
72-140	0.10	10.19	1.3	37.2	13.6	0.8	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
72-150	0.10	4.76	0.6	17.4	6.3	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
72-160	0.10	4.55	0.6	16.6	6.1	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
73-010	0.44	20.76	11.3	332.8	121.3	7.4	2.5	1.4	0.6	0.2	0.0	0.0	0.0	0.1
73-020	0.44	57.47	31.5	929.2	338.6	20.6	7.0	4.0	1.8	0.5	0.0	0.1	0.1	0.2
73-030	0.10	21.56	2.7	78.8	28.7	1.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0
74-010	0.48	44.39	26.3	776.2	282.9	17.2	5.9	3.3	1.5	0.4	0.0	0.1	0.1	0.2
74-020	0.45	4.41	2.5	72.5	26.4	1.6	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0
75-005	0.45	12.39	6.9	203.4	74.1	4.5	1.5	0.9	0.4	0.1	0.0	0.0	0.0	0.0
75-010	0.60	3.65	2.7	80.0	29.2	1.8	0.6	0.3	0.2	0.0	0.0	0.0	0.0	0.0
75-020	0.45	1.53	0.9	25.2	9.2	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
75-030	0.45	8.38	4.7	137.8	50.2	3.1	1.0	0.6	0.3	0.1	0.0	0.0	0.0	0.0
75-040	0.45	14.74	8.2	242.3	88.3	5.4	1.8	1.0	0.5	0.1	0.0	0.0	0.0	0.1
76-010	0.46	907.31	521.2	15,374.1	5,602.4	341.4	116.2	65.8	29.1	8.6	0.3	2.0	1.7	3.3
76-020	0.46	88.62	50.0	1,475.2	537.6	32.8	11.2	6.3	2.8	0.8	0.0	0.2	0.2	0.3
76-030	0.45	7.55	4.2	124.1	45.2	2.8	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
76-040	0.19	4.67	1.1	31.8	11.6	0.7	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
76-050	0.00	2.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81-010	0.10	31.17	3.9	113.9	41.5	2.5	0.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0
82-010	0.49	23.53	14.2	418.3	152.4	9.3	3.2	1.8	0.8	0.2	0.0	0.1	0.0	0.1
82-020	0.45	73.45	41.4	1,220.4	444.7	27.1	9.2	5.2	2.3	0.7	0.0	0.2	0.1	0.3
82-030	0.45	90.04	50.7	1,495.6	545.0	33.2	11.3	6.4	2.8	0.8	0.0	0.2	0.2	0.3
82-040	0.46	98.49	56.6	1,669.1	608.2	37.1	12.6	7.1	3.2	0.9	0.0	0.2	0.2	0.4
83-010	0.45	6.59	3.7	108.3	39.5	2.4	0.8	0.5	0.2	0.1	0.0	0.0	0.0	0.0
83-015	0.45	0.99	0.6	16.3	5.9	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
83-020	0.43	85.96	46.3	1,365.3	497.5	30.3	10.3	5.8	2.6	0.8	0.0	0.2	0.2	0.3
83-025	0.45	51.23	28.5	842.2	306.9	18.7	6.4	3.6	1.6	0.5	0.0	0.1	0.1	0.2
83-030	0.60	0.82	0.6	18.0	6.5	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
83-040	0.10	1.08	0.1	3.9	1.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83-050	0.45	40.4	22.6	666.0	242.7	14.8	5.0	2.9	1.3	0.4	0.0	0.1	0.1	0.1
83-060	0.45	10.05	5.6	165.2	60.2	3.7	1.2	0.7	0.3	0.1	0.0	0.0	0.0	0.0
83-070	0.10	1.19	0.1	4.3	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83-080	0.48	178.63	105.2	3,102.5	1,130.6	68.9	23.5	13.3	5.9	1.7	0.1	0.4	0.3	0.7
83-090	0.41	9.16	4.6	137.1	50.0	3.0	1.0	0.6	0.3	0.1	0.0	0.0	0.0	0.0
84-010	0.47	21.56	12.6	370.4	135.0	8.2	2.8	1.6	0.7	0.2	0.0	0.0	0.0	0.1

2005 FALL POLLUTANT LOADINGS BY OUTFALL

2005 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/05 - 12/31/05)

OUTFALL	RUNOFF COEFF.	ACRES	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Fall Median Event Mean Concentration			4.0	118	43	2.62	0.892	0.505	0.223	0.066	0.002500	0.015	0.013	0.025
Precipitation (meters)	**0.315**													
85-010	0.10	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FALL SEASONAL SUM (kg)			**16,727.44**	**493,459.47**	**179,819.97**	**10,956.47**	**3,730.22**	**2,111.84**	**932.55**	**276.00**	**10.45**	**62.73**	**55.20**	**104.55**

Comparision of Seasonal-based Loadings and Annual-based Outfall Loadings

Season	Precipitation meters	Precipitation inches	BOD mg\l	TSS mg\l	TDS mg\l	TKN mg\l	NH3-N mg\l	NO2-NO3 mg\l	TP mg\l	TDP mg\l	Cd mg\l	Cu mg\l	Pb mg\l	Zn mg\l
Winter/snowmelt Median Event Mean Concentration			23.0	200	1820	7.78	7.420	0.914	1.010	0.417	0.002500	0.050	0.035	0.226
Precipitation	**0.090**	**3.54**												
Winter/snowmelt Season Sum (kilograms)			96,183	836,372	7,610,985	32,535	31,029	3,822	4,224	1,744	10	208	146	945
Spring Median Event Mean Concentration			11.0	90	89	2.48	1.510	0.274	0.421	0.111	0.002500	0.015	0.023	0.117
Precipitation	**0.129**	**5.08**												
Spring Season Sum (kilograms)			65,934	539,460	533,466	14,865	9,051	1,642	2,523	665	15	90	135	701
Summer Median Event Mean Concentration			8.0	63	79	1.89	1.380	0.378	0.291	0.107	0.002500	0.018	0.016	0.064
Precipitation	**0.315**	**12.4**												
Summer Season Sum (kilograms)			117,092	922,100	1,156,284	27,663	20,198	5,533	4,259	1,566	37	261	234	937
Fall Median Event Mean Concentration			4.0	118	43	2.62	0.892	0.505	0.223	0.066	0.002500	0.015	0.013	0.025
Precipitation	**0.315**	**12.39**												
Fall Season Sum (kilograms)			16,727	493,459	179,820	10,956	3,730	2,112	933	276	10	63	55	105
Summation of Seasan Totals (kilograms)	**0.849**	**33.41**	295,936	2,791,391	9,480,555	86,019	64,009	13,109	11,939	4,251	72	621	570	2,688
Mean Flow Weighted Mean Concentration - all 2005 sites			9	108	252	3.4800	1.7400	0.4480	0.3540	0.1230	0.0025	0.0193	0.0409	0.0860
Precipitation	**0.849**	**33.41 inches**												
ANNUAL SUMMATION (kilograms)			355,040	4,260,479	9,941,117	137,282	68,641	17,673	13,965	4,852	99	761	1,613	3,393
ANNUAL POLLUTANT LOADINGS BY RECEIVING WATER (kilograms)			392,773	4,713,274	14,597,750	151,872	75,936	19,551	15,449	5,368	109	842	1,785	3,753

CITY OF MINNEAPOLIS SECTION

STORMWATER MANAGEMENT SUMMARY

- ORDINANCE: On November 24, 1999 the Minneapolis City Council amended Title 3 of the Minneapolis Code of Ordinances relating to Air Pollution and Environmental Protection by adding Chapter 54 entitled "Stormwater Management". Chapter 54 establishes requirements for land disturbing activities on sites greater than one (1) acre; including phased or connected actions and for existing storm water devices.
- PLAN REVIEW: Stormwater Management plans are required for all construction projects greater than 1 acre in size. These plans are reviewed through the "Public Works Site Plan Review" process.
- REGISTRATION: Stormwater devices will be registered with the City of Minneapolis Department of Regulatory Services, with an annual permit being required for each Stormwater device registered.
- GOALS: The Minneapolis Storm Water Ordinance specifies that stormwater management standards be set according to the receiving water body. These standards include but are not limited to:
  - Reductions of suspended solids for Mississippi River discharges.
  - Controlled rate of runoff for discharges to streams, areas prone to flooding and areas with infrastructure limitations.
  - A reduction in nutrients for storm water discharging to lakes and wetlands.
- STORMWATER "BUY OUT": This option is only reserved for those sites that can demonstrate they do not have sufficient space for stormwater treatment structures. Therefore, with approval of the City Engineer the ordinance allows developers to contribute to the construction of a regional storm water facility in lieu of on-site treatment. The fee for contribution to a regional facility in lieu of onsite treatment is established at $15,000 for January 1 to December 31, 2001. Final Plan approval is conditional on payment received.
- For the complete text of the ***"Minneapolis Stormwater Ordinance"***, requirements and related information see the Minneapolis Public Works Engineering Services web sight @ http://www.ci.minneapolis.mn.us/citywork/public-works/eng-design

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CITY OF MINNEAPOLIS SECTION
STORMWATER MANAGEMENT SUMMARY

Load Reduction Requirements

Receiving Waters	Total Discharge Requirements
All receiving waters	70% removal of total suspended solids
Brownie Lake	10% phosphorus load reduction
Cedar Lake	40% phosphorus load reduction
Lake of the Isles	20% phosphorus load reduction
Lake Calhoun	30% phosphorus load reduction
Lake Harriet	20% phosphorus load reduction
Powderhorn Lake	30% phosphorus load reduction
Lake Hiawatha	42% phosphorus load reduction
Lake Nokomis	25% phosphorus load reduction
Loring Park Pond	0% phosphorus load increase
Webber Pond	0% phosphorus load increase
Wirth Lake*	30% phosphorus load reduction
Spring Lake	30% phosphorus load reduction
Crystal Lake**	30% phosphorus load reduction
Diamond Lake	30% phosphorus load reduction
Grass Lake	30% phosphorus load reduction
Birch Pond	0% phosphorus load increase
Ryan Lake	30% phosphorus load reduction
Other wetlands	30% phosphorus load reduction
Mississippi River	70% removal of total suspended solids
Minneapolis streams	No increase in rate of runoff from site

*Wirth Lake is not within the City limits of Minneapolis.
**Crystal Lake is in Robbinsdale but receives run-off from Minneapolis.

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Impacts of Erosion

Each year 80 million tons of sediment from construction sites is deposited into lakes, streams and rivers. On an acre for acre usage, construction sites export sediment at 20 to 1,000 times the rate of other land uses.[1]

Excavating and clearing vegetation at the construction site increases the volume and velocity of the runoff and erosion. Attached to the sediment are fertilizers, pesticides, heavy metals, and oil and grease. Sediment suspended in runoff blocks sunlight needed by aquatic plants, reduces survival rates for fish eggs, interferes with fish breeding habits, and clogs and damages fish gills.[2] Phosphorus and nitrogen in fertilizer can stimulate overgrowth of aquatic plants resulting in the depletion of dissolved oxygen[3] and fish kills. Pesticides, heavy metals, and oil and grease not only accumulate in the bottom of lakes, streams, and rivers but also in plants and other aquatic organisms.[4] Sediment also can build up in storm sewers, catch basins, and other storm drainage devices which will then require additional maintenance.[5]

Surface water runoff from vegetated areas generally does not exceed 10 to 20 percent of the rainfall. Without vegetation, surface water runoff may be as high as 60 to 70 percent.[6] Once erosion has occurred; it is extremely difficult to remove the suspended soil in the runoff. Stopping erosion before it happens is essential.

Simple and easy to install and maintain erosion control and sediment control devices can be found at http://www.metrocouncil.org/environment/Watershed/bmp/manual.htm or call (612) 673-2406 for a copy of the manual or for additional erosion control and sediment control products. If you want more information or have questions, call (612) 673-2406.

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1. *Environmental Assessment for Proposed Effluent Guidelines and Standards for the Construction and Development Category.* United States Environmental Protection Agency. June 2002. Page 2-2. http://www.epa.gov/guide/construction/envir/C&D_Envir_Assessmt_proposed.pdf

2. *Construction Site Soil Erosion and Sediment Control.* Illinois Environmental Protection Agency. March 1999.

3. *What's Your WQ-IQ?*. Larimer County Engineering Department. July 2002. http://www.co.larimer.co.us/engineering/NPDES/july2002web.pdf

4. *Environmental Assessment for Proposed Effluent Guidelines and Standards for the Construction and Development Category.* United States Environmental Protection Agency. June 2002. Page 2-11 and 2-13. http://www.epa.gov/guide/construction/envir/C&D_Envir_Assessmt_proposed.pdf

5. *Construction Site Soil Erosion and Sediment Control.* Illinois Environmental Protection Agency. March 1999.

6. *Using Vegetation for Erosion Control on Construction Sites.* Oklahoma Cooperative Extension Services, Division of Agriculture Sciences and Natural Resources, Oklahoma State University. Page1514/2. http://www.agweb.okstate.edu/pearl/wqs/f-1514.pdf

CITY OF MINNEAPOLIS SECTION

EROSION CONTROL SUMMARY

- ORDINANCE: On May 16, 1996 the Minneapolis City Council amended Title 3 of the Minneapolis Code of Ordinances relating to Air Pollution and Environmental Protection by adding Chapter 52 entitled "Erosion and Sediment Control for Land Disturbance Activities. This Ordinance regulates **everyone** who disturbs topsoil and is designed to insure that soil does not leave the excavation site or enter any storm drain system on either private property or the public right of way.
- REQUIREMENTS: All sites disturbing topsoil are subject to erosion control compliance under the ordinance. Sites disturbing more than five cubic yards or 500 square feet of topsoil including utility excavations and any residential or commercial demolition projects need an erosion control permit prior to commencement of work. Demolition and construction sites greater 5000 square feet require an approved erosion control plan prior to a permit being issued for the site.
- REVIEW: Erosion control plans are required and for all projects going through the City of Minneapolis' Site Plan review Process. Construction or Demolition Sites over 5000 square feet not involved in this process are reviewed and approved by Engineering Services.
- ENFORCEMENT: Ongoing site inspections are by done by Public Works and Regulatory Inspectors. Violation of the Ordinance is a Misdemeanor, which holds a maximum penalty of $700 and/or ninety days in jail. Inspectors finding sites in violation of the ordinance may issue a warning notice, citation or a "Stop Work Order" to the permitee. Furthermore failure of the permittee to comply with the ordinance will constitute a violation pursuant to Section 52.300, and will be considered a nuisance pursuant to Laws of Minnesota for 1994, Chapter 587, Article 9, Section 4. The issuing authority may cancel the permit and proceed with the necessary restoration of the site at the expense of the owner.
- For the complete text of the "*Minneapolis Erosion Control Ordinance*", fee schedule and related information see the Minneapolis Public Works Engineering Services web sight @ http://www.ci.minneapolis.mn.us/citywork/public-works/eng-design

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52.100. Erosion and Sediment Control Plan. Land disturbance activities which are in excess of either five thousand (5,000) square feet or five hundred (500) cubic yards of earth moved require an erosion and sedimentation control plan approved by the City Engineer. These plans shall be drawn to an appropriate scale and shall include sufficient information to evaluate the environmental characteristics of the affected areas, the potential impacts of the proposed grading on water resources, and measures proposed to minimize soil erosion and off-site sedimentation. The owner/developer shall perform all clearing, grading, drainage, construction, and development in strict accordance with the approved plan. In addition, the following information shall be included in any plan:

1. An indication of the scale used.
2. The name, address and telephone number of the developer, permit holder or responsible party of the property where the land disturbing activity is proposed.
3. A signed statement on the plan by the owner, developer, and contractor that all clearing, grading, construction, or development will be done pursuant to the plan.
4. Suitable contours for the existing and proposed topography.
5. The proposed grading or land disturbance activity including and specific limits of disturbance.
6. Clear and definite delineation of any areas of vegetation or trees to be saved.
7. Construction entrance, including details and location.
8. Standard Minneapolis Erosion Control Notes[1]
9. Existing and proposed storm drainage system.
10. Erosion and sediment control provisions to minimize on-site erosion and prevent off-site sedimentation, including provisions to preserve topsoil and limit disturbance.
11. Design details for both temporary and permanent erosion control structures including inlet protection.
12. Construction of perimeter erosion control devices where need to prevent sediment from leaving the site.
13. Details of temporary and permanent stabilization measures to be implemented following initial soil disturbance or re-disturbance. This stabilization shall be completed within fourteen (14) days of disturbance.
14. Specifications for implementation and maintenance of final erosion control structures.
15. Removal of temporary erosion control devices after site has been stabilized.
16. The City Engineer may require any additional information or data deemed appropriate and/or may impose such conditions thereto as may be deemed necessary to ensure compliance with the provisions of this chapter, the Manual of Standards, or the preservation of public health and safety.

The applicant may propose the use of any erosion and sediment control techniques in a Final Plan, provided such techniques are effective and approved by Minneapolis Public Works Engineering Services

1 Dated August 2, 2005

MINNEAPOLIS STANDARD EROSION CONTROL NOTES

1) CONTRACTOR MUST NOTIFY CITY OF MINNEAPOLIS PUBLIC WORKS ENGINEERING SERVICES (612-673-2258) 48 HOURS PRIOR TO ANY LAND DISTURBANCES. FAILURE TO DO SO MAY RESULT IN THE REVOCATION OF PERMIT AND A STOP WORK ORDER BEING ISSUED.
2) Install perimeter erosion control at the locations shown on the plans prior to beginning construction. (Hay bales are not an acceptable perimeter control)
3) Before beginning construction, install a TEMPORARY ROCK CONSTRUCTION ENTRANCE at each point where vehicles exit the construction site. Use 2 inch or greater diameter rock in a layer at least 6 inches thick across the entire width of the entrance. Extend the rock entrance at least 50 feet into the construction zone. Use a geo-textile fabric beneath the aggregate in order to prevent migration of soil into the rock from below
4) Remove all soils and sediments tracked or otherwise deposited onto public and private pavement areas. Removal shall be on a daily basis when tracking occurs. Sweeping may be ordered by at any time if conditions warrant. Sweeping shall be maintained throughout the duration of the construction and done in a manner to prevent dust being blown to adjacent properties.
5) Install inlet protection at all public and private catch basin inlets, which receive runoff from the disturbed areas. Catch basin inserts are required in undisturbed areas that receive runoff from disturbed areas. Staked silt fence or other approved BMP's in disturbed areas not subject to public vehicle traffic may be acceptable. NOTE: HAY BALES OR FILTER FABRIC WRAPPING THE GRATES ARE NOT EFFECTIVE OR AN ACCEPTABLE FORM OF INLET PROTECTION.
6) Locate soil or dirt stockpiles no less than 25 feet from any public or private roadway or drainage channel. If remaining for more than seven days, stabilize the stockpiles by mulching, vegetative cover, tarps, or other means. Control erosion from all stockpiles by placing silt barriers around the piles. Temporary stockpiles located on paved surfaces must be no less than two feet from the drainage/gutter line and shall be covered if left more than 24 hours.
7) Maintain all temporary erosion and sediment control devices in place until the contributing drainage area has been stabilized. Inspect temporary erosion and sediment control devices on a daily basis and replace deteriorated, damaged, or rotted erosion control devices immediately.
8) Temporarily or permanently stabilize all denuded areas which have been finish-graded, and all denuded areas in which grading or site building construction operations are not actively underway against erosion due to rain, wind and running water within 14 days. Use seeding and mulching, erosion control matting, and/or sodding and staking in green space areas. Use early application of gravel base on areas to be paved.
9) Remove all temporary synthetic, structural, non-biodegradable erosion and sediment control devices after the site has undergone final stabilization and permanent vegetation has been established, minimum vegetation establishment is 70% cover, maintain all temporary erosion control devices until 70% established cover is achieved.
10) Ready mixed concrete and concrete batch plants prohibited within the public right of way, designate concrete mixing/washout locations in the erosion control plan. Under no circumstances may washout water drain onto the public right of way or into the public storm sewer

CITY OF MINNEAPOLIS SECTION

EROSION CONTROL PERMITTING PROCESS

Annual Maintenance Projects

Single Family Construction/ Demolition

Utility Excavations

Multi-Family Commercial Industrial Projects < 5,000 sq ft

Multi-Family Commercial Industrial Projects > 5,000 sq ft

Commercial Industrial Demolition And Grading Projects

Public Works Street Connection Permit

Public Works Site Plan Review
If >5,000 sq ft, Erosion Control Plan required

Department of Inspections and Regulatory Services

Issues Erosion Control Permits

A small Utility project will follow the Reg Svcs path. A large project will follow the Public Works path.

Installation of Erosion Control

Construction

Daily Inspection by Contractor

Final Inspection by Regulatory Services

Pre-Construction Meeting

Installation of Erosion Control
Notify City 48 hours prior to excavation

Ongoing Inspections by Public Works and Regulatory

Construction

Daily Inspection by Contractor

Final Inspection by Public Works

Certificate of Completion
(If Required)

CITY OF MINNEAPOLIS SECTION

EROSION CONTROL REQUIREMENTS AND FEE SCHEDULE

CATEGORY/SIZE of PROJECT	PERMIT REQUIRED		PLAN REQUIRED		FEE	APPLY ACCEPTED EROSION CONTROL PRACTICES
Detached Garage <680 sq. ft.	NO		NO		NO FEE	***YES***
Single family construction <500 sq. ft.	NO		NO		NO FEE	***YES***
Single-family construction >500 sq. ft.		***YES***	NO		$75.00/3,000 sq. ft. $25.00/ea. additional 1,000 sq. ft.	***YES***
Single family demolition		***YES***	NO		$75.00	***YES***
Multi-family, Comm./Ind. <500 sq. ft. **	NO		NO		NO FEE	***YES***
Multi-family, Comm./Ind. >500 sq. ft. **		***YES***	NO		$250.00	***YES***
Multi-family, Comm./Ind. >5,000 sq. ft. **		***YES***		***YES***	$250.00	***YES***
Multi-family, Comm./Ind. Demo. <5,000 sq. ft.		***YES***	NO		$150.00	***YES***
Multi-family, Comm./Ind. Demo >5,000 sq. ft.		***YES***		***YES***	$150.00	***YES***
Utilities <500 sq. ft. or 5 cubic yards	NO		NO		NO FEE	***YES***
Utilities >500 sq. ft. or 5 cubic yards		***YES***	NO		$ .10/lin. ft. $25.00 minimum	***YES***
Maintenance projects		***YES***	NO		$250.00	***YES***

* Area is based on building footprint * Area is based on ground area disturbed

ACTIVITIES EXEMPT FROM PERMITTING PROCESS

- utility repairs
- home gardens
- minor repairs
- maintenance work <500 sq. ft.
- installation of any poles, posts, signs, fences
- emergency work or repairs
- cemetery graves
- any activity disturbing <5 cu. yds. or <500 sq. ft.

EROSION CONTROL
INLET PROTECTION PRODUCTS

The following manufactured BMP's provide erosion control protection on existing storm drain inlets. The City of Minneapolis Public Works Department does not endorse or approve the listed products for a specific application. Compliance with chapter 52 of the Minneapolis Code *(Erosion and Sediment Control Ordinance)* is determined by the conditions found upon inspection. Additionally hay bales are not an approved means of inlet protection and are not approved as a BMP for construction projects in the City of Minneapolis.

Type A

Inlet protection to be utilized around field inlets until permanent stabilization methods has been established. Inlet protection Type may also be utilized on pavement inlets before installation of curb and gutter or pavement.

- *Road Drain* - WIMCO, LLC- Shakopee, MN (952) 445-4071
- *Stream Guard* - Foss Environmental-Seattle, WA
- *Erosion Control Shroud* - Royal Concrete Pipe-Stacy, MN
- *Silt Sack* - ACF Environmental-Richmond, VA
- *Stream Guard*-sediment only - Foss Environmental-Seattle, WA
- *Verti*Pro* - Alpine Stormwater Mgt-Grove City, OH

Type B

Inlet protection will be utilized without curb heads.

- *Dandybag* - Dandy Products-Grove City, OH

Type C

Inlet protection will be utilized on street inlets with curb heads.

- *Beaver Dam* - Dandy Products-Grove City, OH
- *Road Drain Curb and Gutter* - WIMCO, LLC - 799 Theis Drive - Shakopee, *MN (Phone 952.445.4071)*
- *Silt Screen* - Alpine Stormwater Mgt - Grove City, OH

Type D

Inlet protection to be utilized at culvert inlets until permanent stabilization methods has been established.

EROSION CONTROL
INLET PROTECTION PRODUCTS

Product Links:

General
http://www.priceandcompany.com/products.htm
http://www.suntreetech.com/products/
http://www.siltsaver.com/sshome.asp
http://www.bmccatalog.com/streamcatbas1.html
http://www.acfenvironmental.com/catalog.asp
http://www.emeraldseedandsupply.com/erosioncontrol/ec_inlet.html
http://www.rginc.com/geo/SedimentControlDevices.htm
http://www.stormwater-products.com/
http://www.dandyproducts.com/true%20dam%20page.htm
http://www.environmental-center.com/technology/royalenterprises/products.htm#sediment
http://stormdrainfilters.com/index.htm

Silt-Sacks
http://www.stormwater-products.com/
http://www.emeraldseedandsupply.com/erosioncontrol/ec_inlet.html
http://www.acfenvironmental.com/catalog.asp
http://www.priceandcompany.com/products.htm

Grate Inlet Protection
http://www.suntreetech.com/products/
http://www.siltsaver.com/sshome.asp
http://stormdrainfilters.com/index.htm
http://www.environmental-center.com/technology/royalenterprises/products.htm#sediment

Dewatering Bag
http://www.stormwater-products.com/
http://www.rginc.com/geo/SedimentControlDevices.htm
http://www.acfenvironmental.com/catalog.asp
http://www.priceandcompany.com/products.htm

Curb Inlet Protection
http://www.stormwater-products.com/
http://www.rginc.com/geo/SedimentControlDevices.htm
http://www.acfenvironmental.com/catalog.asp
http://www.dandyproducts.com/true%20dam%20page.htm

Pipe Sock
http://www.stormwater-products.com/

Inlet Exerts
http://www.suntreetech.com/products/
http://www.siltsaver.com/sshome.asp
http://www.bmccatalog.com/streamcatbas1.html
http://www.stormwater-products.com/

PROJECT REVIEW APPLICATION & TRACKING - MINNEAPOLIS PUBLIC WORKS - ENGINEERING SERVICES

City of Mpls ID #:

Complete by Developer

Name of Development/Description:

(Attach narrative describing project)

Location of Work:

(Reference major streets and highways, attach site map)

Land Use Proposed:

(Industrial, Commercial, Multiple Residential [include number and type of units], Single Residential, Utility, Public, etc.)

Name of Developer: _____ **Telephone:** _____

Address: _____

City, State, Zip Code: _____

Developer's Contact Person:

Name: _____ **Telephone:** _____

Submitted to Watershed Organization* for Review (check one):

- ☐ Bassett Creek Water Management Commission (BCWMC)
- ☐ Minnehaha Creek Watershed District (MCWD)
- ☐ Mississippi Water Management Organization (MWMO)
- ☐ Shingle Creek Watershed Management Commission (SCWMC)

***To determine which Watershed Organization your site is located in, go to www.ci.minneapolis.mn.us/environment/watersheds.asp**

Please see the MN Pollution Control Agency's Website for the State Stormwater Manual (including information on BMPs):
www.pca.state.mn.us/water/stormwater/stormwater-manual.html

Authorized Signature: _____ **Date:** _____

Review Process Steps:

1. Developer completes and submits Page 1 of Project Review Application form
2. City of Minneapolis reviews application form, and returns completed Page 2 of Project Review Application Form to Develope
3. Developer submits all project information/calculations to the City of Minneapolis and Project Review Application Form
4. City of Minneapolis Approves or Disapproves Project and notifies Developer

Complete by City of Minneapolis

The following items apply to this project site (check all that apply):

Date: _____

Signature: _____

- ☐ Site **not** captured under Chapter 54 of the City Stormwater Ordinance
- ☐ A NPDES permit is required: www.pca.state.mn.us/programs/inpdes_p.html
- ☐ An erosion and sedimentation plan is required: www.ci.minneapolis.mn.us/stormwater/classroom-resources/erosioncontrollinks.asp
- ☐ There are storm sewer connection limitations at this project site (please explain):
- ☐ Other (please explain):

City of Minneapolis Stormwater Ordinance Requirements (check all that apply):

(Information/calculations for all requirements to be submitted with review plans)

- ☐ 70% Total Suspended Solids (TSS) removal to be addressed (1.5 inches of runoff volume from site).
- ☐ Runoff rate control does not increase peak flows over pre-development** conditions (for the 2-yr, 10-yr, and 100-yr storm events).

  **The most conservative assumption for pre-development conditions is the assumption that the land has undergone essentially no change since before settlement.
- ☐ Total Phosphorus (TP) removal to be addressed (dependant upon receiving water body).
- ☐ Other (please explain):

City of Minneapolis Comments:

Complete by City of Minneapolis

City of Minneapolis Site Review Recommendation (check one):

Date: _____

Signature: _____

- ☐ Approved - Stormwater Requirements
- ☐ Disapproved

  Deficiencies to be addressed and re-submitted to the City before project approval:

PROJECT DESIGN CHECKLIST

☑	1	Site Conditions	Notes/Comments
☐	1.1	Identify receiving water bodies and any water quality requirements for those water bodies.	
☐	1.2	Is there any water flowing on to the property from off-site?	
☐	1.3	Is there any filling proposed within the floodplain? If so, how does the developer intend to mitigate?	
☐	1.4	Does drainage from a new impervious surface go through a water quality pond or other BMP?	
☐	1.5	Are drainage easements shown on preliminary plat?	
☐	1.6	Is there a DNR Protected Water (Lake or River) on or adjacent to the property? If so, check the shoreline ordinance for setbacks of buildings and septic systems.	
☐	1.7	Does the development propose anything that would require special consideration, i.e. developing close to a park or environmentally sensitive area, altering storm sewer system, zoning change, etc.	

☑	2	Grading Plan Information & Stormwater Computations	Notes/Comments
☐	2.1	Property lines.	
☐	2.2	Delineation of existing & proposed subwatersheds contributing from off-site and on-site.	
☐	2.3	Location, alignment and elevation of proposed and existing stormwater facilities.	
☐	2.4	Delineation of existing on-site wetlands, shoreland and/or floodplain areas.	
☐	2.5	Existing and proposed normal and 100-year water elevations for all water bodies (including wetlands) on site.	
☐	2.6	Existing and proposed site contour elevations (with datum specified: either NGVD 29, or NAVD 88).	
☐	2.7	Construction plans and specifications for all stormwater management facilities.	
☐	2.8	Stormwater runoff volume and rate analyses for existing and proposed conditions.	
☐	2.9	All hydrologic and hydraulic computations completed to design the proposed stormwater quality and/or quantity management facilities.	
☐	2.10	Provision of outlots or easement for maintenance access to detention basins, constructed wetlands and other stormwater management facilities.	
☐	2.11	Documentation indicating conformance with the existing City of Minneapolis municipal water management plan.	
☐	2.12	Minimum building elevation for each lot.	
☐	2.13	Erosion control/site restoration plan.	
☐	2.14	Soils information. This information will be used to verify curve numbers and/or infiltration parameters used in stormwater computations. Please also note if there is tile drain in the area.	
☐	2.15	Is there any water flowing off the development uncontrolled?	

☑	3	Stormwater Ponds	Notes/Comments
☐	3.1	Are the pipes big enough at road crossings?	
☐	3.2	Check adequate dead storage of water quality pond.	
☐	3.3	Check adequate average depth of water quality pond.	
☐	3.4	Run ponds and pre-development watersheds through model to check treatment levels.	
☐	3.5	Do inlet pipes into stormwater ponds come in at the Normal Water Level (NWL) or lower?	
☐	3.6	Is the distance between inlets and outlets maximized for stormwater ponds?	
☐	3.7	Has a 10:1 safety bench been provided for all stormwater ponds, especially those easily accessed by children? Or are the max slopes for the pond 6:1 or less?	

☑	4	Wetlands	Notes/Comments
☐	4.1	Are there existing wetlands on the property, or is the property directly adjacent to a wetland, or is there discharge to a wetland? If "no", skip to section 5.	
☐	4.2	Does any water from roads or driveways drain directly into a wetland untreated?	
☐	4.3	Is there any filling or digging in wetlands? (Complies with WCA?)	
☐	4.4	Do the plans list High Water Elevations for all water bodies, stormwater ponds, and wetlands?	
☐	4.5	Is there a change in hydrology (watershed divides)? What will be the impact to wetlands?	
☐	4.6	Compare the 2, 10, and 100-yr flood elevations of wetlands for pre- and post-development conditions. The peaks for the 2-year and 10-year should be within a couple of tenths or an impact report should be submitted (WCA requirement).	

☑	5	Phosphorus Computations	Notes/Comments
☐	5.1	Does the development meet the City's phosphorus reduction/removal requirement?	
☐	5.2	Has the applicant used the City's phosphorus concentrations values in their water quality computations?	

☑	6	Erosion Control	Notes/Comments
☐	6.1	Does the list of BMPs include rock construction entrances?	
☐	6.2	Pipe Inlet protection--are all pipe inlets that receive water from a disturbed area protected?	
☐	6.3	Is sweeping planned?	
☐	6.4	Does the Erosion Control Plan or SWPPP address temporary and permanent erosion control? And is the SWPPP broken down into phases?	
☐	6.5	Is turf establishment language listed on the plans?	

Please see the MN Pollution Control Agency's State Stormwater Manual for information on Best Management Practices (BMPs):

www.pca.state.mn.us/water/stormwater/steeringcommittee/sc-manual.html#manual

CITY OF MINNEAPOLIS SECTION

SITE PLAN REVIEW

SITE PLAN CHECK LIST

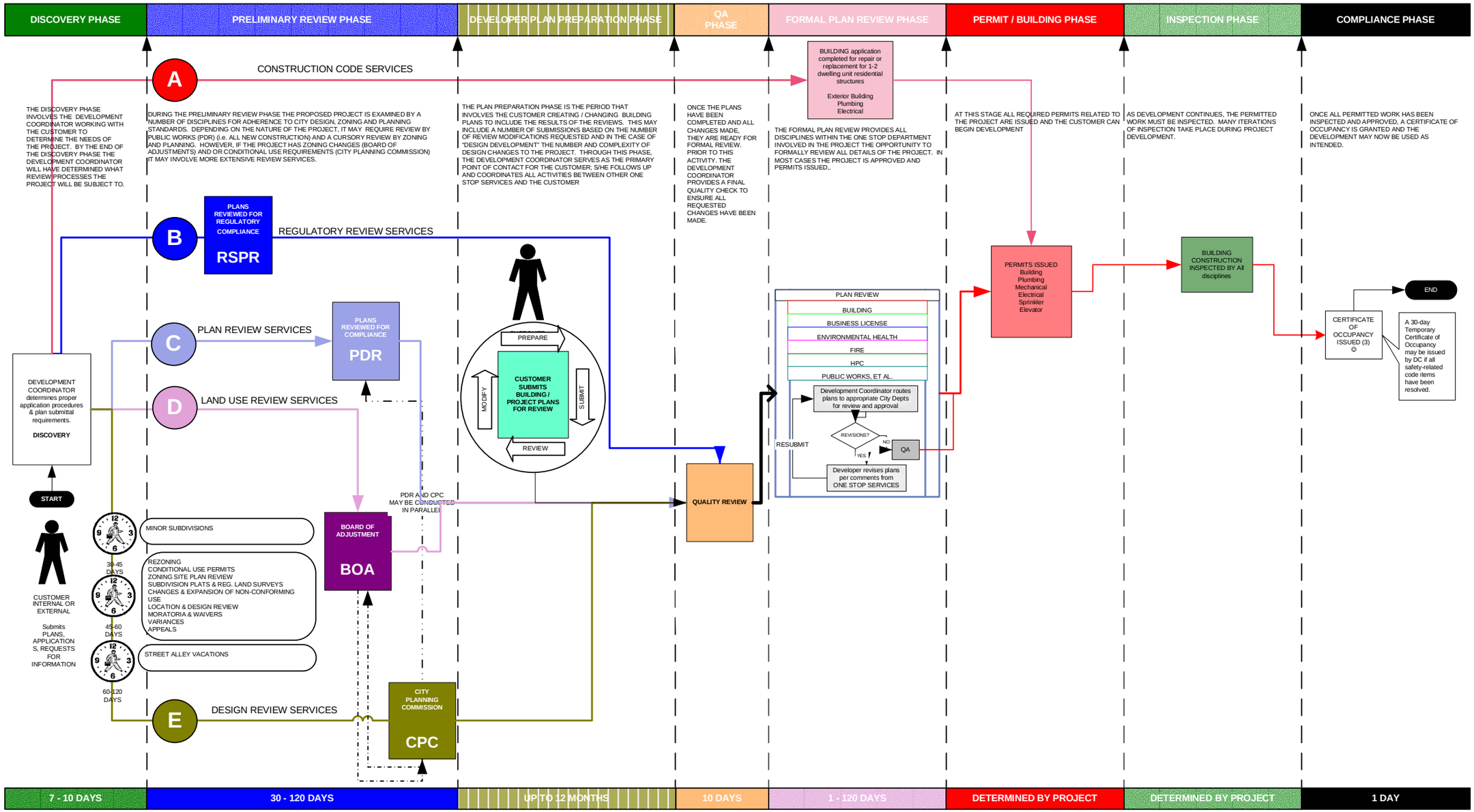
Site plans will **not** be approved without the following items

(Additional items may be required depending on the site)

- Complete site drainage (*including roof tops and interior drains*) indicated by contours or elevations. *(Storm water may not run over the public sidewalk, into the sanitary sewer or onto adjacent properties)*
- All proposed, existing or abandoned sanitary sewer service line(s), including size and material. *(all abandoned connections must be cut and plugged at the main and curb per city requirements)*
- All proposed or existing storm drains and roof connections include size, material and location. Storm Drains within the public right of way shall be Reinforced Concrete or Ductile Iron Pipe and permitted by Minneapolis utility Connections *(Any existing storm/roof connections to the sanitary sewer must be removed.)*
- Erosion Control Plan, (*see City of Minneapolis Erosion and Sediment Control Plan 52.100)*
- Storm drains and sanitary sewers in the public right-of-way adjacent to site.
- Any necessary watershed compliance or approvals.
- Sites > 1-acre must comply with the *Minneapolis Stormwater Management Ordinance*.
- All sites are encouraged to utilize *Stormwater BMP's* where possible and may be required to provide rate control as directed by the City Engineer.
  See HTTP://www.metrocouncil.org/environment/Watershed/bmp/manual.htm

For further information contact:
Paul Chellsen, Supervising Engineering Technician III
Minneapolis Sewer Design
(612)-673-2406 or cellular (612)-597-4468
paul.chellsen@ci.minneapolis.mn.us

minneapolis city of lakes



MINNEAPOLIS DEVELOPMENT REVIEW SERVICES

PROJECT MINNEAPOLIS ONE STOP	DESCRIPTION MOS DEVELOPMENT SERVICES PROCESSES ROADMAPS - HILVL	FILENAME ROADMAP MOS LGL FORMT.VSD	PREPARED BY M. S. ALLEN
PROCESS ID PROCESS ROADMAP	REVISED 6/29/2005	PAGE 1 OF 2	DATE 2/7/2005

2005r-064

RESOLUTION
of the
CITY OF
MINNEAPOLIS

By Colvin Roy and Johnson

Designating the utility rates for sewer rental and stormwater service effective with water meters read on and after March 1, 2005.

Resolved by The City Council of The City of Minneapolis:

Sewer Rental Rate

Effective with utility billings for water meters read on and after March 1, 2005, the meter rates for sewer are hereby fixed and shall be collected as follows:

The sewer rental rates shall be applied to utility billings for water meters read from and after March 1, 2005. The sewer rental rates will be charged to properties within and outside the City of Minneapolis that are served directly by the City of Minneapolis sewer system and that are all served either directly or indirectly by the sewage disposal system constructed, maintained and operated by the Metropolitan Council Environmental Services under and pursuant to Minnesota Statutes Sections 473.517, 473.519 and 473.521, Sub. 2, are hereby set as follows:

(a) The sewer rental rate applicable inside the City of Minneapolis is two dollars and zero cents ($2.00) per one hundred (100) cubic feet. The minimum sewer rental rate shall be two dollars ($2.00) per month.

(b) The sewer rental rate applicable outside the City of Minneapolis for all sewage flow generated is two dollars and zero cents ($2.00) per one hundred (100) cubic feet. The minimum sewer rental rate shall be six dollars ($6.00) per month. Sewer rental only service shall be thirteen dollars ($13.00) per month.

(c) The sewer rental charge for residential property not exceeding three (3) residential units shall be based on the volume of water used during the winter season which is defined as a four (4) month period between November 1 and March 31.

(d) The sewer rental charge for residential property exceeding three (3) residential units and all other commercial and industrial property shall be based on measured sewage volume or the total water volume used during the billing period as is appropriate.

Stormwater Rate

The stormwater rate, subject to the provisions in Chapter 510, of the Minneapolis Code of Ordinances, is established and a stormwater charge is imposed on each and every Single-Family Residential Developed Property, Other Residential Developed Property, Non-Residential Developed Property, and Vacant Property, other than Exempt Property, and the owner and non-owner users. In the event the owner and non-owner user of a particular Developed Property are not the same, the liability for the owner and non-owner user for the stormwater charge attributable to the Developed Property shall be joint and several liability.

The stormwater charge will be applied against properties on and after March 1, 2005, and the Equivalent Stormwater Unit (ESU) rate is eight dollars and seventy-two cents ($8.72). The ESU measurement is 1,530 square feet of impervious area.

For stormwater charges imposed on Single-Family Residential Developed Properties, the properties are categorized into one of three tiers based on the estimated amount of impervious area as follows:

- Single-Family Residential Developed Property/High – greater than one thousand five hundred and seventy-eight (1,578) square feet of estimated impervious area.

- Single-Family Residential Developed Property/Medium – equal to or greater than one thousand four hundred eighty-five (1,485) square feet and less than or equal to one thousand five hundred seventy-eight (1,578) square feet of estimated impervious area.

- Single-Family Residential Developed Property/Low – less than one thousand four hundred eighty-five (1,485) square feet of estimated impervious area.

The ESU and stormwater charge for each of these tiers shall be as follows:

Tier	**ESU**	**Stormwater Charge**
High --	1.25	$ 10.90
Medium –	1.00	$ 8.72
Low –	0.75	$ 6.54

Stormwater Charges for all other properties will be based on the following calculation:

(Gross Lot Size in sq. ft. X Runoff Coefficient) / 1,530 sq ft = # of ESU

ESU X $8.72 = Monthly fee

The runoff coefficient assumed for each land use category is shown in the table below.

Table 1

LANDUSE	Coefficient Applied
Bar- Rest.- Entertainment	.75
Car Sales Lot	.95
Cemetery w/Monuments	.20
Central Business District	1.00
Common Area	.20
Garage or Misc. Res.	.55
Group Residence	.75
Ind. Warehouse- Factory	.90
Industrial Railway	.85
Institution- Sch.- Church	.90
Misc. Commercial	.90
Mixed Comm.- Res- Apt	.75
Multi-Family Apartment	.75
Multi-Family Residential	.75
Office	.91
Parks & Playgrounds	.20
Public Accommodations	.91
Retail	.91
Single Family Attached	.75
Sport or Rec. Facility	.20
Utility	.90
Vacant Land Use	.20
Vehicle Related Use	.90

By Colvin Roy, Goodman, Benson and Zimmermann

Amending Title 19 of the Minneapolis Code of Ordinances relating to Water, Sewers and Sewage Disposal by adding a new Chapter 510 relating to Stormwater Management System and the Operation of a Stormwater Utility.

The City Council of The City of Minneapolis do ordain as follows:

Section 1. That the Minneapolis Code of Ordinances be amended by adding thereto a new Chapter 510 to read as follows:

CHAPTER 510. STORMWATER MANAGEMENT SYSTEM AND OPERATION OF A STORMWATER UTILITY

510.10. Definitions. In addition to the words, terms and phrases elsewhere defined in this chapter, the following words, terms and phrases as used in this chapter shall have the following meanings:

Bonds means revenue or general obligation bonds, notes, loans or other debt obligations heretofore or hereafter issued to finance the costs of improvements and/or operations and maintenance.

Building permit means a permit issued by the director of inspections that permits construction of a structure.

City means City of Minneapolis, Minnesota.

City council means governing body of the city.

Costs of capital improvements means costs incurred in providing capital improvements to the stormwater management system or any portion thereof including, without limitation, the cost of alteration, enlargement, extension, improvement, construction, reconstruction, testing and development of the stormwater management system; insurance premiums for insurance taken out and maintained during construction, professional services and studies connected thereto; principal and interest on bonds heretofore or hereafter issued, acquisition of real and personal property by purchase, lease, donation, condemnation or otherwise for the stormwater management system or for its protection; and costs associated with purchasing equipment, computers, furniture, etc., that are necessary for the operation of the system or the utility.

Debt service means an amount equal to the sum of (i) all interest payable on bonds during a fiscal year, plus (ii) any principal installments payable on the bonds during that fiscal year.

Developed property means real property, other than undisturbed property; provided that, property used for agricultural uses, upon which no dwelling unit is located, shall not constitute developed property for purposes of this chapter.

Director means the city engineer/director of the public works department for the City of Minneapolis or the director's designee.

Dwelling unit means one or more rooms, designed, occupied or intended for occupancy as a separate living quarter, with a single complete kitchen facility, sleeping area and bathroom provided within the unit for the exclusive use of a single household.

Equivalent Stormwater Unit (ESU) means a unit of measure that is equal to the average impervious area of single-family residential developed property that falls within the medium class, with a single-family detached dwelling unit located thereon and within the city's limits, as established by city council resolution or ordinance, as provided for herein.

Equivalent Stormwater Unit rate or *ESU rate* means the storm sewer charge imposed on single-family residential developed property within the medium class, as established by city council resolution or ordinance, as provided herein.

Exempt property means public rights-of-way, public trails, public streets, public alleys, public sidewalks, railroad tracks that are not in railroad yards, and also means public lands and/or easements upon which the stormwater management system is constructed and/or located.

Fiscal year means a twelve-month period commencing on the first day of January of any year or such other twelve (12) month period adopted as the fiscal year of the city.

Impervious area means the number of square feet of hard surface areas that either prevent or retard the entry of water into the soil matrix, as it entered under natural conditions as undisturbed property, and/or cause water to run off the surface in greater quantities or at an increased rate of flow from that present under natural conditions as undisturbed property, including, but not limited to, roofs, roof extensions, driveways, pavement and athletic courts.

Other residential developed property means developed property upon which two (2) or more family and/or multi-family dwellings are located.

Non-residential developed property means developed property other than single residential developed property and other residential developed property.

Operating budget means the annual stormwater utility operating budget adopted by the city for the succeeding fiscal year.

Operations and maintenance means, without limitation, the current expenses, paid or secured, of operation, maintenance, repair and minor replacement of the system, as calculated in accordance with generally accepted accounting practice. This shall include, without limiting the generality of the foregoing, cost of studies related to the operation of the system; costs of the study performed heretofore in relation to establishing storm sewer charges for the stormwater utility and other start up costs of

the stormwater utility; costs related to the national pollutant discharge elimination system permit study, application, negotiation and implementation, including public education and outreach, as mandated by federal and state laws and regulations and the costs of obtaining and complying with all other permits required by law, insurance premiums, administrative expenses, equipment costs, including professional services, labor costs and the cost of materials and supplies used for current operations.

Revenues means all rates, fees, assessments, rentals or other charges or other income received by the stormwater utility in connection with the management and operation of the system, including amounts received from the investment or deposit of monies in any fund or account, as calculated in accordance with generally accepted accounting practices.

Runoff coefficients means those numbers approved by the city council that are used to estimate the impervious area for each non-single family classified property. A list of the coefficients used for the city is found in Table 1 that is incorporated herein.

Single family residential developed property means developed property upon which single-family detached dwellings are located.

Stormwater charge means a charge authorized by this chapter**,** Minnesota Statutes 2004, Section 444.075, and other applicable law, and further as set forth in resolution or ordinance heretofore or hereafter adopted or hereafter amended by the city council, which is established to pay operation and maintenance, costs of capital improvements, debt service associated with the stormwater management system and other costs included in the operating budget.

Stormwater management system, *sewer system* or *system* means storm sewers that exist at the time the ordinance codified in this chapter is adopted or that are hereafter established and all appurtenances necessary in the maintaining and operating of the same, including, but not limited to pumping stations; enclosed storm sewers; outfall sewers; surface drains; street, curb and alley improvements associated with storm or surface water improvements; natural and manmade wetlands; channels; ditches; rivers; streams; wet and dry bottom basins; pocket ponds; multiple pond systems; settling basins; infiltration trenches or basins; filter systems; bioretention areas; dry or wet swales; grass channels; roof top detention; skimming devices; grit chambers and other flood control facilities; and works for the collection, transportation, conveyance, pumping, treatment, controlling, storing, managing, and disposing storm or surface water or pollutants originating from or carried by storm or surface water.

Stormwater utility or *utility* means the utility created by this chapter to operate, maintain and improve the stormwater management system and for all other purposes set forth in this chapter.

Undisturbed property means real property that has not been altered from its natural condition in a manner that disturbed or altered the topography or soils on the property to the degree that the entrance of water into the soil matrix is prevented or retarded.

Vacant land means real property upon which there is no structure, as shown in the records of the city assessor's office**,** which is not designed for or regularly used for commercial or residential purposes, and which is not used in connection with another piece of property, Vacant land includes undisturbed property and land with no building used as a community garden.

510.20. Creation of stormwater utility. Pursuant to the provisions of Minnesota Statutes 2004, Section 444.075, the city's general home rule powers, its nuisance powers, police powers and all other authorized powers, the city council does establish a stormwater utility and stormwater management system and declares its intention to operate, construct, maintain, repair and replace the stormwater management system and operate the stormwater utility.

510.30. Findings and determinations. The city finds that the elements of the stormwater management system that provides for the collection, conveyance, detention/retention, treatment and release of stormwater, the reduction of hazard to property and life resulting from stormwater runoff, improvement in general health and welfare through reduction of undesirable stormwater conditions and improvement to the water quality in the storm and surface water system and its receiving waters are of benefit and provide services to all property within the city. It is further found, determined and declared that this chapter is in furtherance of and implements the goals and strategies of the local surface water management plan, the annual Combined Sewer Overflow (CSO) report and the city's National Pollutant Discharge Elimination System (NPDES) permit.

510.40. Administration. The stormwater utility, under the supervision of the director, shall have the power to:

(1) Administer the acquisition, design, construction, maintenance, operation, extension and replacement of the stormwater management system, including real and personal property that is or will become a part of or protect the system.

(2) Prepare regulations, as needed, to implement this chapter, and forward those regulations to the city council for consideration and adoption, and adopt those procedures, as are desirable, to implement adopted regulations or to carry out other responsibilities of the utility.

(3) Administer and enforce this chapter and all regulations, guidelines and procedures adopted relating to the design, construction, maintenance, operation and alteration of the stormwater management system, including, but not limited to, the flow rate, volume, quality and/or velocity of the stormwater conveyed thereby.

a. Advise the city council on matters relating to the stormwater management system.

b. Develop and review plans concerning creation, design, construction, extension and replacement of the system and make recommendations to the city council related thereto.

c. Inspect private systems, as necessary, to determine the compliance of those systems with this chapter and any regulations adopted pursuant hereto.

d. Make recommendations to the city council concerning the adoption of ordinances, resolutions, guidelines and regulations to protect and maintain water quality within the stormwater management system in compliance with water quality standards established by state, county, regional and/or federal agencies, as now adopted or hereafter adopted or amended.

e. Analyze the cost of services and benefits provided by the stormwater management system and the structure of fees, service charges, fines and other revenues of the stormwater utility at least once each year.

f. Make recommendations to the city council concerning the cost of service and benefits provided by the stormwater management system and structure of fees, service charges, fines and other revenues of the stormwater utility.

g. Analyze the appropriateness of providing credits against the stormwater charge for owners of property who employ structural or non-structural best management practices or other stormwater management practices on-site that significantly reduce the quantity or improve the quality of stormwater run-off from their property that enters the system and make recommendations to the city council regarding the provision of these credits.

h. Administer programs established pursuant hereto or pursuant to ordinances, resolutions, regulations or guidelines hereafter adopted by the city council that provide for credits and/or incentives that reduce stormwater charges imposed against properties.

510.50. Operating budget. The city shall, as part of its annual budget process, adopt an operating budget for the stormwater utility for the next following fiscal year. The operating budget shall be prepared in conformance with the state budget law, city policy and generally accepted accounting practices. The initial operating budget commences January 1, 2005, and ends December 31, 2005.

510.60. Stormwater charge. (a) Stormwater Charge Established. Subject to the provisions of this chapter, there is imposed on each and every Single-Family Residential Developed Property, Other Residential Developed Property and Non-Residential Developed Property, and vacant property, other than Exempt Property, and the owner and non-owner users thereof, a Stormwater Charge. In the event the owner and non-owner user of a particular Developed Property are not the same, the liability for the owner and non-owner user for the Stormwater Charge attributable to the Developed Property shall be joint and several liability. This Stormwater Charge shall be determined and set by the provisions of this chapter in accordance with the ESU and ESU Rate,

which is established by ordinance or resolution of the City Council and which may be amended from time to time by the City Council.

(1) Stormwater Charge for Single-Family Residential Developed Property. Three classes of Single-Family Residential Developed Property are established to account for the wide range of the amount of Impervious Area that exists on individual Single-Family Residential Developed Properties in the City. The three Single-Family customer classes are based on statistical sampling of estimated impervious area as developed from the City Assessor's Single-Family Residential Developed real estate property records which includes: foundation square footage, garage stalls, estimation of driveway square footage and foundation square footage of any outbuildings/other improvements. Classification of the Single-Family Residential Developed customer class properties into the three customer classes is made based on estimated impervious area. Single-Family Residential Developed properties will be assigned to one of three Single-Family Residential customer classes. The three Single Family Residential customer classes are as follows:

a. Single-Family Residential Developed Property/High – greater than 1,578 square feet of estimated impervious area.

b. Single-Family Residential Developed Property/Medium – equal to or greater than 1,485 square feet and less than or equal to 1,578 square feet of estimated impervious area.

c. Single-Family Residential Developed Property/Low – less than 1,485 square feet of estimated impervious area.

The stormwater charge for each of these classes shall be as follows:

High --	1.25 % of a ESU
Medium –	1 ESU
Low –	.75 % of a ESU

In the event of a newly constructed dwelling unit, the charge for the stormwater charge attributable to that dwelling unit shall commence upon the issuance of the building permit for that dwelling unit.

(2) *Stormwater charge for other residential developed property*. The stormwater charge for other residential developed property shall be the ESU rate multiplied by the numerical factor obtained by multiplying the gross area of a property by the runoff coefficient for the other residential developed property, as set forth in Table 1 (the actual coefficient will be defined at the time of the annual rate adoption) and then dividing the above product by the ESU, as this ESU is established by City Council resolution or ordinance ((gross square footage X runoff coefficient)/ESU = ## ESU). In the event of a newly constructed dwelling unit, the stormwater charge attributable to that dwelling unit shall commence upon the issuance of the building permit for that dwelling unit.

(3) *Stormwater charge for non-residential developed property.* The stormwater charge for non-residential developed property shall be the ESU rate multiplied by the number of ESU's for each individual non-residential developed property. The number of ESU's for each individual non-residential developed property shall be obtained by multiplying the gross area of each individual property by the runoff coefficient for the customer class that is the most similar to the use to which that individual non-residential developed property is currently being put, as set forth in Table 1 (the actual coefficient will be defined at the time of the annual rate adoption) and then dividing the above product by the ESU, as this ESU is established by City Council resolution or ordinance ((gross square footage X runoff coefficient)/ESU = ## ESU). The minimum stormwater charge for any non-residential developed property shall be in an amount equal to that of one ESU. In the event of newly developed non-residential developed property, the stormwater charge attributable to that development shall commence upon the issuance of the building permit. In the event of additional development to property that is already developed property, the charge for the stormwater charge attributable to that additional development shall commence upon the issuance of the building permit.

(4) *Stormwater charge for vacant property.* The stormwater charge for vacant property shall be the ESU rate multiplied by the number of ESU's for each individual vacant property. The number of ESU's for each individual vacant property shall be obtained by multiplying the gross area of each individual property by the runoff coefficient for the vacant property class, as set forth in Table 1 (the actual coefficient will be defined at the time of the annual rate adoption) and then dividing the above product by the ESU, as this ESU is established by City Council resolution or ordinance ((gross square footage X runoff coefficient)/ESU = ## ESU). There is no minimum stormwater charge for vacant property.

(b) *Stormwater charge calculation*. The director shall initially, and from time to time, determine the class of residential developed property into which each individual residential developed property falls to establish the stormwater charge, based on the impervious area of the parcel as shown in the single-family records maintained by the city assessor's office. The stormwater charge for other residential developed property, for non-residential developed property, and for vacant property in the city shall be calculated as provided for subsection (a)(2), (3) & (4). The director shall make the initial calculation with respect to existing other residential developed property, non-residential developed property, and vacant property and may from time to time change this calculation from the information and data deemed pertinent by the director. With respect to property proposed to be non-residential developed property, the applicant for development approval shall submit square footage impervious area calculations, in accordance with the submission requirements for the application being submitted, as set forth in the applicable section of Title 20 of this Code.

(c) *Stormwater charge credit*. A system of credits, which may reduce the stormwater charge that is imposed, as provided for above, is hereby established. A credit shall be granted for developed or undeveloped property pursuant to the rules provided for

herein. The director shall, pursuant to the rules provided for herein, grant a credit to those owners or non-owner users of properties, against which stormwater charges are imposed, who employ structural or non-structural best management practices or other stormwater management practices on-site that significantly reduce the quantity or significantly improve the quality of stormwater run-off from their property that enters the system. The director shall propose rules providing guidelines for the awarding of credits. The Council shall approve, or approve as modified, these rules for the awarding of credits. The rules shall be consistent with this section. A credit also shall be granted in a percentage amount set by said city council pursuant to the rules for properties with respect to which a final plan or final plat has been approved or other final development approval has been granted by the city, on or before the effective date of this ordinance, which requires the construction of an on-site structural or non-structural best management practices or other stormwater management practices that significantly reduce the quantity or improve the quality of stormwater run-off from their property that enters the system, provided that, the practices are constructed and/or operational within one (1) year from the date of the applicable final approval. The credit shall begin in the fiscal year that the practice becomes operational. The credit for the first year, however, shall be prorated to reflect the number of months of the first fiscal year that the practices are operational, where appropriate.

510.70. Appeal procedure. (a) Owners of residential developed property, non-residential developed property or vacant property, with respect to which a stormwater charge has been imposed, that disagree:

(1) with the class into which their single-family residential developed property is placed;

(2) with the calculation of the stormwater charge;

(3) with whether their property is benefited by the stormwater utility; or

(4) with whether their property is entitled to a credit or the continuation of a credit or on the amount of a credit**;**

may appeal the calculation or finding to a designee of the director by giving written notice of the appeal to the director at the director’s customary offices within the (10) days of notice of that determination.

The director's designee assigned to hear such appeal shall not be a person that is regularly assigned to utility billing or the stormwater utility. Appeals from the calculation or finding to the designee of the director, as delineated herein above are separate and distinct from the billing complaint procedures established by Sections 509.920 and 509.930 of this Code.

(b) The director’s designee shall give written notice of the time and place for the review requested, pursuant to subsection (a) hereof, to the appealing owner or non-owner user. The review shall be held within fifteen (15) days of receipt by the director of the written appeal. In addition to any oral presentation, appellant shall state all grounds

supporting the appeal in writing, attaching any exhibits, such as photographs, drawings or maps and affidavits that support the claim. In addition, the appellant shall submit a land survey prepared by a registered surveyor showing dwelling units, total property area, type of surface material and impervious area, as appropriate, and any other information that the director shall designate in writing to the appellant. The director may waive the submission of a land survey, if director determines that the survey is not necessary to make a determination on the appeal.

(c) The burden of proof shall be on the appellant to demonstrate, by clear and convincing evidence, that the determination of the director, from which the appeal is being taken, is erroneous.

(d) The filing of a notice of appeal shall not stay the imposition, calculation or duty to pay the stormwater charge. The appellant shall pay the stormwater charge, as stated in the billing**.**

(e) Within fifteen (15) days of the review, the director's designee shall send a written copy of the designee's decision to the appellant with a copy to the director.

(f) If the appellant believes this decision is in error, the appellant may file a written request for a review by the city council based on the written record by filing a request with the city clerk with a copy to the director. The request for review shall be reviewed based on the written record by a committee or subcommittee of the city council, or by a person appointed by the city council, or any designated combination thereof, within thirty (30) days of the filing of the request. The report of the committee, subcommittee and/or other reviewer shall be referred to the full council and be acted upon by the full council within thirty (30) days of the review. The decision of the city council on appeal is subject to judicial review, as provided by the laws of the state.

(g) If the director's designee's determines, upon appeal, that appellant should not pay a charge, pay a charge amount less than the amount appealed from, receive a credit or receive a greater credit than the credit appealed from or the city council, upon appeal, so determines, the city shall issue a check to the appellant in the appropriate amount within ten (10) days of the date of the applicable decision, provided the charge has, as required herein, been paid by the appellant.

510.80. Stormwater charge collection. (a) The stormwater charge shall be billed and collected by the city. The stormwater charge shall be shown as a separate item on the billing from the sewer utility charge levied and assessed pursuant to Section 511.290. In the event the owner and non-owner of a particular developed property are not the same, the liability for the owner and non-owner user for the stormwater charge attributable to the developed property shall be joint and severable. The same administrative procedures for special assessments shall be applied to the stormwater charge, as are applied for water use under Chapter 509 of this Code.

(b) Pursuant to Minnesota Laws 1973, Chapter 320, whenever payment remains in default for a stormwater charge, the city council may annually levy an assessment equal

to the unpaid costs, including penalty and interest against each developed property that is not exempt property and upon which the stormwater charge is unpaid.

510.90. Stormwater fund. Stormwater charges collected by the city shall be paid into a fund that is hereby created and shall be known as the "Stormwater Fund." This fund shall be used for the purpose of paying costs of capital improvements, administration of the stormwater utility, operation and maintenance and debt service of the stormwater management system and to carry out all other purposes of the utility.

510.100. Equivalent stormwater unit (ESU) rate. The ESU and the ESU rate that is used to determine the charge for each class of residential developed property, other residential developed property, non-residential developed property, and vacant property shall be as established in an ordinance or a resolution heretofore adopted or hereafter adopted by the city council, and as thereafter amended.

510.110. Severability. In the event that any portion or section of this chapter is determined to be invalid, illegal or unconstitutional by a court of competent jurisdiction, the decision shall in no manner affect the remaining portions or sections of this chapter, which shall remain in full force and effect.

Table 1 - Ordinance Approved 1/24/05

LANDUSE	Coefficient
Bar- Rest.- Entertainment	.75
Car Sales Lot	.95
Cemetery w/Monuments	.20
Central Business District	1.00
Common Area	.20
Garage or Misc. Res.	.55
Group Residence	.75
Ind. Warehouse- Factory	.90
Industrial Railway	.85
Institution- Sch.- Church	.90
Misc. Commercial	.90
Mixed Comm.- Res- Apt	.75
Multi-Family Apartment	.75
Multi-Family Residential	.75
Office	.91
Parks & Playgrounds	.20
Public Accommodations	.91
Retail	.91
Single Family Attached	.75
Single Family Detached	ESU
Sport or Rec. Facility	.20
Utility	.90
Vacant Land Use	.20
Vehicle Related Use	.90

Minneapolis Stormwater Utility Fact Sheet # 1
Stormwater Best Management Practices (BMP's)

Recommended primary residential or small site stormwater BMP's:

- Rain Gardens (provided they have suitable soils). It is important that they drain out in 24 hours.
- Pervious Pavement
- Green Roofs
- Dry Wells
- Vegetated Swales or any area that will hold the water and allow it to infiltrate or filtrate

Recommended primary commercial or large site stormwater BMP's:

- Wet Ponds
- Dry Ponds
- Green Roofs
- Pervious Pavement
- Infiltration areas (Rain Gardens, Infiltration Swales, etc)

Some of the most effective stormwater BMPs are listed above. Keep in mind that the key to BMP selection is your site conditions. Conditions that most often determine the BMP selected are as follows:

- **Soils:** infiltration being the primary means in a residential site requires granular soils; many parts of the city are either situated in areas with clay deposits or areas that were once wetlands. Both of these situations are not conducive to an infiltration area.
- **Existing grades:** Water flows down hill. If the only green space you have is at the back of your lot and that is the high point, you are going to have a hard time. Conversely if you have a low area in the back yard, with a little work you can probably direct a significant amount of water to it.
- **Climate:** A BMP needs to be able to survive a Minnesota winter and be ready to perform for those early April showers. Our typical rain events coupled with our climate make BMP selection in Minnesota unique.
- **Land Use:** A pond can be an amenity or an eyesore. The BMP should compliment your site or property.

Notes:

- Many sites are utilizing underground detention as a means for treating or storing water. While effective, the large initial cost and the long-term maintenance costs can make them fairly cost-prohibitive.
- Oil grit separators (sump manholes, grit chambers, manufactured BMP's) do not provide any significant water quality and are discouraged.
- Pavement reduction, Shared Parking and re-vegetation of hard surface areas while not defined as a credit BMP will reduce the impervious nature of the site and go towards lowering the fees charged to the property.

- Rain Barrels are a sustainable practice that has gained favor during the last several years. While they can provide for some limited water quality and rate control, they are not considered a viable BMP for quality or control credits. Outside of permitting for purposes of a credit, we neither encourage nor discourage their installation for the following reasons:
    1. Roof top water is fairly clean and removal of any contaminants would require that you hold the water on the level of one barrel per 15 sq ft of roof top.
    2. Any real quantity reduction would require at least as many barrels as needed for quality which is not practical in an urban setting.
    3. Rain barrels can be used for watering and when connected to a soak line can water areas slowly long after the rain event has occurred.

Stormwater Utility Fact Sheet # 2 Rates and methods

Sewer Rate

- The sewer rental rate applicable inside the City of Minneapolis is **two dollars and eleven cents ($2.11)** per one hundred (100) cubic feet.
- The minimum sewer rental rate shall be two dollars ($2.00) per month.

Stormwater Rate

- The stormwater charge will be applied against properties on and after March 1, 2005, and the Equivalent Stormwater Unit (ESU) rate is **nine dollars and seventeen cents ($9.17)**. The ESU measurement is 1,530 square feet of impervious area.

Single-Family Residential Developed Properties

- **High – 1.2 ESU $11.46,** greater than one thousand five hundred and seventy-eight (1,578) square feet of estimated impervious area.

- **Medium – 1.00 ESU,** equal to or greater than one thousand four hundred eighty-five (1,485) square feet and less than or equal to one thousand five hundred seventy-eight (1,578) square feet of estimated impervious area.

- **Low – .75 ESU $6.88,** less than one thousand four hundred eighty-five (1,485) square feet of estimated impervious area.

All Other Properties

- (Gross Lot Size in sq. ft. X Runoff Coefficient) / 1,530 sq ft = # of ESU

LAND USE	Coefficient Applied
Bar- Restaurant - Entertainment	.75
Car Sales Lot	.95
Cemetery with Monuments	.20
Central Business District	1.00
Garage or Miscellaneous Residential	.55
Group Residence	.75
Industrial - Warehouse - Factory	.90
Industrial Railway	.85
Institution - School - Church	.90
Miscellaneous - Commercial	.90
ixed Commercial – Residential - Apartment	.75
Multi-Family Apartment	.75
Multi-Family Residential	.75
Office	.91
Parks & Playgrounds	.20
Public Accommodations	.91
Retail	.91
Single Family Attached	.75
Sport or Recreational Facility	.20
Utility	.90
Vacant Land Use	.20
Vehicle Related Use	.90

The City of Minneapolis Stormwater Utility Fee

Frequently Asked Questions

What is Stormwater?

Stormwater is runoff from a rainstorm or melting snow. City landscapes - unlike forests, wetlands, and grasslands that trap water and allow it to filter slowly into the ground - contain great areas of impermeable asphalt and concrete surfaces that prevent water from seeping into the ground. Because of this, large amounts of water accumulate above the surface. This water will run off before eventually entering into our lakes, rivers and streams.

Why is it important to manage stormwater?

Minneapolis, like other communities, needs to manage stormwater to protect people's homes and properties, the environment, lakes, streams, rivers. If this is not done, stormwater will cause flooding, pooling, erosion and pollution. Heavy rains that flood streets and yards can result in property damage. Stormwater runoff also picks up pollutants and debris from streets, parking lots, yards carries them into our streams, rivers and lakes.

What is the new stormwater utility fee on my bill?

The stormwater utility fee pays for the City's current stormwater system and annual maintenance costs. This helps to prevent and correct stormwater runoff problems throughout Minneapolis. All properties within the city limits, with very limited exceptions, are charged a monthly stormwater utility fee. This fee had existed in the past, but had been included as part of the combined sanitary sewer/stormwater fee. These are distinctly separate services with unrelated expenses. The new structure of the two services now have separate line items and fee structures. This new system will help to better track these two separate areas.

Why did the City of Minneapolis create a stormwater utility fee?

The City of Minneapolis sought a more accurate way to charge customers for stormwater management. The stormwater utility fee divides stormwater fees fairly among owners of developed and undeveloped properties. That way, each one only pays for the estimated demand that each property would place on the system. The City of Minneapolis joins other Minnesota cities, including Saint Paul, Rochester, Duluth, Bloomington, Richfield and Brooklyn Park, in having a stormwater billing rate.

How does the City's new stormwater credit program encourage helpful environmental practices?

The new stormwater fee incorporates opportunities for property owners to reduce their stormwater bill by taking environmentally friendly steps. Stormwater utility fee reductions, also called credits, are available to those who are using or installing stormwater management tools/practices on their properties. Installing rain gardens or other materials, such as impervious pavers, allows stormwater to soak into the ground, rather than run into storm sewers.

How can I get a stormwater credit on my utility bill?

Credit guidelines and application forms can be found on the on the City of Minneapolis stormwater website. If you need additional information, please contact 612-673-1114.

What does the new stormwater utility fee mean for Minneapolis utility bill payers?

Before March 2005, stormwater fees were included in sewer fees. Sewer fees were based on the amount of running water used from sinks, showers, toilets, sprinklers, etc. This did not accurately account for stormwater. This new system divides the sewer/stormwater fee into two separate fees (sewer and stormwater). The sewer portion is reduced to reflect only the amount of sewer services (running water) used, while the stormwater charge is calculated separately.

Will my bill go up?

Your bill could go up, but it could also go down. The answer is entirely dependent on two factors:

- How much water the property uses
- The size of the property

Large properties that were low sewer users in the past will see substantial increases. Example of this could include:

- Commercial properties
- Retail properties
- Industrial properties
- Warehouses
- Parking lots

Properties that were high water users in the past on reasonably sized parcels will likely see a decrease in their bill. Example of this could include:

- Apartment buildings
- Laundromats
- Downtown restaurants

Single family homes with large families will likely see a small decrease. Single family homes with one or two occupants will likely see a small increase.

How will this affect the City's utility billing revenue?

The utility fee is revenue neutral as the sewer rates are being decreased from $3.64 per unit to $2.00 per sewer unit. Revenue neutral means that the City is not receiving additional monies because of this policy change. The City is merely changing the way it collects it's sewer revenue. This new rate reduces existing sewer fees collected by nearly 30 million dollars. The new stormwater utility rate offsets this reduction to recover this loss, resulting in no net gain.

Is this just another tax?

No. The stormwater utility fee is a user fee. Although the fee is a cost to property owners, it is not a tax on the value of the property. **The stormwater utility fee is collected to pay or defray current costs associated with stormwater management in Minneapolis.** This would be similar to the City collecting fees to handle and manage solid waste.

Why are churches and other tax-exempt properties required to pay?

All properties contribute to the City's need to manage stormwater. Because of this, all property owners must share in the cost of this program.

Minneapolis property owners that have impervious areas area must pay for stormwater management service, regardless of ownership or tax status. This includes non-profit entities such as churches, schools and institutions, as well as properties owned by the City of Minneapolis, the State of Minnesota, as well as the federal government.

What is impervious area: Surfaces where water can not flow through freely.

Examples of impervious surfaces include, but are not limited to the following:

- House footprints
- Driveways
- Sidewalks
- Patios
- Decks
- Detached garages
- Sheds
- Concrete air conditioner pads
- Brick pavers

It also includes all non-improved (vegetated or grass cover) areas that are used for parking storage or are driven upon. In an urban environment such as Minneapolis, a property's impervious area is the most significant factor affecting both stormwater quality and quantity.

How is the stormwater fee calculated?

The stormwater utility fee is charged on a per unit basis. Each ESU (**E**quivalent **S**tormwater **U**nit) is 1,530 square feet of impervious area on a property. The impervious area was calculated based on the size of the property, as well as the current use. Single family properties are billed using one of the following rates:

High	1.25 ESU	$11.46
Medium	1.00 ESU	$9.17
Low	.75 ESU	$6.88

All other properties are billed as follows: (Gross Lot Size in square ft. X Runoff Coefficient) / 1,530 square ft = # of ESU's

CITY OF MINNEAPOLIS
PUBLIC WORKS DEPARTMENT
Street Maintenance Division
Standard Operating Procedure for Vehicle Related Spills (VRS)
October 12, 2001

The purpose of this document is to provide detailed standard operating procedures for the clean up of VRS sites and the management/disposal of the impacted spill debris.

DEFINITION of TERMS:

MPCA: Minnesota Pollution Control Agency

MEM: Minneapolis Environmental Management (also historically known as Minneapolis Pollution Control)

MSMD: Minneapolis (Public Works) Street Maintenance Division

VRM: Vehicle Related Material: Petroleum products or other vehicle fluids that are inherently related to vehicular operations. This does not include materials that are being transported by a vehicle, unless the material is clearly labeled as being one of the aforementioned products.

VT: Volumetric Threshold: Minnesota has a 5 gallon minimum quantity for reporting petroleum spills. Spill of all other chemical or material in any quantity is reportable.

Spill debris: Sand that has been placed to absorb VRM and subsequently recovered for disposal.

Scenario Number 1: MPCA informs MEM of a VRS

The driver of a vehicle involved in a spill is responsible for notifying the MPCA Duty Officer, if the VT is exceeded. The Duty Officer will immediately notify the MPCA Emergency Response Unit. If the spill is of the size and nature that the Emergency Response Unit determines should be handled by MEM, the MPCA will notify MEM and provide them with the details relating to the spill incident. The MEM representative will make a determination based on the information provided by the MPCA on how to proceed, and if appropriate (typically VRM in manageable quantities), contacts MSMD.

The MSMD will dispatch personnel with appropriate equipment to apply sand to the spill site. The sand will be given a period of time in which to absorb the VRM. The sand (spill debris) will then be removed by means of a street sweeper, and deposited at the established disposal site in a designated VRM spill debris pile. If a secondary sanding is required, the procedure will remain the same.

Since the volume of the spill is greater than 5 gallons, a Hazardous Material Spill Data form (see Appendix A) must be completed as soon as possible (i.e. within 24 hours or the next business day). The completed form will be sent to the MEM as soon as possible. A final report on the action(s) taken will be sent to the MPCA from MEM.

Spill Debris Pile Management

Arrangements for disposal of the spill debris pile will be a collaborative effort by the MSMD and the Engineering Laboratory. As the spill debris pile reaches a size that becomes difficult to manage within the boundaries of the disposal site, the Engineering Laboratory will be contacted. The spill debris pile will be mechanically blended and the Laboratory will select representative samples for laboratory analysis, as required by MPCA regulations. The sampling and testing will require approximately one week to complete. After receiving the laboratory analysis data, the spill debris will be disposed of in a manner pre-approved by the MPCA and the Minneapolis Procurement Division.

Scenario Number II: The MSMD discovers a VRS

MSMD personnel discover a spill or are informed of a potential VRM spill from sources other than MEM or MPCA. After arriving at the scene, they will determine whether the incident is a VRM spill, (possibly from a vehicle collision, a spill from a labeled container, etc.) and will determine if the volume of the spill is greater than the VT (5 gallons).

- Less than 5 gallons: If the spill quantity is judged to be less than 5 gallons, no contact with MEM is necessary. Sand will be applied and the procedure will continue as described in Scenario I (i.e. subsequent sanding/sweeping and stockpiling into the spill debris pile). A Hazardous Materials Spill Data form must be completed for record and documentation purposes and retained at MSMD, but is not to be sent to MEM.

- 5 gallons or more: If the MSMD representative determines that a volume of 5 gallons or more of VRM has been spilled, MSMD must contact MEM or MPCA. The same procedures for clean up and reporting (using the Hazardous Material Spill Data form) as in Scenario I will be followed. This form must be sent to MEM.

For both cases, the disposal of the VRM spill debris pile is as detailed in Scenario I.

Potential Modification to Scenario I and II

Regulatory officials may require separate stockpiling of spill debris from specific spill incidents. Separate sampling and laboratory analysis will be required in these cases. This may also be requested to create a distinct tracking mechanism of a given spill of significant quantities and/or from a billable source. This scenario will be determined on a case-by-case basis. The process for disposal will be the same as previous scenarios.

Scenario Number III: The MSMD becomes aware of a spill of unknown material or composition

The MSMD shall contact MEM before taking any action to clean up a spill of unknown composition. MEM will manage these spills through their contracts with private entities specializing in these activities, or manage and coordinate the cleanup with the MSMD. If MEM cannot be contacted, the MPCA Duty Officer should be contacted immediately.

ADDITIONAL INFORMATION

1. Currently the disposal site for spill debris is at the Linden Yard site. The material shall be placed in two 20 cubic-yard leak-proof roll-off containers with a counter-balanced lockable lids at the City Site.

2. List of Potential Contacts:

- **Minnesota Pollution Control Agency (MPCA)**
  Duty Officer: 651-649-5451; 24 hours a day, seven days a week
- **Minneapolis Environmental Management (MEM**)
  Roger VanTassel: 685-8531 (work)
  Tom Frame: 673-5807 (work)
  Emergency after-hours contacts:
  Bill Anderson: 651-646-0704
  Tom Frame: 612-754-0762
  Roger VanTassel: 612-942-5217
- **Engineering Laboratory**
  Kevin Danen: 673-5627 (work)
  Joe Klejwa: 673-5608 (work)
  Paul Urseth: 673-5622 (work)
- **Minneapolis Street Maintenance Division (MSMD)**
  Steve Collin: 673-5720 (work)
  Greg Kolinski: 673-5720 (work)
  24 hours a day, seven days a week: 673-5720

3. MSMD will be responsible for any billing of outside parties for services rendered for the clean up/disposal of a spill event. The MSMD, MEM and the Engineering Laboratory will develop a system for tracking cost associated with these operations. This information will be distributed, as it becomes available.

4. This is a statement of policies and procedures, which will be revised and updated, as new information becomes available.

CITY OF MINNEAPOLIS - STREET DEPARTMENT

OIL AND HAZARDOUS MATERIAL SPILL DATA

DATE OF REPORT	TIME OF REPORT	NAME & ADDRESS OF RESPONSIBLE PARTY
DATE OF INCIDENT	TIME OF INCIDENT	
TYPE OF POLLUTANT	QUANTITY	CAUSE OF SPILL
PRECISE LOCATION		PERSON MAKING REPORT/PHONE NUMBER
AREAS AFFECTED		PARTY REPORTING SPILL TO STREET DEPT.
PROBABLE FLOW DIRECTION	SOIL TYPE	OTHERS CONTACTED: MPLS. PCA_____ MN PCA_____ FIRE DEPT_____ POLICE_____ OTHER_____
WATERS POTENTIALLY AFFECTED		
EFFECTS OF SPILL/ IMMEDIATE DANGER TO HUMAN LIFE, PROPERTY		PROXIMITY OF WELLS, SEWER, BASEMENTS
ACTION TAKEN TO DATE		IS THIS FIRST NOTICE REGARDING SPILL?
CONTAINMENT OF SPILL		WHO SHOULD BE CONTACTED FOR FURTHER INFORMATION? PHONE NO.
CLEAN-UP TO DATE: MATERIAL USED_____ LOADER USED_____ TRUCKS USED_____ PICK-UP TRUCK USED_____ MACHINE SWEEPER USED_____ LABOR: FOREMAN HOURS_____ SR. MAINT. MAN_____ JR. MAINT. MAN_____ OTHER_____		COMMENTS?

ORIGINAL: When job completed, send immediately to Street Accounting.
COPY 1 : Send to Street Accounting with daily time when labor/eq. first used.
COPY 2 : PCA NOTIFICATION COPY - send immediately(first available interoffice mailing) to Tom Frame, Mpls Env.Services. PHC Room 400.

LABOR COST $_____
EQUIP COST $_____
MAT'L COST $_____
TOTAL COST $_____

June, 2004

SPECIFICATION FOR DISPOSAL OF SPILL DEBRIS FROM VEHICLE RELATED SPILLS

City of Minneapolis
Department of Public Works

DEFINITIONS:

- **VRM:** Vehicle Related Material: Petroleum products and other vehicle fluids that are inherently related to vehicular operations. This does not include materials that are being transported by a vehicle, unless the material is clearly labeled as being one of the aforementioned products.

- **SPILL DEBRIS:** Sand that has been placed to absorb VRM and subsequently recovered for disposal.

- **CONTRACT PERIOD:** The contract period shall be from July 1, 2004 to June 30, 2007.

SCOPE:

These specifications cover the loading, transportation and disposal of spill debris from a central site located within the City of Minneapolis. The "Contractor" for the purposes of this specification, refers to a permitted landfill facility that has been approved by the appropriate regulatory agencies.

GENERAL:

The City of Minneapolis expects to generate an estimated 500 cubic yards of spill debris during the contract period. This quantity is only an estimate of the City's requirement for said contract period, and may be increased or reduced in any amount without any adjustment in unit price. The primary source of this material is from the results of clean-up operations following vehicular collisions or accidental discharge from vehicles.

The spill debris will consist primarily of sand used to absorb VRM from City streets, as well as plastic sheeting used during the storage process. The Contractor will be required to transport and dispose of all such materials that have been stored at the City facility. The only acceptable disposal method for the spill debris shall be placement into or used as daily cover at a certified and fully permitted landfill facility.

SCOPE OF SERVICES:

The Contractor shall:

- Provide two (2) 20 cubic-yard leak-proof roll-off containers with a counter-balanced lockable lid for the duration of the contract period at the City of Minneapolis Linden Yard Site, or any other designated site within the City of Minneapolis. The City of Minneapolis will provide Contractor access to this container throughout the contract period.
- When a container is filled with spill debris, the City of Minneapolis will mechanically blend the material in the container and perform sampling and laboratory analysis in accordance with Minnesota Pollution Control Agency Guidance Documents. Any additional analyses required by the Contractor shall be stated in the proposal.
- The City of Minneapolis will forward all pertinent analytical laboratory results to the Contractor.
- The Contractor shall state in the proposal, the length of time needed, following receipt of the laboratory test results, before the full container is transported to the Contractors facility.

- The City of Minneapolis will contact the Contractor, once a roll-off container is full and sampling/ analyses has begun. It shall be the responsibility of the Contractor to provide a replacement container for subsequent and interim spill debris storage. There must be, at all times, adequate space in a container available for the storage of spill debris at the City of Minneapolis facility.

The Contractor shall obtain all proper permits and manifests for the loading, transporting, and disposal of the spill debris. The contractor shall load and haul all such material to an approved disposal site. The disposal method shall be approved by the appropriate regulatory agency(s). The Contractor shall provide documentation of all required approvals to the City of Minneapolis prior to acceptance of the material. The Contractor shall also provide the City with any and all documentation required by regulatory agencies, following the disposal of the spill debris.

CONTENT OF PROPOSALS:

The following required information shall accompany each bid:

- Location of landfill site.
- Cost per ton of material for disposal, utilizing the aforementioned 20 cubic-yard roll-off containers.
- Cost per ton of material for disposal when the material is stockpiled without the use of a roll-off container. (Minimum stockpile being 10 tons)
- The cost per ton for Superfund/CERCLA indemnification (include limits).
- Cost per day for two (2) 20 cubic-yard leak-proof roll-off containers with a counter-balanced lockable lid at the Minneapolis site.
- Cost for the option, at the sole discretion of the city, of extending this agreement for each of two additional years.
- List of subcontractors and functions.
- Qualification and experience of Contractor and all subcontractors

The bid will be based on a per ton (2000 pound) basis, which will include all transportation, permitting and regulatory cost. All loads shall be weighed on scales certified by the State of Minnesota

GENERAL TERMS AND CONDITIONS:

The following are the general terms and conditions, supplemental to those contained elsewhere in these specifications, which responding Contractors must comply with in order to be consistent with the requirements for the specification. Any deviation from these or any other stated requirements must be listed as exceptions on the bid sheet.

Once the bid forms are submitted in response to these specifications, they become the property of the City of Minneapolis, whether or not the bid is accepted. The City shall have the right to use any ideas presented in any bid submitted.

Representatives of the City of Minneapolis will review all bids received. An interview may be part of the evaluation process. Factors, upon which the proposal will be judged include, but are not limited to, the following:

- Residual risk to the City of Minneapolis following disposal.
- Expressed understanding of the project objective.
- Cost of disposal.
- Project work plan, including level of detail.
- Qualification of both the Contractors assigned personnel, and subcontractors.

CITY'S RIGHTS:

The City reserves the right to reject any or all proposals or parts of proposals, to accept part or all of proposal on the basis considerations other than lowest cost, and to create a project of lesser or greater expense and reimbursement that described in this proposal, or the respondent's reply

based on the component prices submitted. The City also reserves the right to cancel the Agreement without penalty, if circumstances arise which prevent the City from completing the project. In addition, the City reserves the right to re-bid for any phase of this work.

HOLD HARMLESS:

The Contractor agrees to defend, indemnify and hold harmless the City, its officer and employees, from any liabilities, claims, damages, costs, judgments, and expenses, including attorney's fees, resulting directly or indirectly from an act or omission of the contractor, it's employees, agents or employees of subcontractors, in the performance of this contract or by reason of the failure of the contractor to fully perform, in any respect, all of its obligation under this contract.

The City agrees to defend and hold harmless insofar as the law allows the Contractor, its officers and employees, from any liabilities, claims, damages, cost, judgements, and expenses, including attorney's fees, resulting directly or indirectly from an act or omission of the City or its employees in the performance under this contract or by reason of the failure of the city to fully perform its obligations under this contract.

INTEREST OF MEMBERS OF CITY:

The Contractor represents and agrees that no member of the governing body, officer, employee or agency of the City has any interest, financial or otherwise, direct or indirect, in the Agreement.

EQUAL OPPORTUNITY STATEMENT:

Contractor agrees to comply with the provisions of all applicable federal, state and City of Minneapolis statutes, ordinances and regulations pertaining to civil rights and nondiscrimination including without limitation Minnesota Statute, Section 181.59 and Chapter 363 and Minneapolis code of Ordinances, Chapter 139, incorporated herein by reference.

AFFIRMATIVE ACTION:

Persons who are authorized to enter into contractual relationships with the City are encouraged to review the City's policies on Affirmative Action.

NON-DISCRIMINATION:

The Contractor will not discriminate against any employee or applicant for employment because of race, color, creed, religion, ancestry, sex, national origin, affectional preference, disability, age, marital status or status regard to public assistance or as a disabled veteran or veteran of the Vietnam era. Such prohibition against discrimination shall include, but no limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and section for training, including apprenticeship.

The Contractor shall agree to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the City, setting forth this nondiscrimination clause. In addition, the Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment with regard to race, creed, religion, ancestry, sex, national origin, affectional preference, disability, age, marital status or status wit regard to public assistance or status as a disabled veteran or veteran of the Vietnam era, and comply in all other aspects with the requirements of the Minneapolis Code, Chapter 139.

CONTRACT INCORPORATION OF PROPOSAL CONTENTS:

The contents of the proposal and any clarifications or modification to the contract thereof submitted by the successful proposer may, at the City's option, become part of the Agreement obligation and be incorporated by reference into the ensuing contract.

INSURANCE:

This agreement shall be effective only upon the approval by the City of acceptable evidence of the insurance detailed below. Such insurance secured by the Contractor shall be issued by insurance companies acceptable to the City and admitted in Minnesota. The insurance specified may be in a policy or policies of insurance, primary or excess. Such insurance shall be in force on the date of the execution of the agreement and shall remain continuously in force for the duration of the contract period.

The Contractor and its subcontractors shall secure and maintain the following insurance:

a) Worker's Compensation insurance that meets the statutory obligations with Coverage B – Employer's Liability limits of at least $100,000 each accident, $500,000 disease – policy limit and $100,000 disease each employee.

b) Commercial General Liability insurance with limits of at least $500,000 general aggregate, $500,000 products – completed operations $500,000 personal and advertising injury, $500,000 each occurrence $50,000 fire damage, and $5,000 medical expense any one person. The policy shall be on an "occurrence" basis, shall include contractual liability coverage and the City shall be named an additional insured.

c) Commercial Automobile Liability insurance covering all owned, non-owned and hired automobiles with limits of at least $500,000 per accident.

Acceptance of the insurance by the City shall not relieve, limit or decrease the liability of the Contractor. Any policy deductible or retention shall be the responsibility of the Contractor. The Contractor shall control any special unusual hazards and be responsible for any damages that result from those hazards. The City does not represent that the insurance requirements are sufficient to protect the Contractor's interest or provide adequate coverage.

Evidence of coverage is to be provided on a City provided Certificate or Insurance. A thirty- (30) day written notice is required if the policy is canceled, not renewed or materially changed.

The Contractor shall require all of its subcontractors to comply with this provision.

The Contractor shall not assign any interest in the Agreement, and shall not transfer any interest in the same (whether by assignment or novation) without the prior written approval of the City, provided, however, that claims for money due or to become due to the contractor may be assigned to a bank, trust company or other financial institution, or to a Trustee in Bankruptcy without such approval. Notice to any such assignment or transfer shall be furnished promptly to the City.

COMPLIANCE REQUIREMENTS

All Contractors hired by the City of Minneapolis are required to abide by the regulations of the Americans with Disabilities Act of 1990 (ADA) which prohibits discrimination against individuals with disabilities. The Contractor will not discriminate against any employee or applicant for employment because their disability and will take affirmative action to insure that all employment practices are free from such discrimination. Such employment practices include but are not limited to the following: Hiring, promotion, demotion, transfer, recruitment, or recruitment advertising, layoff, discharge, compensation and fringe benefits, classification referral and training. The ADA also requires contractor associated with the City of Minneapolis to provide qualified applicants and employees with disabilities with reasonable accommodations that do not impose undue hardship. Contractors also agree to post in conspicuous areas accessible to employees and applicants, notices of their policy on nondiscrimination.

In the event the Contractor's noncompliance with the nondiscrimination clauses of this agreement, this agreement may be cancelled, terminated, or suspended, in whole or part, and the Contractor may be declared ineligible by the Minneapolis City Council from any further participation in City contracts in addition to other remedies as provided by law.

2005 Grit Chamber Maintenance Report

ID	Location	Date Inspected	Date Cleaned	Sediment Removed (CY)
1	UPTON AVE N & 53RD AVE N	8/23/2005	8/23/2005	3
2	RUSSELL AVE N & 53RD AVE N	9/19/2005	9/19/2005	2
3	SHERIDAN AVE N, N OF 52ND AVE N	7/22/2005	7/22/2005	8
4	RUSSELL AVE N NORTH OF 52ND AVE N	8/2/2005	8/2/2005	1
5	PENN AVE N & 52ND AVE N	8/1/2005	8/1/2005	3
6	PENN AVE N & 52ND AVE N	8/1/2005	8/1/2005	3
7	OLIVER AVE N & 52ND AVE N	8/1/2005	8/1/2005	3
8	NEWTON AVE N & SHINGLE CREEK	8/2/2005	8/2/2005	2
9	OLIVER AVE N & 51ST AVE N	8/2/2005	8/2/2005	5
10	MORGAN AVE N & 51ST AVE N	8/2/2005	8/2/2005	2
11	KNOX AVE N & 51ST AVE N	7/25/2005	7/25/2005	7
12	KNOX AVE N & 50TH AVE N	6/15/2005	6/17/2005	18
13	IRVING AVE N & 50TH AVE N	8/12/2005	8/12/2005	2
14	JAMES AVE N, NORTH OF 49TH AVE N	8/2/2005	8/2/2005	0.5
15	21ST AVE N & 1ST ST N	7/27/2005	7/29/2005	25

ID	Location	Date Inspected	Date Cleaned	Sediment Removed (CY)
16	XERXES AVE N & 14TH AVE N			
		8/3/2005	8/16/2005	22
17	XERXES AVE N & GLENWOOD AVE			
		7/25/2005	7/25/2005	8
18	MORGAN AVE N & CHESNUT AVE			
		7/13/2005	7/13/2005	10
19	GIRARD AVE NO & CURRIE AVE NO			
		8/4/2005	8/4/2005	20
21	LAKE OF THE ISLES PKWY & LOGAN AVE			
		9/6/2005	9/8/2005	14
22	W 22ND ST & JAMES AVE S (this is two chambe			
		8/3/2005	8/3/2005	8
23	YARD SUMPS, 26TH & HIAWATHA			
		7/12/2005	7/12/2005	3
24	DREW AVE S & W LAKE ST			
		8/4/2005	8/4/2005	3
25	EXCELSIOR BLVD & MARKET PL			
		8/4/2005	8/8/2005	9
26	W LAKE ST & ALDRICH AVE S			
		8/9/2005	8/9/2005	42
28	W 33RD ST & HOLMES			
		8/17/2005	8/17/2005	5
29	W 33RD ST & GIRARD AVE S			
		8/19/2005	8/22/2005	3
30	YORK AVE S & W LAKE CALHOUN PARKWAY			
		7/13/2005	7/13/2005	6
31	CHOWEN AVE S & W 41ST ST			
		8/27/2005	8/31/2005	9
33	E 43RD ST & PARK AVE S			
		6/16/2005	6/20/2005	14
34	W 44TH ST & LAKE HARRIET PARKWAY			
		8/15/2005	8/15/2005	10

ID	Location	Date Inspected	Date Cleaned	Sediment Removed (CY)
35	E 44TH ST & OAKLAND AVE S			
		6/30/2005	6/30/2005	0.5
36	E 46TH ST & 31ST AVE S			
		4/18/2005	4/18/2005	4
		9/12/2005	9/13/2005	2
38	W 47TH ST & YORK AVE S			
		7/19/2005	7/19/2005	0.5
39	W 47TH ST & WASHBURN AVE S			
		8/21/2005	8/25/2005	2
40	W 47TH ST & LAKE HARRIET PARKWAY			
		8/11/2005	8/15/2005	3
41	W 48TH ST & YORK AVE S			
		7/19/2005	7/19/2005	0.5
42	QUEEN AVE S & LAKE HARRIET PKWY			
		8/30/2005	8/31/2005	24
43	16TH AVE S & E MINNEHAHA PKWY			
		7/22/2005	7/22/2005	8
44	SHERIDAN AVE S & W 50TH ST			
		7/25/2005	7/25/2005	3
45	JAMES AVE S & MINNEHAHA CREEK			
		9/1/2005	9/1/2005	5
46	MORGAN AVE S & W 53RD ST			
		7/27/2005	7/28/2005	10
48	E 56TH ST & PORTLAND AVE S			
		7/6/2005	7/27/2005	3
51	GIRARD AVE S BETWEEN W 59TH ST & W 60T			
		6/6/2005	6/6/2005	3
52	E 59TH ST & 12TH AVE S			
		6/13/2005	6/23/2005	7
		9/12/2005	9/13/2005	2
53	GIRARD AVE S & W 60TH ST			
		6/6/2005	6/6/2005	1

ID	Location	Date Inspected	Date Cleaned	Sediment Removed (CY)
54	GIRARD AVE S, W 60TH ST - DUPONT AVE S			
		8/10/2005	8/10/2005	18
55	GRASS LAKE TERRACE, GIRARD TO JAMES A			
		8/11/2005	8/15/2005	6
56	GRASS LAKE SERVICE ROAD BEHIND #6035 J			
		8/21/2005	8/25/2005	2
61	E RIVER RD & CECIL ST			
		3/28/2005	3/28/2005	5
		9/12/2005	9/13/2005	14
		10/25/2005	11/1/2005	12
62	HIAWATHA PARK REFECTORY TURN-A-ROUN			
		6/6/2005	6/7/2005	1
		8/9/2005	8/9/2005	0.5
65	SOUTH TRANSFER STATION			
		7/12/2005	7/12/2005	2
		9/12/2005	9/15/2005	5
72	S OF 37TH AVE NE & ST ANTHONY PKWY			
		3/28/2005	5/6/2005	16
73	4552 KNOX AVE N (IN ALLEY BEHIND)			
		8/2/2005	8/2/2005	0.5
76	MARKET PLAZA & EXCELSIOR BLVD			
		8/22/2005	8/24/2005	18
77	ALLEY - 38TH TO 39TH ST & NICOLLET TO BL			
		7/25/2005	7/26/2005	0.75
78	SHINGLE CREEK WETLAND - W SIDE			
		7/20/2005	7/21/2005	10
79	SHINGLE CREEK WETLAND - EAST SIDE			
		7/15/2005	7/19/2005	25
80	WOODLAWN BLVD & E 50TH ST			
		4/6/2005	4/18/2005	1
		9/6/2005	9/9/2005	4
81	WOODLAWN BLVD & E 53RD ST			

ID	Location	Date Inspected	Date Cleaned	Sediment Removed (CY)
		6/6/2005	6/7/2005	
82	12TH AVE S & POWDERHORN TERRACE			
		6/1/2005	6/2/2005	
83	13TH AVE S & POWDERHORN TERRACE			
		9/6/2005	9/6/2005	6
84	3421 15TH AVE S (180' W OF CL)			
		9/6/2005	9/6/2005	6
85	3329 14TH AVE S			
		6/1/2005	6/2/2005	0.5
86	13TH AVE S & E 35TH ST			
		6/1/2005	6/2/2005	4
		9/7/2005	9/8/2005	6
87	3318 10TH AVE S			
		9/6/2005	9/9/2005	5
88	ACROSS THE STREET FROM 702, NO. BD. VA			
		7/5/2005	7/5/2005	0.25
89	ACROSS THE STREET FROM 706, NO. BD. VA			
		7/5/2005	7/5/2005	0.5
90	10TH AVE. NO. & ALDRICH AVE. NO. (S.W.C.)			
		7/7/2005	7/7/2005	3
91	SO. BD. VAN WHITE BLVD., 200' SO. OF 8TH A			
		7/12/2005	7/12/2005	2
92	ACROSS THE STREET FROM 701, SO. BD. VA			
		7/8/2005	7/8/2005	7
93	SO. BD. VAN WHITE BLVD., 250' SO. OF 10TH			
		7/8/2005	7/8/2005	7
94	10TH AVE. NO. & NO. BD. VAN WHITE BLVD. (S			
		7/12/2005	7/12/2005	6
95	WEST SIDE OF ALDRICH AVE. NO. & 9TH AVE.			
		7/7/2005	7/7/2005	6
96	8TH AVE. NO. & NO. BD. VAN WHITE BLVD. (N.			
		7/6/2005	7/6/2005	4

ID	Location	Date Inspected	Date Cleaned	Sediment Removed (CY)
97	29TH AVE. & LOGAN AVE. - NO. STORM WATE			
		7/1/2005	7/5/2005	20
98	MALMQUIST LN. & HUMBOLDT NO.			
		6/6/2005	6/6/2005	7
99	SHINGLE CREEK DR. & HUMBOLDT NO.			
		6/6/2005	6/7/2005	7
100	SO. OF 49TH AVE. NO. & HUMBOLDT NO.			
		6/7/2005	6/14/2005	28
101	NO. OF 49TH AVE. NO. & HUMBOLDT NO.			
		10/26/2005	10/28/2005	7
110	W. CALHOUND PARKWAY 100' NO. OF RICHFI			
		8/24/2005	8/25/2005	2
112	W. 36TH ST. 30' W. OF CALHOUN PARKWAY			
		8/24/2005	8/25/2005	2

2005 Outfall Inspection Report

Outfall ID	*Location*	*Date*	*Maintenance Required (Y/N)*	*Comments*
10-640	W River Pkwy at E Lake St	5/9/2005	no	
10-650	W River Pkwy at E 32nd St	5/9/2005	yes	15" corrigated pipe - bottom is rotting out
10-660	W River Pkwy at E 33rd St	5/9/2005	no	
10-710	W River Pkwy 250' S of E 46th St	5/9/2005	no	
10-720	W of Minnehaha Ave at joining of Minnehaha Creek and Mississippi River	5/9/2005	no	
10-700	W River Pkwy at E 44th St	5/10/2005	no	
10-670	W River Pkwy at E 36th St	5/10/2005	no	
10-680	W River Pkwy at E 38th St	5/10/2005	no	
10-690	W River Pkwy at E 42nd St	5/10/2005	no	
70-395	E M' haha Pkwy at 12th Av S (n bank)	5/11/2005	no	
64-110	Elliot Av S (extended) S side of Hwy 62	5/11/2005	no	
70-390	E M' haha Pkwy at 12th Av S (s bank)	5/11/2005	no	
10-420	W River Rd and 11th Ave S (pipe extended to River)	6/6/2005	no	brush in the river

Outfall ID	Location	Date	Maintenance Required (Y/N)	Comments
10-012	N end of Nicollet Island in channel	6/6/2005	no	
10-560B	26th Ave SE Bridal Vail Creek Tunnel	6/6/2005	yes	wall falling at outfall. bridge work to be done in 2006 and outfall will be repaired at that time.
10-510	West River Road @ 27th Ave S (extended)	6/6/2005	no	
10-500	W River Rd approx 1000' e of 5th St S	6/6/2005	no	
10-465	West River Pkwy @ RR Bridge	6/6/2005	no	
10-440	Approx 20' E of 35W bridge across Miss R, N bank	6/6/2005	no	
10-430	Btwn 35W and 10th Ave SE bridges approx 70' from 35 W bridge on S bank	6/6/2005	no	brush in the river
10-410	2nd Ave S at Chicago Ave S (extended to River along Chicago)	6/6/2005	no	brush & floatables
10-400	Approx 100' N along River bank from 10-410	6/6/2005	no	
10-390	3rd Ave SE	6/6/2005	no	
10-150	Marshall St NE (Lowry Ave NE)	6/6/2005	no	logs & brush in the river at the location of the outfall
10-130	27th Ave NE (Monroe St NE)	6/6/2005	no	
10-035	W side of Nicollet Island; Island Ave and Grove St at River	6/6/2005	no	
10-540	West River Road @ I-94	6/6/2005	no	

Outfall ID	Location	Date	Maintenance Required (Y/N)	Comments
10-060	St. Anthony Pkwy & 36th Ave NE	6/6/2005	no	
10-560A	E River Rd @ I-94 (S of bridge)	6/7/2005	no	
10-520	U of M Outfall	6/7/2005	no	
10-530	Oak St SE	6/7/2005	no	
20-010	52nd Ave N and Sheridan Ave N (extended)	7/11/2005	yes	bottom needs cement, r-bars exposed, & grate 1/2 blocked with garbage
20-012	53rd Ave N and Russell Ave N (extended)	7/11/2005	yes	pipe half full of leaves and garbage
20-013	52nd Ave N and Russell Ave N (extended)	7/11/2005	no	
20-020	Penn Ave N and 52nd Ave N	7/11/2005	no	
20-030	52nd Ave N (Penn Av N)	7/11/2005	no	
52-070	Cedar Lake Pkwy @ Drew Ave S (extended)	7/12/2005	no	good shape - checked cb's & centerwell also
52-120	Cedar Lake Pkwy @ West Franklin Av	7/12/2005	no	good shape
52-110	Cedar Lake Pkwy @ West 22nd St	7/12/2005	no	good shape
52-080	Cedar Lake Pkwy @ Ewing Av S (extended	7/12/2005	no	good shape - checked cb's & centerwell also
52-060	Cedar Lake Pkwy @ Chowen (extended)	7/12/2005	no	good shape - checked cb's & centerwell also

Outfall ID	Location	Date	Maintenance Required (Y/N)	Comments
52-030	Park Lane - 500' North of Burnham Road	7/12/2005	no	across from pump house
52-020	Burnham Road @ Kenilworth Lagoon	7/12/2005	no	located next to pump house
52-050	Cedar Lake Pkwy @ Depot	7/12/2005	no	good shape
52-100	Cedar Lake Pkwy @ West 24th St	7/12/2005	no	good shape
40-130	Morgan Av N (N of Bassett Creek)	7/13/2005	yes	cleaned grate
10-580	Seymour Ave SE	7/18/2005	no	
70-375	E M ' haha Pkwy at Chicago Av S (s bank)	7/18/2005	no	
70-370	E M ' haha Pkwy at Chicago Av S (n bank)	7/18/2005	no	was repaired this year with a new corrigated pipe at the outlet
70-365	E M ' haha Pkwy at Columbus Av S (s bank)	7/18/2005	no	
20-140	47th Ave N (Shingle Crk Pkwy)	7/18/2005	no	
20-120	49th Ave N (Humboldt Ave N)	7/18/2005	no	
10-600	Cecil St SE	7/18/2005	no	
10-460	Approx 230' S of RR bridge across from 10-465	7/18/2005	no	
70-380	E M' haha Pkwy at 11th Av S (s bank)	7/18/2005	no	

Outfall ID	Location	Date	Maintenance Required (Y/N)	Comments
70-400	E 50th St at 13th Av S (s bank)	7/18/2005	no	
10-620	E River Rd south of St Anthony Ave--E City Limits	7/18/2005	no	
70-410	E 49th St at 16th Av S (south bank)	7/18/2005	no	
70-415	E M' haha Pkwy at 16th Av S (north bank)	7/18/2005	no	
70-405	E 50th St at Bloomington Av S (south bank)	7/18/2005	no	recently repaired with a new corrigated pipe
20-160	Malmquist Ln	7/18/2005	no	
70-420	E M' haha Pkwy at 18th Av S (south bank)	7/18/2005	no	
70-425	E M' haha Pkwy at Cedar Av S (north bank)	7/18/2005	no	
70-430	E M' haha Pkwy 1/2 mi. E of Longfellow Av (w bank)	7/18/2005	no	
70-435	E M' haha Pkwy 1/2 mi. E of Longfellow Av (e bank)	7/18/2005	no	
70-440	47th St E (extended) 1/2 mi. E Longfellow Av	7/18/2005	no	
70-465	30th Av S 500' N of E M ' haha Pkwy (s bank)	7/19/2005	yes	pvc pipe separating from corrigated pipe and needs to be reset. Also, connect collar and maybe rip rap.
70-470	30th Av S 500' S of E 46th St (n bank)	7/19/2005	yes	9" clay tile pipe is separated at the joint and needs to be reset and have rip rap placed around the pipe
70-460	29th Av S 500' S of 46th St E (n bank)	7/19/2005	no	

Outfall ID	Location	Date	Maintenance Required (Y/N)	Comments
70-455	29th Av S 500' N E M' haha Pkwy (s bank)	7/19/2005	no	
70-445	28th Av S @ W 47th St (s bank)	7/19/2005	no	
10-110	Dowling Ave N (At River)	7/19/2005	no	
70-450	28th Av S 500' S of 46th St E (n bank)	7/19/2005	no	
70-495	32nd Av S @ E 46th St	7/20/2005	yes	corrigated pipe is rotted out from the bike path to the swamp
70-475	Nokomis Av 200' S of 46th St (n bank)	7/20/2005	no	
70-480	31st Av S @ E 46th St (n bank)	7/20/2005	no	
70-485	E 31st St 600' N of 47th St (s bank)	7/20/2005	no	
70-490	31st Av S @ E 46th St (s bank)	7/20/2005	no	
70-500	32nd Av S 250' N of E M' haha Pkwy (s bank)	7/20/2005	no	
70-510	32nd Av S 300' N of E M' haha Pkwy (s bank)	7/20/2005	no	
70-515	33rd Av S '250' NE of E M' haha Pkwy (s bank)	7/20/2005	no	
70-505	E 47th St 200' W of 32nd Av S	7/20/2005	yes	pipe is separated at the joint, is settled, and needs rip rap
70-520	34th Av S '150 N of E M' haha Pkwy (s bank)	7/21/2005	no	

Outfall ID	Location	Date	Maintenance Required (Y/N)	Comments
20-070	Knox Ave N	7/25/2005	no	
40-020	Xerxes Ave N (S of T.H. 55)	7/25/2005	no	
20-080	50th Ave N (Knox Ave N)	7/25/2005	no	
54-100	W. Calhoun Pwky at W. 36th St	7/27/2005	no	
54-090	W. Calhoun Pwky approx. '250' S. of W 36th St	7/27/2005	no	
54-070	W. Calhoun Pkwy at Vincent Av S	7/27/2005	yes	sand needs to be dredged in front of the outlet
54-080	W. Calhoun Pwky at Xerxes Av S	7/27/2005	yes	sand needs to be dredged in front of the outlet
40-010	14th Ave N @ Xerxes Ave N	7/29/2005	no	
40-120	Newton Av N (S of Bassett Creek)	7/29/2005	yes	pipes are separated and sinking and there is a cave-in by the railroad tracks.
51-030	From St Louis Park--South edge of Brownie Lake	8/2/2005	no	
51-010	North edge of Brownie Lake	8/2/2005	yes	spillway undermined, cracked, deteriorated, & exposed
81-010	Wirth Pkwy @ S side of Birch Pond	8/8/2005	no	
10-240	West Broadway	8/24/2005	no	
10-290	Plymouth Ave N	8/24/2005	no	

Outfall ID	Location	Date	Maintenance Required (Y/N)	Comments
40-400	Bassett Creek outlet to Mississippi River	8/24/2005	no	
10-230	21st Ave N	8/31/2005	no	
10-220	22nd Ave N	8/31/2005	yes	invert of the outlet is deteriorating with exposed rebar
51-020	Cedar Lake Road - 250' SW of Lake View	9/19/2005	no	
10-260	17th Ave N	9/21/2005	no	
10-280	14th Ave (extended)	9/21/2005	no	
70-165	W 48th St @ Humboldt Av S	10/17/2005	no	under water
70-135	Irving Av S @ W 51st St	10/17/2005	no	under water
70-130	James Av S @ N Bank of Creek	10/17/2005	no	udner water
70-125	Knox Av S @ W M' haha Pkwy (south)	10/17/2005	no	under water
70-190	Humboldt Av S @ W M ' haha Pkwy (west bank)	10/17/2005	no	no repair needed, but the corrigated pipe is rusted out in the creek
70-185	W 51st St @ Humboldt Av S	10/17/2005	no	
70-170	W 49th St @ W M'haha Pkwy	10/17/2005	no	udner water
70-155	Humboldt Av S '50' N of W 49th St	10/17/2005	no	always under water

Outfall ID	Location	Date	Maintenance Required (Y/N)	Comments
70-140	Humboldt Av S @ N Bank of Creek	10/17/2005	no	heavy flow
70-180	W M 'haha Pkwy 400' S of W 50th St	10/17/2005	no	outfall inside of pipe is under 50th
70-375	E M ' haha Pkwy at Chicago Av S (s bank)	10/18/2005	no	
70-355	E M ' haha Pkwy at Park Av S (s bank)	10/18/2005	no	
70-360	E M ' haha Pkwy at Park Av S (s bank)	10/18/2005	no	
70-365	E M ' haha Pkwy at Columbus Av S (s bank)	10/18/2005	no	
70-370	E M ' haha Pkwy at Chicago Av S (n bank)	10/18/2005	no	
75-005	Highway 62 @ SW shore of Wetland	11/5/2005	no	
82-020	15th Av S 300' S of E 34th St	11/5/2005	no	

Annual Report Initiative:

The following is a proposed initiative to produce an annual Sewer Maintenance Report. The focus of the report will be to establish an annual reporting of Department activities aimed at the following:

- Respond to the reporting requirements of the NPDES Stormwater Runoff Permit
- Measure/monitor the Department's annual performance and efficiencies.
- Communicate/ report on the Department's short and long term maintenance plans.

The report will be broken down into several key categories, these being the following:

1. Introduction – Demographics and description of the Sewer System.
2. Financial Report – Funding and cost data referencing the amount expended to perform the functions categorized in the report, both in whole and by individual route area. Charts and data indicating that year's efficiencies on the major reported maintenance tasks.
3. Accomplishments – Listing of completed system upgrades, major repairs and enacted policy/procedural initiatives.
4. Grit Chambers - Information related to the management of the Department's grit chamber system (i.e. completed inspections and cleaning).
5. Holding Ponds – Information related to the management of the Department's holding pond facilities (i.e. completed inspections and cleaning).
6. Outlets – Information related to the inspection and evaluation of the Department's outlet structures.
7. Pipelines & Tunnels – Information related to the management of the Department's mainline storm and sanitary sewer system. This section would contain data referencing the amount of sewer line that was televised, jet washed, vacuum-cleaned, disked, and cured-in-place lined.
8. Pump Stations – Information related to the management of the Department's pump station facilities. This section would contain annual inspection data.
9. Proposed Repair/ Maintenance – List of planned/proposed (both short and long-term) maintenance and repair projects.

Department Standard Operating Procedures:

Grit Chambers:

- Grit Chamber maintenance responsibilities will be tied to maintenance personnel routes that coincide with the locations of the grit chambers.
- Grit Chambers will be inspected 2 times per year. These inspections will take place May 1 – June 1 and Oct 1 to Nov 1. A single form will be established covering both inspection and cleaning.
- Grit Chamber inspections will log the date of the inspection, and depth of the material inside the structure. Notable defects will also be listed on the inspection form.
- Grit Chambers will be cleaned annually, (except in cases where the historical annual build-up has been identified as being less than 60% of the grit chambers total volume). Grit chamber cleaning will be conducted with 80% of them being completed by June 30, and the remaining 20% completed by November 30.

Holding Ponds:

- Holding Ponds will be inspected as part of the ongoing maintenance.
- Once every two years an inspection form will be completed. The inspection form will report any notable defects, and repair needs.
- Once every two years the depth of sediment in storage ponds and wetland ponds will be measured and reported on the inspection form.

Outlets:

- Outlet maintenance responsibilities will be tied to area routes for which they are located.
- Inspections will be made on a 5-year rotation basis. In turn this requires that 20% (by number) of the outlets within a single route area to be inspected yearly.
- Annual inspections will consist of completing an inspection form, reporting identified erosion and structural deficiencies. Inspectors will note observed discharge abnormalities and if deemed appropriate, reported to the Environmental Inspections Office.

Pipelines/Tunnels/ Pumping Stations:

- Mainline maintenance responsibilities will be tied to maintenance personnel routes that coincide with the locations of the mainline.
- Tunnels, pumping station maintenance and televising responsibilities will be tied to the department's management personnel.
- Sewer lines will be televised on a 15-year rotation cycle, and moving towards a 10-year cycle.
- Sewer lines will be jet-washed every 3 years.
- Pump stations will be inspected annually
- Routine tunnel inspection will not be assigned; a complete tunnel inventory and assessment study is already underway. The eventual result of this report will dictate the Department’s inspection needs for storm and sanitary sewer tunnels.

Stormwater Education Program
Program budget 2006-2010

	2006	2007	2008	2009	2010
MWMO Multicultural Study Customize worldview and key behavior outreach effort Develop a strategic plan for an outreach program and a framework design for other communities					
MWMO Multicultural Study Total	**$10,000.00**				
MPRB Public Outreach Activities Staff will provide stormwater education at neighborhood events Staff will participate in two-three community events per week Provide stormwater education programs for citizens along the rivers Partner w/MPRB and Hamline CGEE to provide multi-lingual 'Water-down-the-drain' electronic kiosks					
MPRB Public Outreach Activities Total	**$36,000.00**				
MPRB Stormwater BMP monitoring	**$155,000.00**				
CUE Minneapolis Blooms Program Rain Garden Educational Workshops Affordable On-Site Consultation for Rain Gardens Utility Bill Educational Inserts Provide tips about correct boulevard garden design and sponsor local events					
CUE Minneapolis Blooms Program Total	**$29,000.00**				
FMR Storm Drain Stenciling Identify and organize approximately volunteers to stencil storm drains Distribute educational door hangers to residences and businesses Organize public community workshops designed to increase understanding of urban runoff issues and alt lawn/garden care techniques. Provide outreach to non-English speaking communities Submit final report					
FMR Storm Drain Stenciling Total	**$13,700.00**				
Green Institute Lead a pilot project to: Identify four neighborhood org, business assoc, or other commercial/industrial property owners Work with property owner and other stakeholders within group Provide SW Education and Utility Fee outreach to non-residential entitites					
Green Institute Total	**$15,000.00**				
Public Works Staff & Administration Stormwater Program Development					
Public Works Staff & Administration Total	**$61,320.32**				
TOTAL	**$320,020.32**	**$329,620.93**	**$339,509.56**	**$349,694.84**	**$360,185.69**

NPDES Storm Water Permit
Monitoring Budget

		QUANTITY	UNIT COST	FRINGE	EXTENSION	2006	2007	2008	2009	2010
labor										
water quality specialists		1,400	$24.46	$7.43	$44,646.00					
environmental intern		250	$12.21	$4.03	$4,060.00					
environmental coordinator		400	$28.02	$8.67	$14,676.00					
environmental manager		25	$45.81	$15.12	$1,523.25					
	subtotal					*$64,905.25*	$66,852.41	$68,857.98	$70,923.72	$73,051.43
equipment and supplies						$26,500.00	$27,295.00	$28,113.85	$28,957.27	$29,825.98
lab analyses						$15,500.00	$15,965.00	$16,443.95	$16,937.27	$17,445.39
				TOTAL		**$106,905.3**	**$110,112.41**	**$113,415.78**	**$116,818.25**	**$120,322.8**
Monitoring Manual Update (2007 only)										
water quality specialist		80	$24.46	$7.43	$2,551.20					
environmental coordinator		15	$28.02	$8.67	$550.35					
				TOTAL			**$3,101.55**			
	STORM WATER MONITORING PROGRAM SUBTOTAL					**$106,905.3**	**$113,213.96**	**$113,415.78**	**$116,818.25**	**$120,322.8**
	Program Contingency			10%		$10,690.53	$11,321.40	$11,341.58	$11,681.83	$12,032.28
	STORM WATER MONITORING PROGRAM TOTAL					**$117,595.78**	**$124,535.35**	**$124,757.36**	**$128,500.08**	**$132,355.1**
		MPRB		**25%**		**$29,398.94**	**$31,133.84**	**$31,189.34**	**$32,125.02**	**$33,088.77**
		MPLS		**75%**		**$88,196.83**	**$93,401.51**	**$93,568.02**	**$96,375.06**	**$99,266.31**

Environmental Services NPDES historical and 2005 costs and 5-Yr Budget

Year	FTEs	Wages	Fringe	Total
2002	4	$ 451,612.09	$ 95,180.69	$ 546,792.78
2003	4	$ 488,762.14	$ 108,377.35	$ 597,139.49
2004	4.5	$ 486,472.38	$ 117,106.73	$ 603,579.11
2005	5.5	$ 482,104.89	$ 125,205.51	$ 607,310.40
2006	5.5	$ 580,066.00	$ 163,966.00	$ 744,032.00
2007	5.5	$ 591,667.32	$ 118,333.46	$ 710,000.78
2008	5.5	$ 603,500.67	$ 120,700.13	$ 724,200.80
2009	5.5	$ 615,570.68	$ 123,114.14	$ 738,684.82
2010	5.5	$ 627,882.09	$ 125,576.42	$ 753,458.51

2002, 2003, 2004, & 2005 are actual expenditures
2006 wage and fringe is budgetary allocation
2007, 2008, 2009 & 2010 wages assume 2% rate increase
2007, 2008, 2009 & 2010 fringe assumes 20% of wage
Fringe is assumed to be 20% of wage
Costs not included: contractual services, operating costs, equipment, education, training and general fund overheads
Costs include: labor, administrative, and fringes
Full time employees work includes addressing water quality issues.

Street Maintenance 2005 Costs and 5-Yr Budget

(NPDES activities: Roadways and Illicit Discharges)

Code	Activity	2005 Actual	2006 Budget	2007 Budget	2008 Budget	2009 Budget	2010 Budget
C05	Spring Clean-up	1,281,171	1,237,043	1,274,154	1,312,379	1,312,379	1,351,750
C10	Summer Sweeping	607,899	629,941	648,840	668,305	668,305	688,354
C15	Fall Clean-up	1,410,869	1,464,930	1,508,878	1,554,144	1,554,144	1,600,768
C20	Storm Water Activity	135,717	231,236	238,173	245,318	245,318	252,678
C25	Sweep Loop & Bus Dist	221,682	224,416	231,148	238,083	238,083	245,225
C45	Misc. Street Sweep	66,597	66,931	68,939	71,008	71,008	73,138
C55	Clean Paved Cntr Islnd	18,688	21,722	22,373	23,045	23,045	23,736
K45	WFU- Sweeping	382,023	395,288	407,147	419,361	419,361	431,942
	Subtotal	4,124,646	4,271,508	4,399,653	4,531,642	4,531,642	4,667,592
D05	Mach. Sweep Alleys	204,091	223,474	230,178	237,084	237,084	244,196
	Subtotal	204,091	223,474	230,178	237,084	237,084	244,196
I05	Clean CB's & Drains	106,993	113,636	117,045	120,556	120,556	124,173
I25	Flood Control	0	0	0	0	0	0
	Subtotal	106,993	113,636	117,045	120,556	120,556	124,173
J09	Special Events	40,756	46,619	48,017	49,458	49,458	50,942
J10	Misc. (storms)	124,012	120,414	124,027	127,747	127,747	131,580
J15	Waste Disposal	394,412	464,000	477,920	492,257	492,257	507,025
J20	Dump Maint.	164,381	161,887	166,744	171,746	171,746	176,899
A01	Supervision	93,653	96,173	99,058	102,030	102,030	105,091
A09	Work Comp Claims	100,776	112,626	116,005	119,485	119,485	123,070
A08	HVSL (JV from Admin.)	271,615	229,763	236,656	243,756	243,756	251,069
A30	Misc. Expense	48,163	77,418	79,740	82,133	82,133	84,597
	Other Tasks	250,857	230,304	237,213	244,330	244,330	251,659
	Subtotal	1,488,626	1,539,205	1,585,381	1,632,942	1,632,942	1,681,931
	TOTAL	**5,924,356**	**6,147,822**	**6,332,257**	**6,522,224**	**6,522,224**	**6,717,891**
	Percent change from prev. year	25%	-6%	3%	3%	3%	3%

2005 NPDES Related Cost and 5-Year Budget

Sewer Department

Storm Drain Operation and Control	2005	2006	2007	2008	2009	2010
Maintenance						
CIPP Lining Storm	$ 6,202.22	$ 6,410.00	$ 6,624.73	$ 6,846.66	$ 7,071.91	$ 7,284.06
Storm Drain Cleaning	$ 246,451.10	$ 254,707.22	$ 263,239.91	$ 272,058.45	$ 281,035.91	289,466.98
Storm MSA	$ 100,337.68	$ 103,699.00	$ 107,172.91	$ 110,763.21	$ 114,418.17	117,850
Storm CSA	$ 101,145.75	$ 104,534.13	$ 108,036.03	$ 111,655.23	$ 115,339.61	118,799.79
Storm STH	$ 11,292.27	$ 11,670.57	$ 12,061.53	$ 12,465.59	$ 12,876.34	13,262.63
Minor Repair	$ 98,550.45	$ 101,851.89	$ 105,263.93	$ 108,790.27	$ 112,380.07	115,751.47
Major Repair	$ 5,179.41	$ 5,352.92	$ 5,532.24	$ 5,717.57	$ 5,905.66	6,082.82
Park Board Storm	$ 36,344.97	$ 37,562.53	$ 38,820.88	$ 40,121.38	$ 41,444.99	42,688.33
	$ 605,503.87	**$ 625,788.25**	**$ 646,752.16**	**$ 668,418.35**	**$ 690,472.66**	**711,186.08**
Construction						
	$ 2,165,473.39	**$ 2,238,016.75**	**$ 2,312,990.31**	**$ 2,390,475.48**	**$ 2,469,361.00**	2,543,441.80
Storm Drain Operation and Control Total	**$ 2,770,977.26**	**$ 2,863,805.00**	**$ 2,959,742.46**	**$ 3,058,893.84**	**$ 3,159,833.60**	**3,254,627.80**
Structural Controls Maintenance and Operation						
Maintenance						
Grit Chambers	$ 51,192.24	$ 52,907.18	$ 54,679.57	$ 56,511.33	$ 58,375.86	60,127.13
Outfalls	$ 7,140.42	$ 7,379.62	$ 7,626.84	$ 7,882.34	$ 8,142.45	8,386.72
Pump Stations	$ 139,893.30	$ 144,579.72	$ 149,423.14	$ 154,428.82	$ 159,524.97	164,311.00
Holding Ponds	$ 179,196.21	$ 185,199.28	$ 191,403.46	$ 197,815.48	$ 204,343.39	210,473.69
	$ 377,422.16	**$ 390,065.80**	**$ 403,133.01**	**$ 416,637.96**	**$ 430,386.67**	**443,298.41**
Construction						
	$ 2,687,981.28	**$ 2,778,028.65**	**$ 2,871,092.61**	**$ 2,967,274.21**	**$ 3,065,194.20**	3,157,150.00
Structural Controls Maintenance and Operation Total	**$ 3,065,403.44**	**$ 3,168,094.45**	**$ 3,274,225.62**	**$ 3,383,912.17**	**$ 3,495,580.80**	**3,600,448.40**
Disposal Of Removed Substances Included in above costs						
Illicit Discharges and Improper Disposal Included in above costs						

Engineering Services 2005 NPDES costs and 5-Yr Budgets

Rollup Number : NPDES

Job Number	Job Description	2005 Actuals	2006	2007	2008	2009	2010
V. New Developments and Construction							
6005SITE	SITE PLAN REVIEW	166,922	171,929	177,087	182,400	187,872	193,508
6005Q001	EROSION CONTROL	26,791	27,595	28,423	29,276	30,154	31,059
600D4262	STORM WATER MGMT PLAN & ORD.	103,830	106,945	110,153	113,458	116,862	120,368
600D4270	UNDERGROUND UTILITY PERMITS	15,459	15,923	16,401	16,893	17,400	17,922
	Sub-Total	**313,003**	**322,393**	**332,064**	**342,026**	**352,287**	**362,856**
XIII. Coordination with Other Governmental Entities							
6005Q006	BASSETT CREEK WMO	28,808	29,672	30,562	31,479	32,424	33,396
6005Q007	SHINGLE CREEK WMO	22,101	22,764	23,447	24,150	24,874	25,621
6005Q008	MISSISSIPPI WMO	725	747	769	792	816	840
6005Q009	MINNEHAHA CREEK WATERSHED DIST	14,329	14,759	15,202	15,658	16,128	16,611
6005Q014	MINNEAPOLIS WATER PLAN	65,963	67,942	69,980	72,080	74,242	76,469
	Sub-Total	**131,926**	**135,884**	**139,960**	**144,159**	**148,484**	**152,938**
Overall Program Administration and Reporting							
6005Q012	STORMWATER PERMIT MISC PERMITS	68,631	70,690	72,811	74,995	77,245	79,562
6005Q003	RAINGAUGE MONITORING	6,533	6,729	6,931	7,139	7,353	7,574
600D4359	EPA	377	389	400	412	425	438
600D4355	STORMWATER UTILITY FEE STUDY	129,095	132,968	136,957	141,066	145,297	149,656
600D4356	XPSWMM STORM WATER MODELING	86,802	89,406	92,088	94,851	97,696	100,627
6005Q002	STORMWATER MONITORING	3,734	3,846	3,961	4,080	4,202	4,328
6005Q010	MISC CSO	3,778	3,891	4,008	4,128	4,252	4,380
6005Q011	MISC CHAIN OF LAKES	34,566	35,603	36,671	37,772	38,905	40,072
6005Q013	PAKRBOARD SANITARY & STORM INV	667	687	708	729	751	774
600D4226	ALLEY DRAINAGE COMPLAINTS	1,051	1,083	1,115	1,149	1,183	1,218
600D4234	1997 FLOODING PROBLEMS - CITY	8,157	8,402	8,654	8,913	9,181	9,456
600D4235/Q005	STORMWATER EDUCATION	59,534	61,320	63,160	65,055	67,006	69,017
	Sub-Total	**343,392**	**415,014**	**427,464**	**440,288**	**453,497**	**467,102**
	Total Cost	**788,320**	**873,290**	**899,489**	**926,473**	**954,267**	**982,895**

Flood Mitigation Program 2005 Costs and 5-Yr Budget

PROJECT DESCRIPTION	2005 Expenditures	2006 Appropriation	2007 Appropriation	2008 Appropriation	2009 Appropriation	2010 Appropriation
Flood Area 1 - 42nd Ave N. & Russell Ave N.	$2,282,833	$390,502	$0	$0	$0	$0
Flood Area 5 (Crystal Lake New Storm Drain)	$0	$0	$0	$0	$0	$0
Flood Area 8	$0	$0	$0	$0	$0	$0
Flood Area 14	$0	$0	$0	$0	$0	$0
Flood Area 18	$149,209	$0	$0	$0	$0	$0
Flood Area 19	$3,157,708	$0	$0	$0	$0	$0
Flood Area 21/22	$0	$0	$2,749,948	$389,000	$2,446,059	$7,280,742
Flood Area 24 - 24W 45th & Lyndale Ave	$54,272	$0	$0	$0	$0	$0
Flood Area 25	$0	$0	$0	$0	$0	$0
Flood Area 27 - Lake Hiawatha New Storm Drain PS57	$2,203,203	$391	$0	$0	$0	$0
Flood Area 29	$26,794	$0	$0	$0	$0	$0
Flood Area 30	$0	$0	$0	$0	$0	$0
Flood Area 33*	$0	$0	$0	$0	$0	$0
Flood Area 38*	$0	$0	$0	$0	$0	$0
Flood Area 39	$0	$0	$0	$0	$0	$0
Alternative Storm Water Management Strategies	$25,000	$500,000	$500,000	$500,000	$500,000	$500,000
FUND 7300 SEWER CAPITAL TOTALS:	**$7,899,020**	**$390,893**	**$3,249,948**	**$889,000**	**$2,946,059**	**$7,780,742**

** Alternative Funding*