# 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** |

Appendix A1 - Storm Drainage Areas by Receiving Water Body
Source: Minneapolis Public Works - Engineering Services

# 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 STORMWATER RUNOFF

| | 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 | √ | | √ | | | | | | | | √ | | √ | | | |
| Cadmium | √ | | √ | | √ | | √ | | | | | | √ | | √ | |
| Chromium | | | √ | | | | | √ | √ | | | | √ | | | |
| Copper | | | √ | | | | √ | | √ | | | | √ | | | |
| Lead | | √ | √ | | √ | | | | √ | | | | √ | | √ | |
| Mercury | √ | | | | | | √ | | √ | | √ | | √ | | √ | |
| Nickel | √ | √ | | | | √ | | | | | | | √ | | √ | |
| Selenium | √ | | | | | | | | √ | | √ | | √ | √ | √ | |
| Silver | | | √ | | | | | | | | √ | | √ | | | |
| Thallium | | | | | | | √ | | | | √ | | √ | | √ | |
| Zinc | | | √ | √ | √ | | | | √ | | | | √ | | | |
| Cyanide | | √ | √ | √ | | | | | | | | | | | | |
| Phenols | | | | | | ? | | √ | | √ | | | | | | |

## SOURCES OF POLLUTANTS IN STORMWATER RUNOFF

| | 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 Kjeldahl Nitrogen | | | | | | | √ | | | | | √ | | √ | √ | √ |
| Nitrate + Nitrite | | √ | | | | | √ | | | | √ | √ | √ | √ | √ | √ |
| Total Ammonia and Organic Nitrogen | | | | | | | √ | | | | | √ | | √ | √ | √ |
| Total Residual Chlorine | | | √ | √ | | | | | | √ | | √ | √ | | √ | |

EDITOR'S NOTE: This document has been adapted from Section 23 of the Minneapolis Park & Recreation Board's *2006 Water Resources Report*. The complete versions of these annual reports can be found at the following website:
http://www.minneapolisparks.org/default.asp?PageID=791

# 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 Elimination 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. In 2006 one new recreational/parkland site was selected due to land use changes at the previous recreational/parkland site. The new sites were chosen 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

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 (22nd/Aldrich) and 8a (Pershing Park) were installed on 5/2/06 and 5/12/06, respectively. Sites 7 (14th and Park) and 9 (61st/Lyndale) were installed on 5/3/06.

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

### Monitored Parameters

In 2006 storm event samples were collected from May through December. One snowmelt grab sample was collected in February from sites 6, 7 and 9 and in March from site 8a. 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 in 2006 are given in Table 23B along with the percentage sampled per season. For detailed information on sampling events see Table 23C (below). Multiple bacteria grab samples were taken throughout the season. All required sampling was successfully accomplished in 2006.

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

| | SD006 | SD007 | SD008 (2005) | SD008a | SD009 |
|---|---|---|---|---|---|
| Location | 22nd St. and Aldrich Ave. | E. 14th St. and Park Ave. S. | Kenwood Pkwy- north end of Parade Stadium | Pershing Field east of 49th St. and Chowen Ave. | 335 ft east of 61st St. and Harriet Ave. |
| Land Use | Multi-Family Residential | Commercial/Industrial/ High Rise Residential | Recreational/ Parkland | Recreational/ Parkland | Commercial/ Industrial |
| Area (acres) | 8.9 | 13.1 | 1.9 | 2.5 | 34.9 |
| Pipe Diameter (inches) | 18 | 42 | 18 | 10 | 36 |
| Outfall ID# | 10-430J | 10-430D | 10-430J | 57-100A/B | 71-070 |

**Table 23B. NPDES site volume totals for the sampling period 5/8/06-10/16/06.**

| | Site 6 | Site 7 | Site 8a | Site 9 |
|---|---|---|---|---|
| **Total volume of sampled events (cf)** | 71,938 | 290,366 | 49,107 | 370,522 |
| **Total volume recorded for 2006 (cf)** | 92,307 | 454,172 | 76,765 | 809,659 |
| **% sampled ANNUAL (April- November)** | 78% | 64% | 64% | 46% |
| **% sampled SPRING (April- June)** | 29% | 29% | 8% | 7% |
| **% sampled SUMMER (July- September)** | 49% | 34% | 56% | 38% |
| **% sampled FALL (October- November)** | 0.3% | 0.3% | 0.0% | 0.9% |

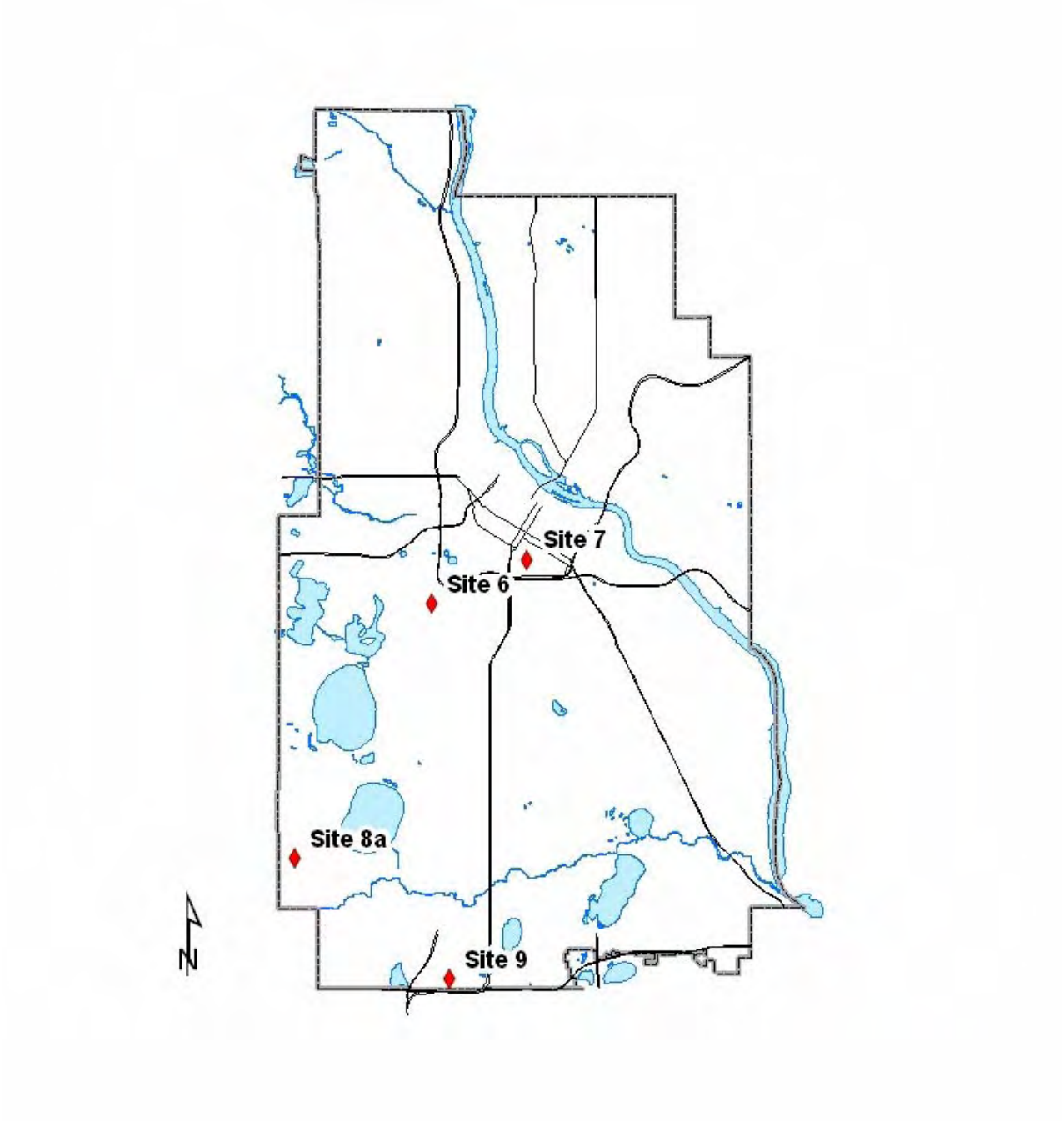


**Figure 23A. Map of the 2006 NPDES sites located in Minneapolis, MN.**

**Table 23C. Precipitation event data and samples collected for NDPES sites in 2006. 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/Time | End Date/Time | Precip (inches) | Duration (hours) | Intensity (in/hr) | Sample Type | 2006 NPDES Events Collected | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Site 6 22nd/Aldrich | Site 7 14th/Park | Site 8a Pershing | Site 9 61st/Lyndale |
| 1 | 2/2/2006, n/a | 2/2/2006, n/a | n/a | n/a | n/a | grab+ | X | X | | X |
| 2 | 3/28/2006 13:15 | 3/28/2006 13:15 | n/a | n/a | n/a | grab+ | | | X | |
| 3 | 5/8/2006 9:45 | 5/8/2006 21:50 | 0.57 | 12 | 0.05 | composite | X | X | | X |
| 4 | 5/12/2006 3:35 | 5/13/2006 3:10 | 0.63 | 24 | 0.03 | grab | X(Fecal only) | X(Fecal only) | | X(Fecal only) |
| 5 | 5/24/2006 16:20 | 5/25/2006 20:30 | 0.18 | 28 | 0.01 | composite | | X | | |
| 6 | 6/5/2006 18:05 | 6/6/2006 1:45 | 0.40 | 8 | 0.05 | composite | | | | X |
| 7 | 6/16/2006 16:50 | 6/16/2006 23:20 | 1.95 | 6.5 | 0.30 | composite | X(Lmtd) | X(Lmtd) | X(Lmtd) | |
| 8 | 6/25/2006 4:00 | 6/25/2006 6:20 | 0.28 | 2.5 | 0.11 | composite | | | X(Lmtd) | |
| 9 | 7/13/2006 20:15 | 7/14/2006 1:10 | 0.30 | 5 | 0.06 | composite | | X(Lmtd) | | X(Lmtd) |
| 10 | 7/16/2006 5:40 | 7/16/2006 9:45 | 0.41 | 4 | 0.10 | composite | X | X | | |
| 11 | 7/19/2006 8:30 | 7/19/2006 16:50 | 0.56 | 8.5 | 0.07 | composite | X | X | | X |
| 12 | 7/24/2006 16:00 | 7/24/2006 17:25 | 1.73 | 1.5 | 1.15 | composite | X | | X | X |
| 13 | 8/1/2006 0:15 | 8/1/2006 5:15 | 0.16 | 5 | 0.03 | composite | X | | | X(Fecal only) |
| 14 | 8/1/2006 9:55 | 8/2/2006 6:05 | 3.58 | 20 | 0.18 | composite | X | X | X | X |
| 15 | 8/10/2006 16:40 | 8/10/2006 18:30 | 0.49 | 2 | 0.25 | composite | | | X | |
| 16 | 8/13/2006 9:40 | 8/13/2006 16:25 | 0.50 | 6 | 0.08 | composite | | | X | |
| 17 | 8/23/2006 3:00 | 8/23/2006 8:00 | 0.92 | 5 | 0.18 | composite | | | X | |
| 18 | 8/24/2006 9:35 | 8/24/2006 18:20 | 1.55 | 9 | 0.17 | composite | | | X | |
| 19 | 9/15/2006 23:50 | 9/16/2006 8:15 | 0.32 | 8 | 0.04 | composite | | | | X(Lmtd) |
| 20 | 9/21/2006 11:05 | 9/22/2006 18:40 | 0.88 | 31 | 0.03 | composite | X (w/Fecal) | X(w/Fecal) | X(Lmtd) | X |
| 21 | 10/16/2006 4:20 | 10/16/2006 16:20 | 0.21 | 12 | 0.02 | composite | X(Lmtd) | X(Lmtd) | | X(Lmtd, w/Fecal) |
| 22 | 11/28/2006 1:55 | 11/28/2006 11:25 | 0.74 | 10 | 0.07 | grab | X(Fecal only) | X(Lmtd) | X(w/Fecal) | X(w/Fecal) |
| 23 | 12/11/2006 17:35 | 12/12/2006 6:15 | 0.17 | 13.75 | 0.01 | grab | X | X(Fecal only) | | X(w/Fecal) |
| | | **Totals** | **16.53** | | | | **9** | **7** | **8** | **9** |

[+]snowmelt event
n/a= not applicable
X(Lmtd) = event sampled but with limited parameters e.g.sample was >24hrs old, cBOD, TDP, and F. Coli generally were not sampled.
X(w/Fecal) = event sampled with fecal coliform.
X(Fecal only) = Only fecal coliform sampled.

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, 2006. BOD is biochemical oxygen demand. The 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 collected from grab samples (spring, summer and fall).**

| Parameter | Abbreviation | Units | Sample Type |
|---|---|---|---|
| BOD –carbonaceous, 5 Day | cBOD | mg/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 (3X year) |
| 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 (3X year) |
| 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 |

**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 |
| 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 | 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 | 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 12/4/06. 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. All analytes 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 28, Quality Assurance 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).

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(below). In 2006, where flow was sufficient, F. coli grab samples were collected eighteen times at the NPDES sites, Table 23F.

In 2006, limited parameters were collected twelve times, Table 23C (above). These data were collected after 24 hours and expired parameters were dropped (e.g. cBOD, TDP).

Due to a significant land use change at Site 8 in late summer 2005, a new site was chosen for 2006. The Site 8 land use was dramatically changed from ball fields to impervious artificial turf. This necessitated a new site being chosen for 2006 at Pershing Park. The new site, 8a, is similar in size and has a recreational parkland land use, Table 23A (above).

Data with questionable usability were underlined. In 2006, three records were flagged. The May TKN data failed the blind monthly performance standard and are marked suspect, but the data were still used because the values were deemed reasonable. Further quality assurance protocols can be found in Section 28 [of the Minneapolis Park & Recreation Board 2006 Water Resources Report, which can be found at the following website: http://www.minneapolisparks.org/default.asp?PageID=791 ].

Table 23G(above) lists the statistical calculations for all measured parameters. Many parameters fluctuate with season. Typically, maximums for most parameters were reached during snowmelt and spring, e.g. TP, NH3, NO2NO3, Cl, TSS, TDS and Zn. Some parameters peaked in fall, e.g. TP, TDP, NO2NO3 and BOD. This was probably due to snowmelt accumulations and leaf litter, respectively.

The event on 6/6/06 also showed increased concentrations for some parameters (TP, TDP, NH3 and NO2NO3) which is most likely due to the lack of rain for an extended period of time. The last event prior to 6/5/06 was less than two weeks prior and was on 5/24/06. The last event prior to 7/14/06 was 6/25/06, which could have also allowed a large accumulation of nutrients and pollutants between storms, (TP, TKN, NH3, NO2NO3, TSS and TDS).

Peak phosphorus levels during snowmelt were probably due to an accumulation of animal, lawn, and leaf litter waste in late fall and atmospheric deposition during winter months. The

maximum TP of 1.63 mg/L at Site 6 was on 10/16/06. Most snowmelt samples were brown to dark brown and very turbid except Site 8a which was relatively clear. This is most likely due to the filtering effect of the parkland. High Cl concentrations are typical for stormwater runoff during winter and early spring months when road salt is used. Site 9 showed increased amounts of chloride during the summer months. 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 or infiltration coming from an unknown source. Also, specific conductivity, TDS, and TSS generally tend to be high during winter and spring months, with the exception of Site 9. High TSS values in snowmelt and spring might be attributed to accumulated sand applied to icy roads. A small amount of sand can lead to very high TSS values. Almost all maximum metal values followed the same trend as TSS. Cadmium was below the detection limit for all sites for the single event tested (2/2/06). Zinc was below the detection limit for most of Site 6 and Site 8a events. Fecal coliform values were lowest for the snowmelt event and generally peaked during summer/fall months. This is as expected since bacterial survival is temperature dependent.

**Table 23F. NDPES sampled event data by site for 2006.**

| 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 | cBOD mg/L | TSS mg/L | TDS mg/L | Hardness mg/L | Cd µg/L | Cu µg/L | Pb µg/L | Zn µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/2/2006 | 13:05 | Site #6 22nd & Aldrich | Grab | 0.870 | 0.078 | 3.72 | 1.16 | 0.828 | 484 | 8.6 | 1790 | 380 | 13 | 240 | 865 | 76.0 | <5.00 | 61.4 | 50.8 | 240 |
| 5/8/2006 | 23:07 | Site #6 22nd & Aldrich | Composite | 0.529 | 0.110 | 3.74 | 1.60 | 1.11 | 2.75 | | 57.7 | | 18 | 136 | 58 | | | 22.2 | 66.0 | 148 |
| 5/12/2006 | 10:55 | Site #6 22nd & Aldrich | Grab | | | | | | | 7.9 | | 24,000 | | | | | | | | |
| *6/16/2006 | 19:47 | Site #6 22nd & Aldrich | Composite | 0.532 | | 3.68 | 1.34 | 0.494 | <2.00 | | 68.0 | | | 69 | 56 | | | 18.2 | 60.6 | 66.0 |
| 7/16/2006 | 10:07 | Site #6 22nd & Aldrich | Composite | 0.788 | 0.201 | 4.88 | 2.08 | 0.567 | 2.34 | | 92.7 | | 11 | 134 | 97 | | | 25.3 | 107 | <50.0 |
| 7/19/2006 | 10:31 | Site #6 22nd & Aldrich | Composite | 0.353 | 0.173 | 2.76 | 1.11 | 0.697 | <2.00 | | 63.5 | | 8 | 56 | 47 | | | 14.4 | 30.2 | 69.0 |
| 7/24/2006 | 18:10 | Site #6 22nd & Aldrich | Composite | 0.387 | 0.102 | 2.21 | 0.579 | 0.477 | 2.30 | | 40.2 | | 6 | 101 | 73 | | | 18.6 | 86.4 | 75.0 |
| 8/1/2006 | 4:23 | Site #6 22nd & Aldrich | Composite | 0.498 | 0.106 | 3.98 | 1.20 | 0.700 | 5.22 | | 76.6 | | 13 | 82 | 91 | | | 27.3 | 56.4 | 93.0 |
| 8/2/2006 | 2:41 | Site #6 22nd & Aldrich | Composite | 0.250 | 0.063 | 1.25 | <0.500 | 0.209 | <2.00 | | 29.6 | | 5 | 54 | 20 | | | 11.3 | 36.7 | <50.0 |
| 9/22/2006 | 8:13 | Site #6 22nd & Aldrich | Composite | 0.150 | 0.064 | 0.918 | <0.500 | 0.383 | 2.00 | | 48.5 | | 6 | 17 | 41 | | | 7.10 | 13.8 | <50.0 |
| 9/22/2006 | 11:00 | Site #6 22nd & Aldrich | Grab | | | | | | | | | 6,000 | | | | | | | | |
| *10/16/2006 | 6:58 | Site #6 22nd & Aldrich | Composite | 1.63 | 1.10 | 3.44 | 0.759 | | | | | | 113 | | | | | 23.8 | 13.0 | <50.0 |
| 11/28/2006 | 8:50 | Site #6 22nd & Aldrich | Grab | | | | | | | 8.2 | | 700 | | | | | | | | |
| 12/12/2006 | 8:40 | Site #6 22nd & Aldrich | Grab | 0.140 | 0.069 | 2.12 | 1.50 | 1.04 | 40.0 | 7.2 | 275 | 400 | 11 | 8 | 139 | | | 10.7 | 8.00 | <50.0 |
| 2/2/2006 | 12:45 | Site #7 Park & 14th | Grab | 0.769 | 0.072 | 2.73 | 0.699 | 0.863 | 532 | 9.0 | 2337 | 200 | 7 | 269 | 909 | 56.0 | <5.00 | 62.3 | 39.3 | 404 |
| 5/8/2006 | 23:04 | Site #7 Park & 14th | Composite | 0.346 | 0.051 | 2.67 | 1.34 | 0.798 | 6.00 | | 67.9 | | 12 | 127 | 59 | | | 22.3 | 29.1 | 131 |
| 5/12/2006 | 11:20 | Site #7 Park & 14th | Grab | | | | | | | 7.6 | | 6,000 | | | | | | | | |
| 5/25/2006 | 21:42 | Site #7 Park & 14th | Composite | 0.657 | 0.038 | 3.51 | 0.888 | 0.419 | 3.25 | | 100 | | 22 | 284 | 68 | | | 59.9 | 83.6 | 270 |
| *6/16/2006 | 18:55 | Site #7 Park & 14th | Composite | 0.426 | | 3.36 | 1.29 | 0.601 | 4.82 | | 90.2 | | | 119 | 75 | | | 31.8 | 36.2 | 85.0 |
| 7/14/2006 | 1:58 | Site #7 Park & 14th | Composite | 0.613 | 0.074 | 4.55 | 0.586 | 0.989 | 11.7 | | 185 | | | 153 | 179 | | | 37.5 | 44.6 | 82.0 |
| 7/16/2006 | 9:02 | Site #7 Park & 14th | Composite | 0.311 | 0.056 | 2.75 | 1.57 | 0.914 | <2.00 | | 67.3 | | 4 | 104 | 49 | | | 26.3 | 39.7 | <50.0 |
| 7/19/2006 | 10:48 | Site #7 Park & 14th | Composite | 0.225 | 0.053 | 2.46 | 0.985 | 0.936 | 3.19 | | 66.8 | | 5 | 63 | 82 | | | 17.6 | 13.2 | 54.0 |
| 8/2/2006 | 1:28 | Site #7 Park & 14th | Composite | 0.269 | 0.037 | 1.07 | <0.500 | 0.378 | 4.37 | | 70.8 | | 9 | 117 | 58 | | | 19.9 | 21.2 | 68.0 |
| 9/22/2006 | 8:06 | Site #7 Park & 14th | Composite | 0.122 | 0.039 | 0.704 | <0.500 | 0.406 | 2.00 | | 56.0 | | 5 | 16 | 44 | | | 7.60 | <5.00 | <50.0 |
| 9/22/2006 | 11:30 | Site #7 Park & 14th | Grab | | | | | | | | | 1,500 | | | | | | | | |
| 10/16/2006 | 7:20 | Site #7 Park & 14th | Composite | 0.799 | 0.191 | 2.81 | <0.500 | | | | | | 50 | | | | | 30.0 | 29.8 | 96.0 |
| 11/28/2006 | 9:05 | Site #7 Park & 14th | Grab | | | | | | | 7.9 | | 275 | | | | | | | | |
| 12/12/2006 | 9:00 | Site #7 Park & 14th | Grab | | | | | | | 6.9 | | 185 | | | | | | | | |
| 3/28/2006 | 13:15 | Site #8a Pershing Field | Grab | 0.754 | 0.412 | 2.48 | 0.572 | 0.619 | <2.00 | 8.9 | 113 | | 4 | 113 | | 108.0 | <5.00 | 8.50 | 14.4 | <50.0 |
| *6/16/2006 | 21:15 | Site #8a Pershing Field | Composite | 0.994 | | 6.12 | 0.750 | 0.124 | <2.00 | | 89.9 | | | 181 | 82 | | | 27.0 | 17.1 | 62.0 |
| 6/25/2006 | 7:38 | Site #8a Pershing Field | Composite | 0.209 | | 1.11 | 0.555 | 0.253 | <2.00 | | 65.7 | | | 21 | 55 | | | 11.1 | <5.00 | <50.0 |
| 7/24/2006 | 18:47 | Site #8a Pershing Field | Composite | 0.990 | 0.575 | 3.61 | 0.904 | 0.862 | <2.00 | | 104 | | 9 | 105 | 74 | | | 16.3 | 16.3 | <50.0 |
| 8/2/2006 | 2:53 | Site #8a Pershing Field | Composite | 0.508 | 0.138 | 1.92 | <0.500 | 0.247 | 5.22 | | 82.7 | | 7 | 143 | 46 | | | 16.4 | 18.0 | 61.0 |
| 8/10/2006 | 18:51 | Site #8a Pershing Field | Composite | 0.787 | 0.421 | 2.81 | 1.53 | 0.933 | 2.54 | | 98.0 | | 10 | 99 | 102 | | | 12.0 | 8.85 | <50.0 |
| 8/13/2006 | 11:47 | Site #8a Pershing Field | Composite | 0.316 | 0.082 | 2.50 | 1.17 | 0.954 | <2.00 | | 71 | | 8 | 76 | 90 | | | 14.8 | 9.20 | <50.0 |
| 8/23/2006 | 6:13 | Site #8a Pershing Field | Composite | 0.797 | 0.339 | 3.39 | 1.62 | 1.02 | 2.50 | | 103 | | 7 | 107 | 80 | | | 34.7 | 19.8 | 52.0 |
| 8/24/2006 | 19:23 | Site #8a Pershing Field | Composite | 0.289 | 0.057 | 2.26 | 1.13 | 0.349 | <2.00 | | 44 | | 2 | 123 | 44 | | | 17.2 | 19.6 | <50.0 |
| 9/21/2006 | 19:47 | Site #8a Pershing Field | Composite | | | | <0.500 | | | | | | 10 | | 55 | | | | | |
| 11/28/2006 | 9:30 | Site #8a Pershing Field | Grab | 0.884 | 0.286 | 3.29 | <0.500 | 0.499 | 2.00 | 7.2 | 103 | 440,000 | 33 | 96 | 75 | | | 9.90 | 6.80 | 60.0 |
| 2/2/2006 | 12:20 | Site #9 61st & Lyndale | Grab | 0.501 | 0.085 | 9.49 | 1.38 | 0.833 | 724 | 9.8 | 2820 | 60 | 11 | 228 | 1347 | 92.0 | <5.00 | 50.2 | 7.00 | 179 |
| 5/9/2006 | 0:14 | Site #9 61st & Lyndale | Composite | 0.798 | 0.090 | 5.66 | 3.07 | 0.720 | 435 | | 393 | | 19 | 473 | 388 | | | 67.8 | 33.3 | 298 |
| 5/12/2006 | 11:54 | Site #9 61st & Lyndale | Grab | | | | | | | | | 3,350 | | | | | | | | |
| 6/6/2006 | 2:30 | Site #9 61st & Lyndale | Composite | 0.826 | 0.128 | 4.14 | 2.81 | 0.478 | 40.5 | | 258 | | 13 | 243 | 167 | | | 65.4 | 31.9 | 246 |
| 7/14/2006 | 2:00 | Site #9 61st & Lyndale | Composite | 0.968 | 0.097 | 13.6 | 11.1 | 0.977 | 129 | | 514 | | | 330 | 395 | | | 60.5 | 20.0 | 274 |
| 7/19/2006 | 11:10 | Site #9 61st & Lyndale | Composite | 0.576 | 0.078 | 3.85 | 2.23 | 0.726 | 27.0 | | 200 | | 7 | 284 | 143 | | | 41.5 | 17.8 | 174 |
| 7/24/2006 | 19:20 | Site #9 61st & Lyndale | Composite | 0.543 | 0.045 | 4.76 | 2.53 | 0.773 | 28.2 | | 208 | | 10 | 293 | 159 | | | 39.0 | 17.8 | 200 |
| 8/1/2006 | 14:25 | Site #9 61st & Lyndale | Grab | | | | | | | | | 19000 | | | | | | | | |
| 8/2/2006 | 1:16 | Site #9 61st & Lyndale | Composite | 0.308 | 0.066 | 2.43 | 1.25 | 0.427 | 17.9 | | 144 | | 5 | 177 | 100 | | | 18.8 | 13.0 | 70.0 |
| *9/17/2006 | 18:51 | Site #9 61st & Lyndale | Composite | 0.483 | | 3.61 | 2.40 | 0.409 | 16.8 | | 159 | | | 240 | 130 | | | 32.7 | 19.9 | 147 |
| 9/22/2006 | 8:48 | Site #9 61st & Lyndale | Composite | 0.314 | 0.133 | 1.15 | <0.500 | 0.467 | 9.90 | | 152 | | 7 | 93 | 92 | | | 17.5 | <5.00 | <50.0 |
| 9/22/2006 | 10:10 | Site #9 61st & Lyndale | Grab | | | | | | | | | 59000 | | | | | | | | |
| 10/16/2006 | 12:10 | Site #9 61st & Lyndale | Composite | 0.741 | 0.067 | 24.5 | 17.6 | | | | | 5500 | 22 | | | | | 42.0 | 15.1 | 178 |
| 11/28/2006 | 12:17 | Site #9 61st & Lyndale | Composite | 0.697 | 0.079 | 2.03 | <0.500 | 0.332 | 90.5 | | 425 | | 9 | 386 | 222 | | | 38.8 | 19.6 | 230 |
| 11/28/2006 | 10:10 | Site #9 61st & Lyndale | Grab | | | | | | | 7.9 | | 130 | | | | | | | | |
| 12/12/2006 | 9:40 | Site #9 61st & Lyndale | Composite | 0.232 | 0.068 | 2.33 | 0.503 | 1.56 | 240 | 9.2 | 906 | 130 | 16 | 96 | 587 | | | 15.2 | <5.00 | <50.0 |

*** 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 2006. 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 | 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) | 0.437 | 0.126 | 2.68 | 0.89 | 0.589 | 4.44 | 7.96 | 93.4 | 1726 | 11.8 | 63.6 | 79.3 | 76.0 | 2.50 | 18.6 | 36.8 | 54 |
| 6 | MEAN (arithmetic) | 0.557 | 0.206 | 2.97 | 1.08 | 0.651 | 54.2 | 7.98 | 254 | 6296 | 20.3 | 89.7 | 149 | 76.0 | 2.50 | 21.8 | 48.1 | 74 |
| 6 | MAX | 1.63 | 1.10 | 4.88 | 2.08 | 1.11 | 484 | 8.60 | 1790 | 24000 | 113 | 240 | 865 | 76.0 | 2.50 | 61.4 | 107 | 240 |
| 6 | MIN | 0.140 | 0.063 | 0.918 | 0.250 | 0.209 | 1.00 | 7.20 | 29.6 | 380 | 4.52 | 8.40 | 20.2 | 76.0 | 2.50 | 7.10 | 8.00 | 25.0 |
| 6 | MEDIAN | 0.498 | 0.104 | 3.44 | 1.16 | 0.632 | 2.32 | 8.05 | 65.8 | 700 | 10.9 | 75.4 | 65.3 | 76.0 | 2.50 | 18.6 | 50.8 | 66.0 |
| 6 | STDEV | 0.426 | 0.316 | 1.23 | 0.571 | 0.285 | 152 | 0.591 | 544 | 10181 | 32.8 | 68.0 | 254 | | | 14.6 | 31.6 | 67.4 |
| 6 | NUMBER | 11 | 10 | 11 | 11 | 10 | 10 | 4 | 10 | 5 | 10 | 10 | 10 | 1 | 1 | 11 | 11 | 11 |
| 6 | COV | 0.765 | 1.53 | 0.413 | 0.532 | 0.438 | 2.80 | 0.074 | 2.141 | 1.617 | 1.618 | 0.758 | 1.707 | | | 0.671 | 0.656 | 0.909 |
| 7 | MEAN (geometric) | 0.391 | 0.059 | 2.37 | 0.658 | 0.656 | 6.33 | 7.81 | 119 | 620 | 9.92 | 109 | 92.5 | 56.0 | 2.50 | 27.0 | 25.7 | 85.9 |
| 7 | MEAN (arithmetic) | 0.454 | 0.068 | 2.66 | 0.81 | 0.700 | 63.1 | 7.85 | 338 | 1632 | 14.4 | 139 | 169 | 56.0 | 2.50 | 31.5 | 33.9 | 124 |
| 7 | MAX | 0.799 | 0.191 | 4.55 | 1.57 | 0.989 | 532 | 9.00 | 2337 | 6000 | 49.8 | 284 | 909 | 56.0 | 2.50 | 62.3 | 83.6 | 404 |
| 7 | MIN | 0.122 | 0.037 | 0.704 | 0.250 | 0.378 | 1.00 | 6.90 | 56.0 | 185 | 4.10 | 16.4 | 44.0 | 56.0 | 2.50 | 7.60 | 2.50 | 25.0 |
| 7 | MEDIAN | 0.386 | 0.053 | 2.74 | 0.794 | 0.798 | 4.37 | 7.75 | 70.8 | 275 | 7.94 | 119 | 68.0 | 56.0 | 2.50 | 28.2 | 33.0 | 83.5 |
| 7 | STDEV | 0.239 | 0.048 | 1.12 | 0.487 | 0.250 | 176 | 0.874 | 751 | 2504 | 15.5 | 87.5 | 280 | | | 17.7 | 21.8 | 121 |
| 7 | NUMBER | 10 | 9 | 10 | 10 | 9 | 9 | 4 | 9 | 5 | 8 | 9 | 9 | 1 | 1 | 10 | 10 | 10 |
| 7 | COV | 0.527 | 0.709 | 0.419 | 0.600 | 0.357 | 2.78 | 0.111 | 2.22 | 1.53 | 1.08 | 0.629 | 1.66 | | | 0.560 | 0.642 | 0.975 |
| 8a | MEAN (geometric) | 0.576 | 0.224 | 2.70 | 0.664 | 0.480 | 1.52 | 8.00 | 84.5 | 440000 | 7.66 | 95.11 | 67.9 | 108 | 2.50 | 15.3 | 11.5 | 36.5 |
| 8a | MEAN (arithmetic) | 0.653 | 0.289 | 2.95 | 0.82 | 0.586 | 1.83 | 8.05 | 87.4 | 440000 | 9.98 | 106 | 70.4 | 108 | 2.50 | 16.8 | 13.3 | 40.0 |
| 8a | MAX | 0.99 | 0.575 | 6.12 | 1.62 | 1.02 | 5.22 | 8.90 | 113 | 440000 | 32.9 | 181 | 102 | 108 | 2.50 | 34.7 | 19.8 | 62.0 |
| 8a | MIN | 0.491 | 0.160 | 2.46 | 0.524 | 0.373 | 1.34 | 7.96 | 81.1 | 440000 | 5.92 | 76.8 | 65.4 | 108 | 2.50 | 14.2 | 9.0 | 33.5 |
| 8a | MEDIAN | 0.771 | 0.313 | 2.66 | 0.750 | 0.559 | 1.00 | 8.05 | 94.0 | 440000 | 8.12 | 106 | 74.7 | 108 | 2.50 | 15.6 | 15.4 | 25.0 |
| 8a | STDEV | 0.297 | 0.184 | 1.34 | 0.498 | 0.337 | 1.36 | 1.20 | 21.6 | | 9.00 | 41.7 | 19.4 | | | 8.17 | 6.00 | 18.01 |
| 8a | NUMBER | 10 | 8 | 10 | 11 | 10 | 10 | 2 | 10 | 1 | 9 | 10 | 10 | 1 | 1 | 10 | 10 | 9 |
| 8a | COV | 0.46 | 0.64 | 0.45 | 0.61 | 0.58 | 0.74 | 0.15 | 0.25 | | 0.90 | 0.39 | 0.28 | | | 0.49 | 0.45 | 0.45 |
| 9 | MEAN (geometric) | 0.536 | 0.081 | 4.48 | 1.81 | 0.634 | 64.5 | 8.93 | 345 | 1544 | 10.6 | 232 | 235 | 92.0 | 2.50 | 36.6 | 13.0 | 134 |
| 9 | MEAN (arithmetic) | 0.582 | 0.085 | 6.46 | 3.78 | 0.700 | 160 | 8.97 | 562 | 12453 | 11.8 | 258 | 339 | 92.0 | 2.50 | 40.8 | 16.7 | 171 |
| 9 | MAX | 0.968 | 0.133 | 24.5 | 17.6 | 1.56 | 724 | 9.80 | 2820 | 59000 | 21.7 | 473 | 1347 | 92.0 | 2.50 | 67.8 | 33.3 | 298 |
| 9 | MIN | 0.232 | 0.045 | 1.15 | 0.250 | 0.332 | 9.90 | 7.90 | 144 | 60 | 4.59 | 92.7 | 92.0 | 92.0 | 2.50 | 15.2 | 2.50 | 25.0 |
| 9 | MEDIAN | 0.560 | 0.079 | 4.00 | 2.32 | 0.720 | 40.5 | 9.20 | 258 | 3350 | 10.3 | 243 | 167 | 92.0 | 2.50 | 40.3 | 17.8 | 179 |
| 9 | STDEV | 0.230 | 0.026 | 6.67 | 5.22 | 0.352 | 228 | 0.97 | 782 | 21595 | 5.59 | 115 | 369 | | | 18.0 | 9.78 | 90.6 |
| 9 | NUMBER | 12 | 11 | 12 | 12 | 11 | 11 | 3 | 11 | 7 | 10 | 11 | 11 | 1 | 1 | 12 | 12 | 12 |
| 9 | COV | 0.395 | 0.311 | 1.03 | 1.38 | 0.503 | 1.42 | 0.108 | 1.39 | 1.73 | 0.473 | 0.443 | 1.09 | | | 0.442 | 0.586 | 0.531 |
| All | MEAN (geometric) | 0.481 | 0.105 | 3.01 | 0.94 | 0.585 | 7.7 | 8.13 | 138 | 1692 | 9.95 | 113 | 106 | 80.6 | 2.50 | 23.4 | 19.3 | 72 |
| All | MEAN (arithmetic) | 0.562 | 0.156 | 3.87 | 1.69 | 0.659 | 72.2 | 8.18 | 316 | 31489 | 14.2 | 151 | 186 | 83.0 | 2.50 | 28.2 | 27.9 | 106 |
| All | MAX | 1.63 | 1.10 | 24.5 | 17.6 | 1.56 | 724 | 9.80 | 2820 | 440000 | 113 | 473 | 1347 | 108 | 2.50 | 67.8 | 107 | 404 |
| All | MIN | 0.122 | 0.037 | 0.704 | 0.250 | 0.124 | 1.00 | 6.90 | 29.6 | 60 | 1.90 | 8.40 | 20.2 | 56.0 | 2.50 | 7.10 | 2.50 | 25.0 |
| All | MEDIAN | 0.529 | 0.081 | 2.81 | 1.12 | 0.658 | 3.81 | 7.90 | 99.0 | 1100 | 9.10 | 118 | 81.8 | 84.0 | 2.50 | 22.3 | 19.6 | 69 |
| All | STDEV | 0.305 | 0.198 | 3.92 | 2.97 | 0.303 | 169 | 0.874 | 610 | 102981 | 18.9 | 106 | 276 | 22.2 | 0.00 | 17.5 | 24.0 | 95.4 |
| All | NUMBER | 43 | 38 | 43 | 44 | 40 | 40 | 13 | 40 | 18 | 37 | 40 | 40 | 4 | 4 | 43 | 43 | 42 |
| All | COV | 0.543 | 1.27 | 1.01 | 1.76 | 0.460 | 2.34 | 0.107 | 1.93 | 3.27 | 1.33 | 0.698 | 1.49 | 0.268 | 0.000 | 0.621 | 0.857 | 0.898 |

Sampled data were fairly comparable to typical urban stormwater data, Nationwide Urban Runoff Program (NURP), Center for Watershed Protection (CWP) and Bannerman (Tables 23H and 23I). Table 23H shows median values for MPRB 2006 monitored residential sampled sites which were comparable or less than reported NURP values with the notable exception of TKN values. Most MPRB land use category values were comparable to NURP values, and most metals were well below NURP values. Most parameters were comparable to MRPB 2001-2005 data except for residential land use Pb values which are much higher in 2006 and mixed land use TKN, NO3NO2 and TSS values. It is important to note that the new sites monitored in 2005 and 2006 are different watersheds and have similar, but not the same, land uses as previously monitored sites in 2001 - 2004.

**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 Park & Recreation Board for the identified year(s).**

| | Residential | | | Mixed | | | Composite of all land use categories | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | MPRB[1] 2006 | MPRB[2] 2001-2005 | NURP | MPRB[3] 2006 | MPRB[4] 2001-2005 | NURP | MPRB[5] 2006 | MPRB[6] 2001-2005 | NURP |
| TP (mg/L) | 0.498 | 0.453 | 0.383 | 0.386 | 0.321 | 0.263 | 0.529 | 0.364 | 0.33 |
| TKN (mg/L) | 3.44 | 2.38 | 1.9 | 2.74 | 1.62 | 1.288 | 2.81 | 1.90 | 1.5 |
| NO3NO2 (mg/L) | 0.632 | 0.338 | 0.736 | 0.798 | 0.389 | 0.558 | 0.658 | 0.390 | 0.68 |
| BOD (mg/L) | 10.9 | 12.2 | 10 | 7.94 | 12.9 | 7.8 | 9.1 | 11.9 | 9 |
| TSS (mg/L) | 75 | 88 | 101 | 119 | 68 | 67 | 118 | 80 | 100 |
| Cu (µg/L) | 17 | 16 | 33 | 28 | 18 | 27 | 22 | 17 | 30 |
| Pb (µg/L) | 51 | 16 | 144 | 33 | 16 | 114 | 20 | 15 | 140 |
| Zn (µg/L) | 66 | 74 | 135 | 84 | 94 | 154 | 68 | 86 | 160 |

**[1] Site 6 data**
**[2] Sites 1 and 2 data, (Site 6, 2005)**
**[3] Site 7 data**
**[4] Sites 5 and 5a data, (Site 7, 2005)**
**[5] Sites 6-9 data**
**[6] Sites 1-5a data, (Site 6-9, 2005)**

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 (2001-2004) and 6-9 (2005) were generally similar to the Sites 6-9 in 2006. Phosphorus, nitrogen and TSS increased while Cl, BOD, 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] 2001-2005 | MPRB[7] 2006 |
|---|---|---|---|---|---|---|---|
| TP (mg/L) | 0.5 | 0.3 | 0.66 | 0.417 | 0.484 | 0.471 | 0.562 |
| TDP (mg/L) | -- | -- | 0.27 | 0.251 | -- | 0.136 | 0.156 |
| TKN (mg/L) | 2.3 | -- | -- | -- | 2.46 | 2.46 | 3.87 |
| NO3NO2 (mg/L) | 0.86 | -- | -- | -- | 0.362 | 0.484 | 0.659 |
| NH3 (mg/L) | -- | -- | -- | 0.234 | -- | 1.04 | 1.69 |
| Cl (mg/L) | -- | 230 (winter) | -- | -- | -- | 227 | 72.2 |
| BOD (mg/L) | 12 | -- | -- | 14.9 | 25 | 16.6 | 14.2 |
| TDS (mg/L) | -- | -- | -- | 73.3 | 78 | 522 | 186 |
| TSS (mg/L) | 239 | 80 | 262 | 77.6 | 129.2 | 115 | 151 |
| Cu (µg/L) | 50 | 10 | 16 | 26.7 | 30 | 26.8 | 28.2 |
| Pb (µg/L) | 240 | 18 | 32 | 75.5 | 233 | 25.6 | 27.9 |
| Zn (µg/L) | 350 | 140 | 204 | 148 | 194 | 133 | 104 |

**[1] USEPA (1996)**
**[2] Center for Watershed Protection (2000)**
**[3] Monroe study area of Bannerman et al. (1993)**
**[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 (2001-2004), 6-9 (2005)**
**[7] MPRB arithmetic mean calculated from NPDES Sites 6-9 (2006)**

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 (NDC) 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, MPCA Research Scientist, 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.

**Table 23J. Flow-weighted mean concentrations and related statistics for NPDES parameters in 2006. STDEV= 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) | Cu (µg/L) | Pb (µg/L) | Zn (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 0.649 | 0.144 | 3.68 | 0.714 | 1.39 | 174 | 12 | 142 | 328 | 32 | 59 | 120 |
| 7 | 0.384 | 0.051 | 2.82 | 0.699 | 1.06 | 36.2 | 9 | 122 | 124 | 29 | 31 | 129 |
| 8a | 0.659 | 0.249 | 3.32 | 0.606 | 0.96 | 2.03 | 7 | 128 | 70 | 19 | 16 | 32 |
| 9 | 0.501 | 0.096 | 4.33 | 0.532 | 3.14 | 150 | 9 | 231 | 210 | 35 | 19 | 96 |
| **MEAN** | **0.548** | **0.135** | **3.54** | **0.638** | **1.64** | **91** | **9** | **156** | **183** | **28.8** | **31.3** | **94** |
| **MEDIAN** | **0.575** | **0.120** | **3.50** | **0.653** | **1.48** | **93** | **9** | **135** | **167** | **30.5** | **25.0** | **108** |
| **STANDEV** | **0.131** | **0.085** | **0.64** | **0.085** | **1.019** | **84** | **2** | **51** | **113** | **6.95** | **19.6** | **44** |

*** 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.**

Large rain events can lead to pipe surcharges. Surcharges, where the water backs up vertically and creates a pressurized head, result in inaccurate daily flow calculations 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 2006:

- **Site 6:** 6/16/06, 7/24/06, 8/2/06, 8/24/06
- **Site 7:** 6/16/06, 8/22/06
- **Site 8a:** 6/6/06, 6/16/06, 7/16/06, 7/25/06, 8/1/06, 8/2/06, 8/6/06, 8/10/06, 8/13/06, 8/23/06, 8/24/06, 9/2/06
- **Site 9:** 6/16/06, 8/24/06

Site 8a had twelve surcharges in 2006. They are likely due to two pipes and overland flow coming into a manhole basin and a 10 inch PVC pipe outlet at the bottom. The outlet is unable to discharge the water fast enough and it surcharges.

The highest and lowest TP concentrations were estimated at Site 6 and 7, respectively. Site 6 is multi-family residential. Site 7 is mostly high rise residential. Site 7 had the lowest estimated TP, TDP, TKN and TSS. 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, NH3, TSS and Cu. Site 9 is located adjacent to a large cement aggregate mixing facility which may explain the higher TSS values. Site 9 is mainly commercial/industrial. This site sometimes had a small baseflow which could be sampled during future monitoring to distinguish high concentrations from storm events or baseflow.

Site 8a had the highest estimated concentrations of TDP and lowest estimated NH3, Cl, cBOD, TDS, 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.

For comparison purposes, 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, Site 6 has lower concentrations than Yates for all parameters with the exception of Pb. Sites 7 and 9 also have lower flow-weighted mean concentrations than Sandberg for almost all parameters and are well within the ranges shown. The 2006 water quality of Sites 6, 7, and 9 was better than the study sites of 1980.

Flow-weighted mean concentrations for Cl and TDS were difficult to estimate using FLUX due to large outliers from the single snowmelt sample. These estimates should be used with discretion. When samples were below the MDL, half of the MDL was used for calculations. Concentrations for Cd sampled in 2006 were all below the MDL for each site. Cadmium was discontinued from monitoring in 2006 because Cd concentrations have typically been below detection for the Minneapolis/St. Paul area (Table 23L), as seen in previous years data. The detection limit for Cd has changed over time, in 2002 it was <0.500 µg/L, in 2003 it was <2.00 µg/L and in 2004 it was <5.00 µg/L (IRI).

Most parameters fell within the range of estimated flow-weighted mean concentration of previous years as seen in Table 23L. In 2006 the parameters TP, TKN, NO2NO3 and TSS had higher concentrations than previous years. Specifically TKN and NO2NO3 show a rather marked increase. TKN (NH3 + organic nitrogen) sources in urban stormwater can be from anthropogenic activities (fertilizer) and animal waste, but is likely in this case to be from the decay of organic material such as vegetation. NO2NO3 sources can be formed from the nitrification of TKN, and thus share similar sources. 2006 also shows the highest recorded flow weighted mean concentration of TP for the six years monitored. This result is probably from the decay of organic material. In 2006 sites 8a and 9 had mean TP concentrations of 0.653 and 0.582 mg/L, respectively.

While the land use designation characteristics (commercial, residential, etc.) for the NPDES stormwater sites have remained the same, the watersheds for the sites are different as sites have needed to be changed from year-to-year. Also the timing of street sweeping and sampling may have had an effect. These may have been the greatest influence on the concentration differences.

Event mean concentration seasonal statistics (snowmelt, spring, summer and fall) for a combination of all sites were calculated and are listed in Table 23M. Seasonal patterns are evident with snowmelt having the highest mean TP, TKN, Cl, TSS, TDS and Zn. Summer had the highest F. Coli. geometric mean. Fall had the highest mean concentrations of TDP, and also shows an increase in many of the other pollutants.

**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<br>Range | 133<br>(2- 758) | 740<br>(17- 26,610) | 337<br>(7- 4,388) |
| Pb | Mean<br>Range | 0.23<br>(0.015- 1.8) | 0.02<br>(0.008- 0.31) | 0.19<br>(0.003- 1.5) |
| Zn | Mean<br>Range | 0.198<br>(0.02- 2.2) | 0.235<br>(0.028- 0.53) | 0.185<br>(0.02- 0.81) |
| TKN | Mean<br>Range | 3.6<br>(0.6- 28.6) | 1.2<br>(1.0- 29.2) | 2.5<br>(0.4- 16.0) |
| TP | Mean<br>Range | 0.63<br>(0.10- 3.85) | 0.62<br>(0.2- 13.1) | 0.63<br>(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. nc = data not collected.**

| **Parameter** | **Flow-weighted mean concentrations** | | | | | |
|---|---|---|---|---|---|---|
| | **MPRB 2001** | **MPRB 2002** | **MPRB 2003** | **MPRB 2004** | **MPRB 2005** | **MPRB 2006** |
| TP (mg/L) | 0.470 | 0.337 | 0.474 | 0.332 | 0.354 | 0.548 |
| TDP (mg/L) | 0.112 | 0.095 | 0.114 | 0.121 | 0.123 | 0.135 |
| TKN (mg/L) | 2.21 | 1.60 | 2.10 | 1.94 | 3.48 | 3.54 |
| NO3NO2 (mg/L) | 0.398 | 0.423 | 0.496 | 0.382 | 0.448 | 0.638 |
| NH3 (mg/L) | 0.494 | 0.722 | 0.346 | 0.918 | 1.74 | 1.64 |
| Cl (mg/L) | 37.4 | 10.5 | 587 | 40.0 | 18.0 | 91 |
| cBOD (mg/L) | 12 | 8 | 16 | 20 | 9 | 9 |
| TSS (mg/L) | 116 | 83 | 116 | 70 | 108 | 156 |
| TDS (mg/L) | 306 | 85 | 725 | 130 | 252 | 183 |
| Cd (µg/L) | 0.532 | 0.518 | 2.11 | 2.80 | 2.50 | nc |
| Cu (µg/L) | 15.1 | 30.8 | 23.4 | 15.3 | 19.3 | 29.0 |
| Pb (µg/L) | 23.3 | 17.1 | 22.0 | 14.3 | 40.9 | 31.0 |
| Zn (µg/L) | 180 | 76.0 | 107 | 76.0 | 86.0 | 94.0 |

← Sites 1-5a → ← Sites 6-9 →

**Table 23M. Statistical summary for event mean concentrations by season in 2006. Statistics were calculated from all sites (6-9). STDEV= standard deviation, COV= coefficient of variance**

| 2006 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 | 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)** | 0.695 | 0.078 | 4.58 | 1.04 | 0.841 | 571 | 9.12 | 2276 | 166 | 9.78 | 245 | 1019 | 73.2 | 2.5 | 57.7 | 24.1 | 259 |
| | **MEAN (arithmetic)** | 0.713 | 0.078 | 5.31 | 1.08 | 0.841 | 580 | 9.13 | 2316 | 213 | 10.1 | 246 | 1040 | 74.7 | 2.5 | 58.0 | 32.4 | 274 |
| | **MAX** | 0.870 | 0.085 | 9.49 | 1.38 | 0.863 | 724 | 9.80 | 2820 | 380 | 12.5 | 269 | 1347 | 92.0 | 2.5 | 62.3 | 50.8 | 404 |
| SNOWMELT | **MIN** | 0.501 | 0.072 | 2.73 | 0.699 | 0.828 | 484 | 8.60 | 1790 | 60 | 6.92 | 228 | 865 | 56.0 | 2.5 | 50.2 | 7.00 | 179 |
| (February) | **MEDIAN** | 0.769 | 0.078 | 3.72 | 1.16 | 0.833 | 532 | 9.00 | 2337 | 200 | 10.8 | 240 | 909 | 76.0 | 2.5 | 61.4 | 39.3 | 240 |
| | **STDEV** | 0.191 | 0.007 | 3.65 | 0.349 | 0.019 | 127 | 0.611 | 515 | 160 | 2.86 | 21 | 266 | 18.0 | 0.0 | 6.74 | 22.7 | 116 |
| | **NUMBER** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | **COV** | 0.267 | 0.083 | 0.687 | 0.323 | 0.022 | 0.219 | 0.067 | 0.223 | 0.752 | 0.284 | 0.086 | 0.256 | 0.242 | 0.000 | 0.116 | 0.702 | 0.424 |
| | **MEAN (geometric)** | 0.557 | 0.066 | 3.75 | 1.55 | 0.719 | 12.4 | 7.75 | 111 | 7843 | 17.5 | 219 | 97.5 | | | 37.6 | 48.1 | 199 |
| | **MEAN (arithmetic)** | 0.583 | 0.072 | 3.90 | 1.72 | 0.763 | 112 | 7.75 | 155 | 11117 | 17.9 | 255 | 143 | | | 43.0 | 53.0 | 212 |
| | **MAX** | 0.799 | 0.110 | 5.66 | 3.05 | 1.11 | 435 | 7.90 | 393 | 24000 | 22.4 | 473 | 388 | | | 67.8 | 83.6 | 298 |
| SPRING | **MIN** | 0.346 | 0.038 | 2.67 | 0.888 | 0.419 | 2.75 | 7.60 | 57.7 | 3350 | 12.3 | 127 | 58.0 | | | 22.0 | 29.1 | 131 |
| (April-May) | **MEDIAN** | 0.593 | 0.071 | 3.63 | 1.47 | 0.759 | 4.63 | 7.75 | 84.0 | 6000 | 18.5 | 210 | 63.5 | | | 41.1 | 49.7 | 209 |
| | **STDEV** | 0.193 | 0.033 | 1.27 | 0.934 | 0.285 | 216 | 0.212 | 160 | 11236 | 4.24 | 162 | 163 | | | 24.3 | 26.2 | 84.5 |
| | **NUMBER** | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 3 | 4 | 4 | 4 | | | 4 | 4 | 4 |
| | **COV** | 0.330 | 0.464 | 0.325 | 0.543 | 0.374 | 1.928 | 0.027 | 1.034 | 1.011 | 0.237 | 0.636 | 1.139 | | | 0.565 | 0.495 | 0.399 |
| | **MEAN (geometric)** | 0.474 | 0.106 | 3.04 | 1.10 | 0.551 | 3.73 | | 94.3 | 19000 | 7.01 | 114 | 81.8 | | | 22.9 | 23.3 | 59.6 |
| | **MEAN (arithmetic)** | 0.532 | 0.145 | 3.56 | 1.63 | 0.629 | 12.3 | | 118 | 19000 | 7.68 | 135 | 98.5 | | | 26.0 | 31.0 | 80 |
| | **MAX** | 0.994 | 0.575 | 13.6 | 11.1 | 1.02 | 129 | | 514 | 19000 | 13.2 | 330 | 395 | | | 65.4 | 107 | 274 |
| SUMMER | **MIN** | 0.209 | 0.037 | 1.07 | 0.250 | 0.124 | 1.00 | | 29.6 | 19000 | 1.90 | 20.8 | 20.2 | | | 11.1 | 2.50 | 25.0 |
| (June-August) | **MEDIAN** | 0.503 | 0.090 | 3.09 | 1.19 | 0.649 | 2.52 | | 86.3 | 19000 | 7.57 | 112 | 80.8 | | | 19.4 | 19.9 | 64.0 |
| | **STDEV** | 0.258 | 0.142 | 2.48 | 2.13 | 0.283 | 27.0 | | 102 | | 3.04 | 80.4 | 75.1 | | | 14.5 | 25.1 | 70.9 |
| | **NUMBER** | 24 | 20 | 24 | 24 | 24 | 24 | | 24 | 1 | 18 | 24 | 24 | | | 24 | 24 | 24 |
| | **COV** | 0.485 | 0.980 | 0.696 | 1.309 | 0.450 | 2.19 | | 0.86 | | 0.395 | 0.597 | 0.763 | | | 0.558 | 0.810 | 0.881 |
| | **MEAN (geometric)** | 0.409 | 0.117 | 2.47 | 0.58 | 0.547 | 12.5 | 7.75 | 171 | 1684 | 15.7 | 60.9 | 105 | | | 17.8 | 11.8 | 62 |
| | **MEAN (arithmetic)** | 0.563 | 0.209 | 4.26 | 2.04 | 0.637 | 50.3 | 7.79 | 266 | 46711 | 25.6 | 119 | 154 | | | 21.4 | 14.3 | 90 |
| | **MAX** | 1.631 | 1.10 | 24.5 | 17.6 | 1.56 | 240 | 9.20 | 906 | 440000 | 113 | 386 | 587 | | | 42.0 | 29.8 | 230 |
| FALL | **MIN** | 0.122 | 0.039 | 0.704 | 0.250 | 0.332 | 1.00 | 6.90 | 48.5 | 130 | 5.00 | 8.40 | 41.0 | | | 7.10 | 2.50 | 25.0 |
| (Sept-Nov) | **MEDIAN** | 0.483 | 0.074 | 2.33 | 0.25 | 0.438 | 13.4 | 7.90 | 156 | 700 | 10.6 | 94.4 | 92.0 | | | 17.5 | 13.8 | 60 |
| | **STDEV** | 0.455 | 0.321 | 6.78 | 4.94 | 0.435 | 82.4 | 0.782 | 287 | 131586 | 32.0 | 131 | 172 | | | 12.8 | 8.20 | 77.8 |
| | **NUMBER** | 11 | 10 | 11 | 12 | 8 | 8 | 7 | 8 | 11 | 11 | 8 | 9 | | | 11 | 9 | 9 |
| | **COV** | 0.808 | 1.53 | 1.59 | 2.42 | 0.68 | 1.64 | 0.10 | 1.081 | 2.82 | 1.253 | 1.103 | 1.120 | | | 0.597 | 0.574 | 0.863 |

EDITOR'S NOTE: This document has been adapted from Section 24A of the Minneapolis Park & Recreation Board's *2006 Water Resources Report*. The complete versions of these annual reports can be found at the following website:

http://www.minneapolisparks.org/default.asp?PageID=791

# LOGAN POND BMP MONITORING

## BACKGROUND

Best management practices (BMPs) include procedures and structures designed to help reduce water pollution. In 2006, the MPRB continued monitoring one of the City of Minneapolis' stormwater ponds located in northern Minneapolis, Figure 24A (next page). 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 29$^{th}$ Ave. N. and Logan Ave. N. The drainage area to the pond is 165 acres consisting primarily of residential land use. Logan Pond has one main inlet, two small inlet pipes and one outlet. The small inlet pipes drain the adjacent residential alleys. The alleys are 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 water 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 and from May to November in 2006. Samples were collected at the inlet, outlet, and two inlet pipes located in the alleys on the east and west sides of the pond. In 2006 equipment was similar to 2005 and included area/velocity pressure transducers with ISCO 4150 dataloggers at the inlet, outlet, and east alley. A level/pressure transducer with ISCO 4120 datalogger was initially installed at the west alley, which was changed on 6/14/06 to an area/velocity pressure transducer with ISCO 4150 datalogger. In 2005 the

only difference was the west alley had an ISCO 4120 datalogger and level probe the entire monitoring season. Finally, two ISCO 3700 samplers were used at the inlet and outlet. In 2005 the outlet and alleys were installed on 6/30/05 and the inlet was installed on 7/7/05. In 2006 all the equipment was initially installed on 5/5/06. 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 in 2005 and 2006 were total phosphorus (TP), total dissolved phosphorus (TDP), total Kjeldahl nitrogen (TKN), nitrate+nitrite (NO3NO2), ammonia (NH3), chloride (Cl), conductivity, carbonaceous biochemical oxygen demand (cBOD), total suspended solids (TSS), total dissolved solids (TDS), copper (Cu), lead (Pb), and zinc (Zn). In 2005, cadmium (Cd) and *E. coli* grab samples were collected. In 2006 neither Cd nor *E. coli* were collected. Fecal coliform 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 Table 23E of Appendix A3.

In 2006, a bathymetric map of the pond was completed to allow for sedimentation analysis. MRPB personnel used a GPS unit and marked depth rod to assess the sedimentation that has occurred in the pond. Measurements were made from the top of the water to top of sediment. An established grid was followed to accurately identify the pond depth at each location. This was an initial baseline depth reading to determine how fast the pond is filling with sediment. In future years, MRPB personnel can return to the same grid system to measure the depth changes. A tape down measurement was recorded from a fixed point (top edge of the reinforced concrete pipe pond outlet structure) at the pond to the water surface which can later be surveyed for exact elevations.

## RESULTS & DISCUSSION

In 2005 nine storm events were sampled at the inlet, ten at the outlet, and six at each alley. In 2006 ten storm events were sampled at the inlet, twelve at the outlet, and three at each alley. These 2006 data will be combined with the 2005 data to better asses the efficacy of the BMP. The dates and lab results are presented in Tables 24A and 24B.

Statistics were calculated and are presented in Tables 24C, 24D and 24F. Lab values reported below detection were divided in half for statistical calculations. Mean outlet values in Tables 24C, 24D and 24F show water quality improvement for most parameters. The only parameter with increased output was chloride. Winter salt use may be building up chloride that flushes out during the year. This may explain why the outlet has a higher value than the inlets.

When comparing the mean values of the east and west alleys most of the parameters were comparable except for chloride, fecal coliform, TSS and lead. With regards to these parameters the west alley concentrations were more than double the east

alley. One possible explanation is that trash cans and surrounding debris were seen in the alleys which could contribute to high pollutant concentrations, but it is unknown exactly why this occurred.

Total volumes recorded at each monitored location are given in Tables 24F, 24G and 24H. The total inlet volume recorded for the sampling period 7/7/05 - 10/31/05 was 1,800,000 cf. The total inlet volume recorded for the sampling period 5/5/06 - 11/29/06 was 1,506,490 cf. It should be noted the inlet equipment was damaged. Data from 5/5/06 – 6/13/06 data were lost. To fill in this gap, and achieve an estimated mass balance, the outlet volume for this time period was added to the inlet. The east and west alley's contribute only approximately 10% of the total yearly volume. The total outlet volume recorded in 2005 was 1,040,000 cf and in 2006 was 1,510,996 cf.

Total pollutant load calculations are in Tables 24I, 24J and 24K. All parameters except NH3, hardness, chloride and TDS showed some water quality improvements. In 2005 fecal coliform showed the highest removal as die-off and settling would be expected, while TDS showed the least amount captured. In 2006 TP, TKN, Cl, fecal coliform, TDS and Pb all show a net export. This may be indicative of breakdown of gross solids (leaves, paper, cigarette butts) in the pond. The combined 2005-2006 load data show only Cl and TDS export, all other parameters show some removal. The unusual amount of rainfall in 2005 may not have left sufficient settling time for many parameters. 2006 had below normal precipitation which may have allowed more settling time for many parameters.

The 10/16/06 storm had some unusually high values which affected the overall performance and load calculations. For example, the TP inlet was 3.37 mg/L and outlet was 5.20 mg/L and the Pb inlet was 14.9 µg/L and outlet was 96.6 µg/L. It was decided to include this data. While the data are outliers, they are real samples. The explanation is elusive because the 10/16/06 storm was not unusually intense at 0.02 inch/hr or large at 0.21 inches. Public Works indicated this area was swept a week after this storm.

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 best currently available sampling equipment has limited capability. This may lead to an underrepresentation of inlet concentrations. The sampler intake strainer and tubing (3/8" inner diameter) does not allow the uptake of large debris such as leaves, tree seeds, paper, cigarettes, and small trash. This debris may decompose in the pond into small enough particles to be taken up by the sampling strainer at the outlet during future storm events. 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. Logan Pond sampled event data for 2006.**

| Date | Time | Site Location | Sample Type | TP mg/L | TDP mg/L | TKN mg/L | NO3NO2 mg/L | NH3 mg/L | Cl mg/L | Sp.Cond. µmho/cm | F. Coli cfu/100mL | cBOD mg/L | TSS mg/L | TDS mg/L | Cu µg/L | Pb µg/L | Zn µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/25/2006 | 8:44 | Logan Inlet | Composite | 0.372 | | 1.13 | 0.179 | 0.583 | 10.2 | 81.8 | | | 42 | 82 | 13 | 11.4 | <50.0 |
| 7/16/2006 | 9:14 | Logan Inlet | Composite | 0.943 | 0.263 | 5.74 | 0.047 | 2.38 | 24.1 | 228 | | 21 | 132 | 204 | 36.8 | 36.9 | <50.0 |
| 7/19/2006 | 12:34 | Logan Inlet | Composite | 0.633 | 0.189 | 3.83 | 0.242 | 1.27 | 7.24 | 97.8 | | 13 | 113 | 109 | 30.4 | 35.0 | 97.0 |
| 7/24/2006 | 21:52 | Logan Inlet | Composite | 0.583 | 0.161 | 3.03 | 0.507 | 0.687 | 4.44 | 67.5 | | 9 | 144 | 82 | 25.1 | 39.5 | 87.0 |
| 8/1/2006 | 6:16 | Logan Inlet | Composite | 0.598 | 0.139 | 3.47 | 0.325 | 1.17 | 6.92 | 95.3 | | 18 | 119 | 86 | 26.2 | 31.0 | 100 |
| 8/2/2006 | 1:19 | Logan Inlet | Composite | 0.468 | 0.176 | 1.50 | 0.276 | 0.672 | 5.64 | 55.9 | | 7 | 117 | 50 | 17.3 | 32 | 67.0 |
| 9/18/2006 | 18:51 | Logan Inlet | Composite | 0.573 | n/c | 2.60 | 0.126 | 0.365 | 8.40 | 114 | | n/c | 83 | 94 | 23.1 | 21.1 | <50 |
| 9/23/2006 | 18:33 | Logan Inlet | Composite | 0.324 | n/c | n/c | n/c | n/c | 4 | 87.1 | | n/c | 29.3 | 60.6 | 13 | 13.6 | <50 |
| 10/16/2006 | 8:03 | Logan Inlet | Composite | 3.374 | 2.768 | 5.028 | 0.372 | 1.055 | <2.0 | 214 | | 198 | 72.7 | 336 | 25.8 | 14.9 | 85 |
| 11/28/2006 | 10:55 | Logan Inlet | Grab | | | | | | | | 3100 | | | | | | |
| 12/12/2006 | 10:55 | Logan Inlet | Grab | 0.876 | 0.653 | 2.270 | 0.648 | <0.500 | 133.0 | 567 | 8000 | 47.1 | 35.3 | 338 | 18.1 | 12.10 | <50 |
| | | | | | | | | | | | | | | | | | |
| 7/19/2006 | 11:05 | Logan East | Grab | 0.397 | 0.214 | 2.20 | 0.831 | 0.714 | 3.61 | 114 | 5600 | | 42 | 109 | 20.5 | 7.90 | <50.0 |
| 9/22/2006 | 8:30 | Logan East | Grab | 0.134 | 0.073 | 0.672 | 0.418 | <0.500 | <2.0 | 78.5 | 1400 | 4.2 | 12.8 | 46.8 | 5.4 | <5.00 | <50 |
| 11/28/2006 | 10:50 | Logan East | Grab | 0.202 | 0.114 | 0.810 | 0.187 | <0.500 | <2.0 | 70.3 | 160 | 5.38 | 11.6 | 63 | 5.7 | <5.00 | <50 |
| | | | | | | | | | | | | | | | | | |
| 7/19/2006 | 10:45 | Logan West | Grab | 0.412 | 0.256 | 2.16 | 0.881 | 0.701 | 7.02 | 128 | 3500 | | 251 | 120 | 15.0 | 11.9 | <50.0 |
| 9/22/2006 | 8:35 | Logan West | Grab | 0.169 | 0.118 | 0.512 | 0.405 | <0.500 | <2.0 | 82.6 | 30000 | 3.9 | 15.2 | 39.6 | 5.9 | 6.4 | <50 |
| 11/28/2006 | 10:45 | Logan West | Grab | 0.289 | 0.083 | 0.890 | 0.128 | <0.500 | <2.0 | 77.0 | 600 | 27.2 | 19 | 81 | 9.4 | 7.5 | 50 |
| | | | | | | | | | | | | | | | | | |
| 5/8/2006 | 22:19 | Logan Outlet | Composite | 0.752 | 0.101 | 3.76 | 0.220 | 1.17 | 715 | 1055 | | 13 | 308 | 574 | 33.8 | 102 | 151 |
| 6/6/2006 | 9:44 | Logan Outlet | Composite | 0.530 | 0.222 | 2.89 | 0.127 | 0.644 | 245 | 990 | | 13 | 34 | 566 | 17.5 | 16.6 | <50.0 |
| 6/16/2006 | 21:16 | Logan Outlet | Composite | 0.608 | n/c | 2.05 | 0.155 | 1.02 | 198 | 348 | | n/c | 92 | 380 | 15.2 | 24.8 | <50.0 |
| 7/24/2006 | 10:29 | Logan Outlet | Composite | 0.470 | 0.134 | 2.49 | 0.145 | 0.511 | 95.2 | 472 | | 9 | 30 | 290 | 8.00 | 10.1 | <50 |
| 8/2/2006 | 3:49 | Logan Outlet | Composite | 0.850 | 0.138 | 2.42 | 0.076 | 1.094 | 60.1 | 331 | | 9 | 65 | 207 | 11.2 | 15 | <50 |
| 8/2/2006 | 19:45 | Logan Outlet | Composite | 0.659 | 0.148 | 1.73 | 0.046 | 0.527 | 49.9 | 262 | | 9 | 21 | 174 | 5.10 | 5.10 | <50 |
| 8/24/2006 | 20:01 | Logan Outlet | Composite | 0.593 | 0.176 | 2.89 | 0.220 | 1.03 | 21.4 | 145 | | 5 | 134 | 90 | 18.7 | 45.1 | <50 |
| 9/3/2006 | 22:17 | Logan Outlet | Composite | 0.554 | n/c | 2.56 | n/c | n/c | 24.2 | 174 | | n/c | 54 | 120 | 13.9 | 20.4 | <50 |
| 9/17/2006 | 13:15 | Logan Outlet | Composite | 0.736 | n/c | 3.80 | 0.154 | 0.220 | 23.4 | 190 | | n/c | 123 | 143 | 31 | 31.0 | <50 |
| 9/24/2006 | 0:00 | Logan Oulet | Composite | 0.432 | n/c | n/c | n/c | n/c | 23 | 172 | | n/c | 28 | 98.7 | 8.2 | 7.5 | <50 |
| 10/16/2006 | 7:15 | Logan Outlet | Composite | 5.200 | 2.215 | 17.290 | n/c | 2.490 | n/c | | | 150 | | | 66.8 | 96.6 | 292 |
| 11/28/2006 | 11:05 | Logan Outlet | Grab | | | | | | | | 1300 | | | | | | |
| 12/12/2006 | 10:45 | Logan Outlet | Grab | 0.988 | 0.525 | 2.740 | 0.122 | 0.921 | 58.0 | 388 | 11000 | 15.8 | 24 | 232 | 5.7 | 7.70 | <50 |

**Notes: n/c = not collected due to limited sample volume or expired holding time. May TKN data failed monthly blind performance standard, data underlined and marked suspect.**

**Table 24C. 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 24D. Event mean concentration statistics for Logan Pond in 2006.**

| Site Location | Statistical Function | TP mg/L | TDP mg/L | TKN mg/L | NO3NO2 mg/L | NH3 mg/L | Cl mg/L | Sp.Cond. µmhos/cm | F. Coli cfu/100mL | Field pH | cBOD mg/L | TSS mg/L | TDS mg/L | Cu µg/L | Pb µg/L | Zn µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Logan Inlet | MEAN | 0.874 | 0.621 | 3.18 | 0.302 | 1.02 | 22.7 | 161 | 5550 | 7.2 | 44.7 | 89 | 144 | 22.9 | 24.8 | 87.2 |
| Logan Inlet | MEDIAN | 0.591 | 0.189 | 3.03 | 0.276 | 0.871 | 7.24 | 96.6 | 5550 | 7.2 | 18.0 | 98 | 90 | 24.1 | 26.1 | 87.0 |
| Logan Inlet | STDEV | 0.900 | 0.963 | 1.53 | 0.188 | 0.631 | 41.8 | 154 | 3465 | | 68.9 | 42 | 110 | 7.63 | 11.2 | 13.0 |
| Logan Inlet | MAXIMUM | 3.37 | 2.77 | 5.74 | 0.648 | 2.38 | 133 | 567 | 8000 | 7.2 | 198 | 144 | 338 | 36.8 | 39.5 | 100 |
| Logan Inlet | MINIMUM | 0.324 | 0.139 | 1.13 | 0.047 | 0.365 | 4.00 | 55.9 | 3100 | 7.2 | 7.0 | 29 | 50 | 13.0 | 11.4 | 67.0 |
| Logan Inlet | NUMBER | 10 | 7 | 9 | 9 | 8 | 9 | 10 | 2 | 1 | 7 | 10 | 10 | 10 | 10 | 5 |
| | | | | | | | | | | | | | | | | |
| Logan East | MEAN | 0.244 | 0.134 | 1.23 | 0.479 | 0.405 | 1.87 | 87.6 | 2387 | 7.2 | 4.79 | 22 | 73 | 10.5 | 4.30 | 25.0 |
| Logan East | MEDIAN | 0.202 | 0.114 | 0.810 | 0.418 | 0.250 | 1.00 | 78.5 | 1400 | 7.2 | 4.79 | 13 | 63 | 5.70 | 2.50 | 25.0 |
| Logan East | STDEV | 0.137 | 0.073 | 0.845 | 0.326 | 0.268 | 1.51 | 23.2 | 2851 | | 0.834 | 17 | 32 | 8.63 | 3.12 | 0.0 |
| Logan East | MAXIMUM | 0.397 | 0.214 | 2.20 | 0.831 | 0.714 | 3.61 | 114 | 5600 | 7.2 | 5.38 | 42 | 109 | 20.5 | 7.90 | 25.0 |
| Logan East | MINIMUM | 0.134 | 0.073 | 0.672 | 0.187 | 0.250 | 1.00 | 70.3 | 160 | 7.2 | 4.20 | 12 | 47 | 5.40 | 2.50 | 25.0 |
| Logan East | NUMBER | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 2 | 3 | 3 | 3 | 3 | 3 |
| | | | | | | | | | | | | | | | | |
| Logan West | MEAN | 0.290 | 0.152 | 1.19 | 0.471 | 0.400 | 3.01 | 95.9 | 11367 | 7.9 | 15.6 | 95 | 80 | 10.1 | 8.60 | 33.3 |
| Logan West | MEDIAN | 0.289 | 0.118 | 0.890 | 0.405 | 0.250 | 1.00 | 82.6 | 3500 | 7.9 | 15.6 | 19 | 81 | 9.40 | 7.50 | 25.0 |
| Logan West | STDEV | 0.122 | 0.091 | 0.863 | 0.381 | 0.260 | 3.48 | 28.0 | 16202.0 | | 16.5 | 135 | 40 | 4.59 | 2.91 | 14.4 |
| Logan West | MAXIMUM | 0.412 | 0.256 | 2.16 | 0.881 | 0.701 | 7.02 | 128 | 30000 | 7.9 | 27.2 | 251 | 120 | 15.0 | 11.9 | 50.0 |
| Logan West | MINIMUM | 0.169 | 0.083 | 0.512 | 0.128 | 0.250 | 1.00 | 77.0 | 600 | 7.9 | 3.90 | 15 | 40 | 5.90 | 6.40 | 25.0 |
| Logan West | NUMBER | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 2 | 3 | 3 | 3 | 3 | 3 |
| | | | | | | | | | | | | | | | | |
| Logan Outlet | MEAN | 1.03 | 0.457 | 4.06 | 0.141 | 0.963 | 138 | 412 | 6150 | 7.0 | 28.0 | 83 | 261 | 19.6 | 31.8 | 57.8 |
| Logan Outlet | MEDIAN | 0.634 | 0.162 | 2.74 | 0.145 | 0.971 | 58.0 | 331 | 6150 | 7.0 | 11.2 | 54 | 207 | 14.6 | 18.5 | 25.0 |
| Logan Outlet | STDEV | 1.32 | 0.723 | 4.43 | 0.058 | 0.619 | 206 | 319 | 6859 | | 49.4 | 85 | 175 | 17.5 | 33.5 | 82.2 |
| Logan Outlet | MAXIMUM | 5.20 | 2.22 | 17.3 | 0.220 | 2.49 | 715 | 1055 | 11000 | 7.0 | 150 | 308 | 574 | 66.8 | 102 | 292 |
| Logan Outlet | MINIMUM | 0.432 | 0.101 | 1.73 | 0.046 | 0.220 | 21.4 | 145 | 1300.0 | 7.0 | 5.30 | 21 | 90 | 5.10 | 5.10 | 25.0 |
| Logan Outlet | NUMBER | 12 | 8 | 11 | 9 | 10 | 11 | 11 | 2 | 1 | 8 | 11 | 11 | 12 | 12 | 12 |

**Table 24E. Event mean concentration statistics for Logan Pond in 2005 and 2006 combined.**

| Site Location | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Logan Inlet | MEAN | 0.733 | 0.419 | 2.80 | 0.392 | 0.931 | 11.7 | 29.1 | 114 | 209183 | 39900 | 7.2 | 28.8 | 110 | 102 | 2.50 | 22.9 | 24.8 | 56.1 |
| Logan Inlet | MEDIAN | 0.573 | 0.184 | 2.44 | 0.349 | 0.790 | 3.38 | 30.0 | 71.6 | 48000 | 39900 | 7.2 | 11.8 | 113 | 67 | 2.50 | 24.1 | 26.1 | 46.0 |
| Logan Inlet | STDEV | 0.676 | 0.719 | 1.25 | 0.217 | 0.530 | 29.9 | 3.98 | 120 | 395863 | | 0.438 | 51.9 | 63.2 | 90 | 0.00 | 7.63 | 11.2 | 33.9 |
| Logan Inlet | MAXIMUM | 3.37 | 2.77 | 5.74 | 0.872 | 2.38 | 133 | 34.0 | 567 | 1011000 | 39900 | 7.7 | 198 | 288 | 338 | 2.50 | 36.8 | 39.5 | 100 |
| Logan Inlet | MINIMUM | 0.273 | 0.139 | 1.13 | 0.047 | 0.25 | 1 | 24.0 | 52.4 | 3100 | 39900 | 6.6 | 6.76 | 29.3 | 39 | 2.50 | 13 | 11.4 | 25.0 |
| Logan Inlet | NUMBER | 19 | 13 | 18 | 18 | 18 | 19 | 7 | 19 | 6 | 1 | 6 | 13 | 19 | 19 | 9 | 10 | 10 | 10 |
| | | | | | | | | | | | | | | | | | | | |
| Logan East | MEAN | 0.391 | 0.208 | 1.73 | 0.712 | 0.778 | 1.85 | 43.7 | 87.7 | 29162 | 1460 | 7.6 | 10.2 | 39.6 | 95.0 | 2.50 | 19.0 | 20.3 | 28.6 |
| Logan East | MEDIAN | 0.397 | 0.176 | 1.36 | 0.547 | 0.526 | 1.00 | 46.0 | 85.6 | 1500 | 1460 | 7.5 | 9.45 | 29.2 | 109 | 2.50 | 20.5 | 17.9 | 25.0 |
| Logan East | STDEV | 0.200 | 0.119 | 1.05 | 0.508 | 0.671 | 1.07 | 11.3 | 40.9 | 46953 | | 0.367 | 6.76 | 27.6 | 38.1 | 0.00 | 12.5 | 17.0 | 9.59 |
| Logan East | MAXIMUM | 0.708 | 0.470 | 3.67 | 1.52 | 2.16 | 3.61 | 58.0 | 131 | 128000 | 1460 | 8.2 | 21.0 | 80.5 | 145 | 2.50 | 40.2 | 51.3 | 54.0 |
| Logan East | MINIMUM | 0.134 | 0.073 | 0.672 | 0.180 | 0.250 | 1.00 | 24.0 | 9.00 | 160 | 1460 | 7.2 | 2.09 | 11.6 | 46.8 | 2.50 | 2.50 | 2.50 | 25.0 |
| Logan East | NUMBER | 9 | 9 | 9 | 9 | 9 | 9 | 6 | 9 | 9 | 1 | 5 | 8 | 9 | 9 | 6 | 9 | 9 | 9 |
| | | | | | | | | | | | | | | | | | | | |
| Logan West | MEAN | 0.375 | 0.217 | 1.58 | 0.648 | 0.650 | 2.39 | 37.4 | 112 | 13850 | 3995 | 7.9 | 9.99 | 61.5 | 98.9 | 2.50 | 16.1 | 10.1 | 30.5 |
| Logan West | MEDIAN | 0.332 | 0.205 | 1.47 | 0.654 | 0.672 | 2.14 | 44.0 | 108 | 3500 | 3995 | 7.6 | 8.89 | 30.8 | 105 | 2.50 | 16.4 | 9.50 | 25.0 |
| Logan West | STDEV | 0.154 | 0.095 | 0.745 | 0.344 | 0.304 | 1.95 | 19.9 | 33.1 | 16019 | | 0.619 | 7.71 | 75.3 | 30.3 | 0.00 | 6.71 | 4.34 | 10.9 |
| Logan West | MAXIMUM | 0.719 | 0.395 | 2.78 | 1.17 | 1.06 | 7.02 | 58.0 | 184 | 43000 | 3995 | 8.9 | 27.2 | 251 | 140 | 2.50 | 29.8 | 18.5 | 50.0 |
| Logan West | MINIMUM | 0.169 | 0.083 | 0.512 | 0.128 | 0.250 | 1.00 | 0.500 | 77.0 | 600 | 3995 | 7.3 | 3.74 | 15.2 | 39.6 | 2.50 | 5.90 | 5.70 | 25.0 |
| Logan West | NUMBER | 9 | 9 | 9 | 9 | 9 | 9 | 6 | 9 | 9 | 1 | 5 | 8 | 9 | 9 | 6 | 9 | 9 | 9 |
| | | | | | | | | | | | | | | | | | | | |
| Logan Outlet | MEAN | 0.802 | 0.320 | 3.29 | 0.189 | 1.06 | 86.5 | 41.0 | 297 | 18822 | 20140 | 7.4 | 18.7 | 88.8 | 193 | 2.5 | 18.7 | 32.9 | 51.0 |
| Logan Outlet | MEDIAN | 0.574 | 0.148 | 2.56 | 0.155 | 0.898 | 35.5 | 36.0 | 190 | 11000 | 20140 | 7.0 | 8.96 | 65.3 | 143 | 2.5 | 16.4 | 22.6 | 25.0 |
| Logan Outlet | STDEV | 0.994 | 0.534 | 3.26 | 0.109 | 0.717 | 157 | 12.5 | 268 | 27135 | | 0.749 | 36.5 | 73.6 | 149 | 0 | 13.9 | 29.4 | 62.7 |
| Logan Outlet | MAXIMUM | 5.20 | 2.22 | 17.3 | 0.453 | 2.73 | 715 | 68.0 | 1055 | 86100 | 20140 | 9.0 | 150 | 308 | 574 | 2.5 | 66.8 | 102 | 292 |
| Logan Outlet | MINIMUM | 0.356 | 0.094 | 1.68 | 0.046 | 0.22 | 4.88 | 30.0 | 77.0 | 0.500 | 20140 | 6.9 | 3.96 | 21.3 | 61.0 | 2.5 | 2.50 | 5.10 | 25.0 |
| Logan Outlet | NUMBER | 22 | 15 | 21 | 19 | 20 | 21 | 8 | 21 | 9 | 1 | 7 | 15 | 21 | 21 | 10 | 22 | 22 | 22 |

**Table 24F. 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% |
| Total Input | 2,157,800 | -- |
| Logan Outlet | 1,040,000 | 48% |

**Table 24G. Volumes recorded for Logan Pond, 5/5/06 – 11/29/2006.**

| Location | Volume Recorded (cubic feet) | Percent of Total Input |
|---|---|---|
| Logan Inlet | 1,506,490 | 97% |
| Logan East | 26,108 | 2% |
| Logan West | 15,550 | 1% |
| Total Input | 1,548,148 | -- |
| Logan Outlet | 1,510,996 | 98% |

**Table 24H. Volumes recorded for Logan Pond, 2005 – 2006 combined.**

| Location | Volume Recorded (cubic feet) | Percent of Total Input |
|---|---|---|
| Logan Inlet | 3,306,490 | 89% |
| Logan East | 63,908 | 2% |
| Logan West | 335,550 | 9% |
| Total Input | 3,705,948 | |
| Logan Outlet | 2,550,996 | 69% |

**Table 24I. Estimated pollutant loads for Logan Pond, 7/7/05 – 10/31/2005.**

| Location | 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 | 0.127 | 1.10 | 2.36 | 5.09 |
| **Logan East** | 0.602 | 0.318 | 2.56 | 1.07 | 1.25 | 2.39 | 5.52E+11 | 16 | 62.7 | 137 | 0.003 | 0.030 | 0.037 | 0.039 |
| **Logan West** | 3.78 | 2.26 | 16.1 | 6.67 | 7.01 | 18.9 | 1.37E+12 | 74 | 405 | 980 | 0.023 | 0.173 | 0.099 | 0.263 |
| **Logan Outlet** | 15.5 | 4.82 | 71.9 | 6.85 | 34.0 | 890 | 6.59E+12 | 235 | 2,800 | 3,480 | 0.074 | 0.518 | 1.01 | 1.26 |
| **Total Removed:** | **18.2** | **7.08** | **69.7** | **25.4** | **21.4** | **-767** | **1.54E+14** | **371** | **4,500** | **459** | **0.080** | **0.783** | **1.49** | **4.14** |
| **Percent Removed:** | **54%** | **60%** | **49%** | **79%** | **39%** | **-624%** | **96%** | **61%** | **62%** | **12%** | **52%** | **60%** | **60%** | **77%** |

**Table 24J. Estimated pollutant loads for Logan Pond, 5/5/06 – 11/28/2006.**

| Location | TP kg | TDP kg | TKN kg | NO3NO2 kg | NH3 kg | Cl kg | F. coli cfu | cBOD kg | TSS kg | TDS kg | Cu kg | Pb kg | Zn kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Logan Inlet** | 37.3 | 26.5 | 135 | 12.9 | 43.6 | 966 | 236,617 | 1,907 | 3,780 | 6,139 | 0.975 | 1.06 | 3.72 |
| **Logan East** | 0.181 | 0.099 | 0.907 | 0.354 | 0.299 | 1.382 | 1,763 | 3.539 | 16.4 | 53.9 | 0.008 | 0.003 | 0.018 |
| **Logan West** | 0.128 | 0.067 | 0.523 | 0.207 | 0.176 | 1.32 | 5,002 | 6.84 | 41.8 | 35.3 | 0.004 | 0.004 | 0.015 |
| **Logan Outlet** | 44.1 | 19.6 | 173 | 6.01 | 41.2 | 5,882 | 262,981 | 1,197 | 3,550 | 11,176 | 0.838 | 1.36 | 2.47 |
| **Total Removed:** | **(6.5)** | **7.1** | **(37)** | **7.4** | **2.9** | **(4,914)** | **(19,599.0)** | **721** | **288** | **(4,948)** | **0.150** | **(0.299)** | **1.28** |
| **Percent Removed:** | **-17%** | **27%** | **-27%** | **55%** | **7%** | **-507%** | **-8%** | **38%** | **7%** | **-79%** | **15%** | **-28%** | **34%** |

**Table 24K. Estimated pollutant loads for Logan Pond, 2005 – 2006 combined.**

| Location | 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** | 68.6 | 39.2 | 262 | 36.6 | 87.1 | 1,098 | 19,574,052 | 2,692 | 10,312 | 9,549 | 0.234 | 2.14 | 2.32 | 5.25 |
| **Logan East** | 0.708 | 0.376 | 3.12 | 1.29 | 1.41 | 3.35 | 52,743 | 18 | 71.7 | 172 | 0.005 | 0.034 | 0.037 | 0.052 |
| **Logan West** | 3.56 | 2.06 | 15.0 | 6.15 | 6.17 | 22.7 | 131,521 | 95 | 584 | 939 | 0.024 | 0.153 | 0.096 | 0.290 |
| **Logan Outlet** | 57.9 | 23.1 | 237 | 13.7 | 76.5 | 6,241 | 1,358,840 | 1,347 | 6,411 | 13,952 | 0.180 | 1.35 | 2.37 | 3.68 |
| **Total Removed:** | 14.92 | 18.5 | 42.4 | 30.4 | 18.2 | -5117 | 18,399,475 | 1,458 | 4,557 | (3,292) | 0.082 | 0.980 | 0.075 | 1.91 |
| **Percent Removed:** | **20%** | **44%** | **15%** | **69%** | **19%** | **-455%** | **93%** | **52%** | **42%** | **-31%** | **31.2%** | **42.1%** | **3.05%** | **34.2%** |

Bacteria grab samples collected during the 2005-2006 sampling seasons are presented in Table 24L. Most fecal coliform samples were comparable to samples collected from the NPDES stormwater monitoring (Table 23F, Appendix A3).

**Table 24L. Bacteria grab samples from Logan Pond in 2006.**

| Date | Time | Site Location | F. Coli cfu/100mL | E. Coli mpn/100mL |
|---|---|---|---|---|
| 7/23/2005 | 10:15 | Outlet | 1000 | |
| 7/25/2005 | 11:35 | Outlet | 16000 | |
| 8/26/2005 | 9:33 | Inlet | 32000 | 39900 |
| 8/26/2005 | 9:10 | West | 2000 | 3995 |
| 8/26/2005 | 8:45 | Outlet | 19000 | 20140 |
| 9/28/2005 | 9:30 | Inlet | 137000 | |
| 9/28/2005 | 9:15 | Outlet | 5000 | |
| 7/19/2006 | 11:05 | East | 5600 | |
| 7/19/2006 | 10:45 | West | 3500 | |
| 9/22/2006 | 8:30 | East | 1400 | |
| 9/22/2006 | 8:35 | West | 30000 | |
| 11/28/2006 | 10:55 | Inlet | 3100 | |
| 11/28/2006 | 10:50 | East | 160 | |
| 11/28/2006 | 10:45 | West | 600 | |
| 11/28/2006 | 11:05 | Outlet | 1300 | |
| 12/12/2006 | 10:55 | Inlet | 8000 | |
| 12/12/2006 | 10:45 | Outlet | 11000 | |

Six rain events in 2005 and four rain events in 2006 resulted in pipe surcharges at Logan Pond. Surcharged events are listed in Table 24M. There were no recorded surcharges in 2006 for the inlet, west alley or outlet.

**Table 24M. Surcharged events at Logan Pond 2005-2006. Daily rainfall was recorded from the MPRB rain gage located at 3800 Bryant Ave. S., Minneapolis.**

| Date | Daily Rainfall (inches) | East Alley | West Alley | Outlet |
|---|---|---|---|---|
| 7/25/2005 | 1.78 | X | | |
| 8/26/2005 | 2.00 | X | | |
| 9/4/2005 | 0.77 | X | | |
| 9/21/2005 | 0.60 | X | | |
| 10/4/2005 | 4.31 | X | X | X |
| 10/5/2005 | 0.50 | X | | |
| 5/8/2006 | 0.57 | X | | |
| 6/17/2006 | 0.11 | X | | |
| 8/2/2006 | 3.88 | X | | |
| 8/23/2006 | 0.92 | X | | |

In 2005 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 should 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.

In 2006 negative velocities were recorded at the inlet, outlet and east alley. Area velocity probes were used at both alleys. Negative velocities were recorded at the inlet on 12/6/06 and outlet on 6/6/06 (sampled), 6/16/06 (sampled), 6/27/06, 7/22/06, 8/1/06, 8/13/06, 8/23/06, 8/24/06 (sampled) and 11/28/06 (sampled). The east alley frequently had standing water in the pipe during both years. 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 is also possible that the outlet grate plugs with debris. 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 water backing up from the pond into the pipe.

Many rain events were unusually large in 2005 resulting in greater than normal flow volumes. 2006 was a drier year than normal but there were a few large storms. It is uncertain why the outlet recorded negative velocities in 2005. 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 2005-2006 events sampled. Evaluating the pollutant load estimates, it seems Logan Pond offered some definite water quality benefits. For the time period 2005-2006 Logan Pond provided roughly 40 to 50 percent removal of many pollutants including total dissolved phosphorus, nitrate+nitrite, cBOD and TSS which would have otherwise entered downstream water bodies. Further monitoring with continued maintenance 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 were measured and mapped during 2006 summer 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
- Continue to measure depth of pond sediment to ensure proper function and decrease risk of sediment resuspension
- Add a staff gage to record depth of the pond in relation to standing water in pipes

EDITOR'S NOTE: This document has been adapted from Section 24B of the Minneapolis Park & Recreation Board's *2006 Water Resources Report*. The complete versions of these annual reports can be found at the following website: http://www.minneapolisparks.org/default.asp?PageID=791

# 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 and 2006, the MPRB monitored the permeable paver lot located at the City of Minneapolis' Animal Shelter located at 212 17th Avenue North, Minneapolis. Permeable pavers were used as part of an innovative building design project to help reduce runoff flow volumes. The project was designed to reduce stormwater and pollutant runoff by more than 50 percent.

The drainage area was measured to be 5,777 square feet which included the 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 site 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 and May to October 2006. 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. The equipment in 2005 included a level/pressure transducer with ISCO 4120 datalogger and was installed on 5/27/05. The equipment in 2006 included a area/velocity transducer with ISCO 4150 datalogger and was installed on 5/3/05. Data were downloaded approximately every two weeks.

A tipping bucket rain gage was installed on the Animal Shelter building roof from 8/31/05 - 11/2/05 and 5/3/06 – 11/9/06. 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 in 2005 and in 2006 (from 6/16/06 - 8/6/06) to augment missing data. The WOMP rain gauge is located near the Minneapolis Vehicle Impound Lot approximately 2.1 miles away. More information on the Bassett's Creek WOMP station can be found in Section 21 of the Minneapolis Park & Recreation Board 2006 Water Resources Report at the following website: http://www.minneapolisparks.org/default.asp?PageID=791

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. In 2005 a total of 28 storm events were recorded and in 2006 a total of 26 storm events were recorded. A storm event is defined as having 0.10 inches of rainfall or greater separated by eight hours. Some events occurred in 2005 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 and cannot be used in the calculations because the water volume and therefore infiltration is unknown.

Several large rain events occurred in 2005 and 2006 resulting in pipe surcharges. In 2005 six events surcharged resulting in inaccurate flow recordings, Table 24G. The 2005 surcharge flow calculations were inaccurate due to the level probe used. In 2006 five events surcharged. The 2006 surcharges were less of a problem to calculate, because an area velocity probe was used. Recorded peak levels for surcharge 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 - 2006. 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 | |
| **2006** | | | | | | | |
| 5/8-9/06 | 1.27 | 0.05 | 2.50 | 611 | 106 | 83 | |
| 5/12-13/06 | 0.67 | 0.03 | 5.00 | 323 | 313 | 3 | |
| 5/24-25/06 | 0.38 | 0.01 | 1.25 | 183 | 21.8 | 88 | |
| 6/1/06 | 0.10 | 0.10 | 0.25 | 48 | 0.00 | 100 | |
| 6/5/06 | 0.73 | 1.83 | 18.0 | 351 | 112 | 68 | SURCHARGED |
| 6/16-17/06 | 2.99 | 0.43 | 30.0 | 1439 | 1395 | 3 | SURCHARGED |
| 6/17/06 | 0.14 | 0.06 | 0.10 | 67 | 2.80 | 96 | |
| 6/24-26/06 | 0.59 | 0.03 | 1.00 | 284 | 48.0 | 83 | |
| 7/1/06 | 0.16 | 0.64 | 1.25 | 77 | 0.00 | 100 | |
| 7/11/06 | 0.27 | 0.36 | 0.50 | 130 | 0.10 | 100 | |
| 7/13-16/06 | 0.46 | 0.04 | 0.06 | 221 | 0.00 | 100 | |
| 7/19/06 | 0.37 | 0.07 | 3.00 | 178 | 1.80 | 99 | |
| 7/24/06 | 1.40 | 0.51 | 32.0 | 674 | 47.4 | 93 | SURCHARGED |
| 7/25/06 | 0.12 | 0.24 | 0.06 | 58 | 0.10 | 100 | |
| 8/1-2/06 | 3.85 | 0.64 | 33.0 | 1853 | 1020 | 45 | SURCHARGED |
| 8/6/06 | 0.37 | 0.49 | 0.60 | 178 | 0.40 | 100 | |
| 8/13/06 | 0.42 | 0.07 | 0.50 | 202 | 0.00 | 100 | |
| 8/23/06 | 0.78 | 0.35 | 2.00 | 376 | 23.4 | 94 | |
| 8/24/06 | 1.54 | 0.08 | 38.0 | 741 | 480 | 35 | SURCHARGED |
| 9/2-3/06 | 0.97 | 0.04 | 0.20 | 467 | 0.00 | 100 | |
| 9/16/06 | 0.27 | 0.07 | 0.10 | 130 | 0.50 | 100 | |
| 9/17/06 | 0.15 | 0.15 | 0.10 | 72 | 0.70 | 99 | |
| 9/21-22/06 | 0.82 | 0.10 | 0.30 | 395 | 31.0 | 92 | |
| 9/23/06 | 0.26 | 0.07 | 0.20 | 125 | 8.70 | 93 | |
| 10/11/06 | 0.21 | 0.05 | 0.25 | 101 | 7.50 | 93 | |
| 10/16/06 | 0.29 | 0.03 | 0.40 | 140 | 6.60 | 95 | |
| **2005 Total** | | | | **11,839** | **48,996** | **-314** | |
| **2005 Total (Without Surcharges)** | | | | **5,841** | **6,101** | **-4** | |
| **2006 Total** | | | | **9,426** | **3,627** | **62** | |
| **2005 - 2006 Total Combined** | | | | **21,265** | **52,623** | **-147** | |

In 2005 a total of 13 events showed positive treatment percentages. Nine 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. It is possible that the drainage area could have different sizes for different events. The known contributing drainage area was measured by MPRB staff, however 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 not currently known if these leaders contribute to the paver lot around certain sized rain events. Careful monitoring of the adjacent building's drainage would be necessary to determine if it is contributing to the total flow of the pipe. It is possible that the pipe could backup from downstream. Additionally trash is often found within the pipe which may influence level readings. Further monitoring is necessary to investigate these possibilities.

In 2006 all events showed positive treatment percentages. The 2006 data show an overall 62% infiltration. An area/velocity meter used in 2006 was useful in determining pipe backups and calculating surcharge event flow volumes. From a qualitative perspective, the permeable pavers appear to be functioning well with little or no ponding visible during rain events.

# 2006 ANNUAL POLLUTANT LOADINGS BY RECEIVING WATER

**2006 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 | 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 |
| Mean Flow Weighted Mean Concentration - all 2006 sites | | | 9.00 | 156 | 183 | 3.54 | 1.640 | 0.638 | 0.548 | 0.135 | 0.029 | 0.031 | 0.094 |
| Mississippi River (Minneapolis) | 0.46 | 18077 | 180,412.9 | 3,127,156.8 | 3,668,395.4 | 70,962.4 | 32,875.2 | 12,789.3 | 10,985.1 | 2,706.2 | 577.3 | 621.4 | 1,884.3 |
| Shingle Creek | 0.44 | 1365 | 13,083.6 | 226,783.1 | 561,146.1 | 5,146.2 | 2,384.1 | 927.5 | 796.6 | 196.3 | 41.9 | 45.1 | 136.7 |
| Ryan Lake (Minneapolis) | 0.45 | 49 | 485.6 | 8,416.7 | 20,826.0 | 191.0 | 88.5 | 34.4 | 29.6 | 7.3 | 1.6 | 1.7 | 5.1 |
| Bassett Creek | 0.44 | 2293 | 21,867.3 | 379,033.5 | 937,870.4 | 8,601.1 | 3,984.7 | 1,550.1 | 1,331.5 | 328.0 | 70.0 | 75.3 | 228.4 |
| New Bassett Creek Tunnel | 0.45 | 219 | 2,130.4 | 36,927.2 | 91,371.6 | 838.0 | 388.2 | 151.0 | 129.7 | 32.0 | 6.8 | 7.3 | 22.3 |
| Brownie Lake (Minneapolis) | 0.45 | 34 | 328.9 | 5,701.3 | 14,107.2 | 129.4 | 59.9 | 23.3 | 20.0 | 4.9 | 1.1 | 1.1 | 3.4 |
| Cedar Lake (Minneapolis) | 0.38 | 224 | 1,823.9 | 31,614.6 | 78,226.2 | 717.4 | 332.4 | 129.3 | 111.1 | 27.4 | 5.8 | 6.3 | 19.0 |
| Lake of the Isles | 0.42 | 760 | 6,941.0 | 120,310.3 | 297,692.5 | 2,730.1 | 1,264.8 | 492.0 | 422.6 | 104.1 | 22.2 | 23.9 | 72.5 |
| Lake Calhoun (Minneapolis) | 0.46 | 1249 | 12,382.3 | 214,626.3 | 531,065.7 | 4,870.4 | 2,256.3 | 877.8 | 753.9 | 185.7 | 39.6 | 42.7 | 129.3 |
| Cemetary Lake | 0.60 | 205 | 2,639.3 | 45,747.7 | 113,196.8 | 1,038.1 | 480.9 | 187.1 | 160.7 | 39.6 | 8.4 | 9.1 | 27.6 |
| Sanctuary Pond | 0.60 | 68 | 879.2 | 15,240.2 | 37,709.9 | 345.8 | 160.2 | 62.3 | 53.5 | 13.2 | 2.8 | 3.0 | 9.2 |
| Lake Harriet | 0.46 | 863 | 8,664.1 | 150,177.1 | 371,594.2 | 3,407.9 | 1,578.8 | 614.2 | 527.5 | 130.0 | 27.7 | 29.8 | 90.5 |
| Hart Lake (Minneapolis) | 0.55 | 3 | 34.2 | 593.0 | 1,467.4 | 13.5 | 6.2 | 2.4 | 2.1 | 0.5 | 0.1 | 0.1 | 0.4 |
| Silver Lake (Minneapolis) | 0.44 | 28 | 267.9 | 4,643.2 | 11,489.0 | 105.4 | 48.8 | 19.0 | 16.3 | 4.0 | 0.9 | 0.9 | 2.8 |
| Crystal Lake (Minneapolis) | 0.45 | 469 | 4,578.8 | 79,366.7 | 196,382.8 | 1,801.0 | 834.4 | 324.6 | 278.8 | 68.7 | 14.7 | 15.8 | 47.8 |
| Legion Lake (Minneapolis) | 0.45 | 49 | 481.8 | 8,352.0 | 20,666.0 | 189.5 | 87.8 | 34.2 | 29.3 | 7.2 | 1.5 | 1.7 | 5.0 |
| Richfield Lake (Minneapolis) | 0.32 | 715 | 4,958.4 | 85,944.9 | 212,659.8 | 1,950.3 | 903.5 | 351.5 | 301.9 | 74.4 | 15.9 | 17.1 | 51.8 |
| Minnehaha Creek | 0.44 | 3213 | 30,725.8 | 532,580.0 | 1,317,801.8 | 12,085.5 | 5,598.9 | 2,178.1 | 1,870.9 | 460.9 | 98.3 | 105.8 | 320.9 |
| Diamond Lake | 0.47 | 685 | 6,917.4 | 119,901.5 | 296,681.0 | 2,720.8 | 1,260.5 | 490.4 | 421.2 | 103.8 | 22.1 | 23.8 | 72.2 |
| Lake Nokomis | 0.40 | 620 | 5,395.4 | 93,520.3 | 231,404.2 | 2,122.2 | 983.2 | 382.5 | 328.5 | 80.9 | 17.3 | 18.6 | 56.4 |
| Taft Lake | 0.37 | 100 | 793.4 | 13,752.2 | 34,028.1 | 312.1 | 144.6 | 56.2 | 48.3 | 11.9 | 2.5 | 2.7 | 8.3 |
| Mother Lake (Minneapolis) | 0.48 | 49 | 511.7 | 8,869.6 | 21,946.7 | 201.3 | 93.2 | 36.3 | 31.2 | 7.7 | 1.6 | 1.8 | 5.3 |
| Unnamed Wetland W of Mother Lake | 0.41 | 41 | 361.4 | 6,264.5 | 15,500.7 | 142.2 | 65.9 | 25.6 | 22.0 | 5.4 | 1.2 | 1.2 | 3.8 |
| Lake Hiawatha | 0.46 | 1008 | 10,032.7 | 173,900.8 | 430,295.6 | 3,946.2 | 1,828.2 | 711.2 | 610.9 | 150.5 | 32.1 | 34.6 | 104.8 |
| Birch Pond | 0.10 | 31 | 67.5 | 1,170.8 | 2,897.1 | 26.6 | 12.3 | 4.8 | 4.1 | 1.0 | 0.2 | 0.2 | 0.7 |
| Powderhorn Lake | 0.46 | 286 | 2,853.6 | 49,461.5 | 122,386.3 | 1,122.4 | 520.0 | 202.3 | 173.7 | 42.8 | 9.1 | 9.8 | 29.8 |
| Grass Lake | 0.46 | 386 | 3,829.8 | 66,382.4 | 164,254.9 | 1,506.4 | 697.9 | 271.5 | 233.2 | 57.4 | 12.3 | 13.2 | 40.0 |
| Unnamed Wetland on Hwy 62 | 0.47 | 17 | 172.6 | 2,991.1 | 7,401.1 | 67.9 | 31.4 | 12.2 | 10.5 | 2.6 | 0.6 | 0.6 | 1.8 |
| Unnamed Wetland on Ewing Ave S | 0.47 | 22 | 220.1 | 3,814.5 | 9,438.4 | 86.6 | 40.1 | 15.6 | 13.4 | 3.3 | 0.7 | 0.8 | 2.3 |
| **ANNUAL TOTAL KILOGRAMS - Minneapolis** | | 33,127.7 | 323,841.0 | 5,613,243.7 | 9,819,903.2 | 127,377.5 | 59,011.0 | 22,956.7 | 19,718.3 | 4,857.6 | 1,036.3 | 1,115.5 | 3,382.3 |

National Weather Service, Annual Precipitation = 27.56 inches 0.70 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***

Bannerman, R.T., D.W. Owens, R. Dodds, and P. Hughes. 1992. Sources of Pollutants in Wisconsin Stormwater. WI Dept. of Natural Resources, Madison, WI.

Walker, W. W., 1996. *Simplified Procedures for Eutrophication Assessment and Prediction: User Manual*. Instruction Report W-96-2, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

# 2006 POLLUTANT LOADINGS BY OUTFALL

**2006 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean Flow Weighted Mean Concentration - all 2006 sites | | | 9.00 | 156 | 183 | 3.54 | 1.640 | 0.638 | 0.548 | 0.135 | 0.029 | 0.031 | 0.094 |
| Precipitation (meters) | 0.7 | | | | | | | | | | | | |
| 10-010 | 0.43 | 113.55 | 1,061.6 | 18,401.4 | 21,586.3 | 417.6 | 193.5 | 75.3 | 64.6 | 15.9 | 3.4 | 3.7 | 11.1 |
| 10-020 | 0.45 | 7.81 | 76.2 | 1,320.2 | 1,548.7 | 30.0 | 13.9 | 5.4 | 4.6 | 1.1 | 0.2 | 0.3 | 0.8 |
| 10-030 | 0.10 | 4.05 | 8.8 | 152.1 | 178.5 | 3.5 | 1.6 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-040 | 0.45 | 167.42 | 1,621.4 | 28,103.4 | 32,967.5 | 637.7 | 295.4 | 114.9 | 98.7 | 24.3 | 5.2 | 5.6 | 16.9 |
| 10-050 | 0.46 | 114.18 | 1,126.4 | 19,523.7 | 22,902.7 | 443.0 | 205.2 | 79.8 | 68.6 | 16.9 | 3.6 | 3.9 | 11.8 |
| 10-060 | 0.60 | 10.5 | 136.5 | 2,366.5 | 2,776.1 | 53.7 | 24.9 | 9.7 | 8.3 | 2.0 | 0.4 | 0.5 | 1.4 |
| 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 |
| 10-080 | 0.38 | 30.66 | 253.9 | 4,401.1 | 5,162.8 | 99.9 | 46.3 | 18.0 | 15.5 | 3.8 | 0.8 | 0.9 | 2.7 |
| 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 |
| 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 |
| 10-090C | 0.54 | 12.77 | 149.9 | 2,597.6 | 3,047.1 | 58.9 | 27.3 | 10.6 | 9.1 | 2.2 | 0.5 | 0.5 | 1.6 |
| 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 |
| 10-100 | 0.36 | 1392.1 | 10,942.7 | 189,673.9 | 222,502.0 | 4,304.1 | 1,994.0 | 775.7 | 666.3 | 164.1 | 35.0 | 37.7 | 114.3 |
| 10-110 | 0.47 | 300.11 | 3,034.2 | 52,593.1 | 61,695.7 | 1,193.5 | 552.9 | 215.1 | 184.8 | 45.5 | 9.7 | 10.5 | 31.7 |
| 10-120A/B | 0.44 | 372.78 | 3,516.3 | 60,948.6 | 71,497.3 | 1,383.1 | 640.7 | 249.3 | 214.1 | 52.7 | 11.3 | 12.1 | 36.7 |
| 10-130 | 0.45 | 336.46 | 3,292.2 | 57,065.6 | 66,942.4 | 1,295.0 | 599.9 | 233.4 | 200.5 | 49.4 | 10.5 | 11.3 | 34.4 |
| 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 |
| 10-140a,b | 0.58 | 220.65 | 2,751.6 | 47,693.6 | 55,948.3 | 1,082.3 | 501.4 | 195.1 | 167.5 | 41.3 | 8.8 | 9.5 | 28.7 |
| 10-150 | 0.47 | 157.15 | 1,596.8 | 27,678.0 | 32,468.4 | 628.1 | 291.0 | 113.2 | 97.2 | 24.0 | 5.1 | 5.5 | 16.7 |
| 10-160 | 0.00 | 17 | 0.9 | 16.0 | 18.7 | 0.4 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-170 | 0.50 | 176.01 | 1,919.5 | 33,270.8 | 39,029.2 | 755.0 | 349.8 | 136.1 | 116.9 | 28.8 | 6.1 | 6.6 | 20.0 |
| 10-180 | 0.45 | 284.26 | 2,743.3 | 47,549.7 | 55,779.4 | 1,079.0 | 499.9 | 194.5 | 167.0 | 41.1 | 8.8 | 9.4 | 28.7 |
| 10-190 | 0.59 | 14.58 | 187.0 | 3,240.8 | 3,801.7 | 73.5 | 34.1 | 13.3 | 11.4 | 2.8 | 0.6 | 0.6 | 2.0 |
| 10-200 | 0.40 | 42.44 | 365.2 | 6,329.6 | 7,425.1 | 143.6 | 66.5 | 25.9 | 22.2 | 5.5 | 1.2 | 1.3 | 3.8 |
| 10-210 | 0.49 | 98.32 | 1,047.4 | 18,155.0 | 21,297.2 | 412.0 | 190.9 | 74.2 | 63.8 | 15.7 | 3.4 | 3.6 | 10.9 |
| 10-220 | 0.56 | 18.83 | 228.1 | 3,954.5 | 4,638.9 | 89.7 | 41.6 | 16.2 | 13.9 | 3.4 | 0.7 | 0.8 | 2.4 |
| 10-230 | 0.47 | 235.02 | 2,407.5 | 41,730.8 | 48,953.4 | 947.0 | 438.7 | 170.7 | 146.6 | 36.1 | 7.7 | 8.3 | 25.1 |
| 10-240 | 0.51 | 103.83 | 1,155.9 | 20,035.7 | 23,503.5 | 454.7 | 210.6 | 81.9 | 70.4 | 17.3 | 3.7 | 4.0 | 12.1 |
| 10-250 | 0.49 | 242.96 | 2,573.9 | 44,614.5 | 52,336.3 | 1,012.4 | 469.0 | 182.5 | 156.7 | 38.6 | 8.2 | 8.9 | 26.9 |
| 10-260 | 0.56 | 23.77 | 287.0 | 4,974.7 | 5,835.7 | 112.9 | 52.3 | 20.3 | 17.5 | 4.3 | 0.9 | 1.0 | 3.0 |
| 10-270 | 0.47 | 72.45 | 744.0 | 12,895.7 | 15,127.7 | 292.6 | 135.6 | 52.7 | 45.3 | 11.2 | 2.4 | 2.6 | 7.8 |
| 10-280 | 0.44 | 55.08 | 529.8 | 9,182.6 | 10,771.9 | 208.4 | 96.5 | 37.6 | 32.3 | 7.9 | 1.7 | 1.8 | 5.5 |
| 10-290 | 0.10 | 6.83 | 14.8 | 256.6 | 301.0 | 5.8 | 2.7 | 1.0 | 0.9 | 0.2 | 0.0 | 0.1 | 0.2 |
| 10-300 | 0.36 | 17.74 | 138.6 | 2,402.9 | 2,818.8 | 54.5 | 25.3 | 9.8 | 8.4 | 2.1 | 0.4 | 0.5 | 1.4 |
| 10-310 | 0.47 | 60.29 | 617.0 | 10,694.6 | 12,545.5 | 242.7 | 112.4 | 43.7 | 37.6 | 9.3 | 2.0 | 2.1 | 6.4 |
| 10-320 | 0.45 | 341.99 | 3,348.2 | 58,035.5 | 68,080.1 | 1,317.0 | 610.1 | 237.4 | 203.9 | 50.2 | 10.7 | 11.5 | 35.0 |
| 10-330 | 0.35 | 21.61 | 164.6 | 2,853.9 | 3,347.8 | 64.8 | 30.0 | 11.7 | 10.0 | 2.5 | 0.5 | 0.6 | 1.7 |
| 10-340 | 0.45 | 20.74 | 202.8 | 3,515.2 | 4,123.6 | 79.8 | 37.0 | 14.4 | 12.3 | 3.0 | 0.6 | 0.7 | 2.1 |
| 10-350 | 0.60 | 28.16 | 365.5 | 6,335.1 | 7,431.5 | 143.8 | 66.6 | 25.9 | 22.3 | 5.5 | 1.2 | 1.3 | 3.8 |
| 10-360 | 0.59 | 29.02 | 372.7 | 6,460.6 | 7,578.7 | 146.6 | 67.9 | 26.4 | 22.7 | 5.6 | 1.2 | 1.3 | 3.9 |
| 10-370 | 0.59 | 14.46 | 184.8 | 3,202.3 | 3,756.6 | 72.7 | 33.7 | 13.1 | 11.2 | 2.8 | 0.6 | 0.6 | 1.9 |
| 10-380 | 0.45 | 14.38 | 138.7 | 2,404.7 | 2,820.8 | 54.6 | 25.3 | 9.8 | 8.4 | 2.1 | 0.4 | 0.5 | 1.4 |
| 10-390 | 0.49 | 41.97 | 448.5 | 7,773.3 | 9,118.7 | 176.4 | 81.7 | 31.8 | 27.3 | 6.7 | 1.4 | 1.5 | 4.7 |
| 10-400A | 0.10 | 1.07 | 2.3 | 40.2 | 47.1 | 0.9 | 0.4 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-400B | 0.47 | 17.66 | 180.5 | 3,128.4 | 3,669.9 | 71.0 | 32.9 | 12.8 | 11.0 | 2.7 | 0.6 | 0.6 | 1.9 |
| 10-400C | 0.57 | 50.25 | 616.1 | 10,679.5 | 12,527.9 | 242.3 | 112.3 | 43.7 | 37.5 | 9.2 | 2.0 | 2.1 | 6.4 |
| 10-410A | 0.50 | 46.22 | 498.6 | 8,643.2 | 10,139.2 | 196.1 | 90.9 | 35.3 | 30.4 | 7.5 | 1.6 | 1.7 | 5.2 |
| 10-410B | 0.32 | 21.29 | 146.0 | 2,530.3 | 2,968.3 | 57.4 | 26.6 | 10.3 | 8.9 | 2.2 | 0.5 | 0.5 | 1.5 |
| 10-410C | 0.53 | 22.8 | 260.8 | 4,520.4 | 5,302.7 | 102.6 | 47.5 | 18.5 | 15.9 | 3.9 | 0.8 | 0.9 | 2.7 |
| 10-410D | 0.60 | 27.34 | 355.6 | 6,164.4 | 7,231.3 | 139.9 | 64.8 | 25.2 | 21.7 | 5.3 | 1.1 | 1.2 | 3.7 |
| 10-410E | 0.58 | 256.04 | 3,192.9 | 55,343.2 | 64,921.8 | 1,255.9 | 581.8 | 226.3 | 194.4 | 47.9 | 10.2 | 11.0 | 33.3 |
| 10-410F | 0.59 | 37.92 | 483.4 | 8,378.7 | 9,828.8 | 190.1 | 88.1 | 34.3 | 29.4 | 7.3 | 1.5 | 1.7 | 5.0 |
| 10-420A | 0.27 | 23.05 | 136.1 | 2,359.5 | 2,767.8 | 53.5 | 24.8 | 9.6 | 8.3 | 2.0 | 0.4 | 0.5 | 1.4 |
| 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 |
| 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 |
| 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 |
| 10-420E | 0.59 | 127.89 | 1,626.4 | 28,191.2 | 33,070.4 | 639.7 | 296.4 | 115.3 | 99.0 | 24.4 | 5.2 | 5.6 | 17.0 |
| 10-430A | 0.00 | 8.14 | 0.4 | 7.6 | 9.0 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-430B | 0.53 | 54.72 | 633.6 | 10,983.1 | 12,884.0 | 249.2 | 115.5 | 44.9 | 38.6 | 9.5 | 2.0 | 2.2 | 6.6 |
| 10-430C | 0.48 | 44.83 | 466.7 | 8,089.6 | 9,489.8 | 183.6 | 85.0 | 33.1 | 28.4 | 7.0 | 1.5 | 1.6 | 4.9 |
| 10-430D | 0.49 | 85.79 | 914.0 | 15,842.3 | 18,584.2 | 359.5 | 166.5 | 64.8 | 55.7 | 13.7 | 2.9 | 3.1 | 9.5 |
| 10-430E | 0.56 | 86.66 | 1,047.2 | 18,151.4 | 21,293.0 | 411.9 | 190.8 | 74.2 | 63.8 | 15.7 | 3.4 | 3.6 | 10.9 |
| 10-430F | 0.10 | 377.97 | 819.1 | 14,197.8 | 16,655.1 | 322.2 | 149.3 | 58.1 | 49.9 | 12.3 | 2.6 | 2.8 | 8.6 |
| 10-430G | 0.50 | 125.89 | 1,352.0 | 23,435.5 | 27,491.6 | 531.8 | 246.4 | 95.8 | 82.3 | 20.3 | 4.3 | 4.7 | 14.1 |
| 10-430H | 0.49 | 33.18 | 353.3 | 6,124.3 | 7,184.3 | 139.0 | 64.4 | 25.0 | 21.5 | 5.3 | 1.1 | 1.2 | 3.7 |
| 10-430I | 0.59 | 32.61 | 416.0 | 7,210.2 | 8,458.2 | 163.6 | 75.8 | 29.5 | 25.3 | 6.2 | 1.3 | 1.4 | 4.3 |
| 10-430J | 0.43 | 532.36 | 5,006.4 | 86,778.1 | 101,797.3 | 1,969.2 | 912.3 | 354.9 | 304.8 | 75.1 | 16.0 | 17.2 | 52.3 |
| 10-430K | 0.48 | 337.06 | 3,489.0 | 60,476.1 | 70,943.1 | 1,372.3 | 635.8 | 247.3 | 212.4 | 52.3 | 11.2 | 12.0 | 36.4 |
| 10-430L | 0.45 | 84.4 | 824.5 | 14,290.5 | 16,763.8 | 324.3 | 150.2 | 58.4 | 50.2 | 12.4 | 2.6 | 2.8 | 8.6 |
| 10-430M | 0.54 | 75.94 | 892.6 | 15,471.8 | 18,149.6 | 351.1 | 162.7 | 63.3 | 54.3 | 13.4 | 2.9 | 3.1 | 9.3 |
| 10-430N | 0.44 | 26.43 | 254.3 | 4,407.2 | 5,170.0 | 100.0 | 46.3 | 18.0 | 15.5 | 3.8 | 0.8 | 0.9 | 2.7 |
| 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 |
| 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 |
| 10-430Q | 0.10 | 8.03 | 17.4 | 301.6 | 353.8 | 6.8 | 3.2 | 1.2 | 1.1 | 0.3 | 0.1 | 0.1 | 0.2 |
| 10-430R | 0.47 | 150.32 | 1,522.8 | 26,395.8 | 30,964.3 | 599.0 | 277.5 | 108.0 | 92.7 | 22.8 | 4.9 | 5.2 | 15.9 |
| 10-430S | 0.10 | 5.15 | 11.2 | 193.5 | 226.9 | 4.4 | 2.0 | 0.8 | 0.7 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-430T | 0.46 | 262.47 | 2,600.1 | 45,068.6 | 52,868.9 | 1,022.7 | 473.8 | 184.3 | 158.3 | 39.0 | 8.3 | 9.0 | 27.2 |
| 10-430U | 0.47 | 431.37 | 4,392.3 | 76,133.9 | 89,310.9 | 1,727.7 | 800.4 | 311.4 | 267.4 | 65.9 | 14.1 | 15.1 | 45.9 |

# 2006 POLLUTANT LOADINGS BY OUTFALL

**2006 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean Flow Weighted Mean Concentration - all 2006 sites | | | 9.00 | 156 | 183 | 3.54 | 1.640 | 0.638 | 0.548 | 0.135 | 0.029 | 0.031 | 0.094 |
| Precipitation (meters) | 0.7 | | | | | | | | | | | | |
| 10-430V | 0.46 | 329.11 | 3,315.3 | 57,465.1 | 67,411.0 | 1,304.0 | 604.1 | 235.0 | 201.9 | 49.7 | 10.6 | 11.4 | 34.6 |
| 10-440A | 0.46 | 23.18 | 230.1 | 3,989.0 | 4,679.4 | 90.5 | 41.9 | 16.3 | 14.0 | 3.5 | 0.7 | 0.8 | 2.4 |
| 10-440B | 0.49 | 34.23 | 365.6 | 6,336.4 | 7,433.1 | 143.8 | 66.6 | 25.9 | 22.3 | 5.5 | 1.2 | 1.3 | 3.8 |
| 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 |
| 10-440E | 0.51 | 831.25 | 9,263.5 | 160,567.5 | 188,358.1 | 3,643.6 | 1,688.0 | 656.7 | 564.0 | 139.0 | 29.6 | 31.9 | 96.8 |
| 10-440F | 0.46 | 538.85 | 5,374.2 | 93,153.6 | 109,276.4 | 2,113.9 | 979.3 | 381.0 | 327.2 | 80.6 | 17.2 | 18.5 | 56.1 |
| 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 |
| 10-450B | 0.52 | 3.41 | 38.2 | 661.8 | 776.3 | 15.0 | 7.0 | 2.7 | 2.3 | 0.6 | 0.1 | 0.1 | 0.4 |
| 10-450C | 0.59 | 55.64 | 716.0 | 12,411.5 | 14,559.6 | 281.6 | 130.5 | 50.8 | 43.6 | 10.7 | 2.3 | 2.5 | 7.5 |
| 10-450D | 0.45 | 4.62 | 45.1 | 780.9 | 916.1 | 17.7 | 8.2 | 3.2 | 2.7 | 0.7 | 0.1 | 0.2 | 0.5 |
| 10-450E | 0.44 | 3.2 | 30.7 | 531.3 | 623.2 | 12.1 | 5.6 | 2.2 | 1.9 | 0.5 | 0.1 | 0.1 | 0.3 |
| 10-450F | 0.46 | 158.55 | 1,578.6 | 27,362.0 | 32,097.7 | 620.9 | 287.7 | 111.9 | 96.1 | 23.7 | 5.1 | 5.4 | 16.5 |
| 10-450G/H | 0.48 | 75.02 | 781.2 | 13,540.3 | 15,883.8 | 307.3 | 142.3 | 55.4 | 47.6 | 11.7 | 2.5 | 2.7 | 8.2 |
| 10-450I | 0.49 | 243.64 | 2,593.6 | 44,956.5 | 52,737.4 | 1,020.2 | 472.6 | 183.9 | 157.9 | 38.9 | 8.3 | 8.9 | 27.1 |
| 10-450J | 0.49 | 17.16 | 180.5 | 3,129.3 | 3,670.9 | 71.0 | 32.9 | 12.8 | 11.0 | 2.7 | 0.6 | 0.6 | 1.9 |
| 10-450K | 0.58 | 37.01 | 464.6 | 8,053.1 | 9,446.9 | 182.7 | 84.7 | 32.9 | 28.3 | 7.0 | 1.5 | 1.6 | 4.9 |
| 10-450L | 0.51 | 213.41 | 2,335.8 | 40,487.7 | 47,495.1 | 918.8 | 425.6 | 165.6 | 142.2 | 35.0 | 7.5 | 8.0 | 24.4 |
| 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 |
| 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 |
| 10-460B | 0.52 | 7.29 | 81.6 | 1,415.2 | 1,660.1 | 32.1 | 14.9 | 5.8 | 5.0 | 1.2 | 0.3 | 0.3 | 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 |
| 10-460E | 0.49 | 231.41 | 2,476.6 | 42,927.5 | 50,357.2 | 974.1 | 451.3 | 175.6 | 150.8 | 37.1 | 7.9 | 8.5 | 25.9 |
| 10-460F | 0.49 | 14.75 | 158.1 | 2,741.0 | 3,215.4 | 62.2 | 28.8 | 11.2 | 9.6 | 2.4 | 0.5 | 0.5 | 1.7 |
| 10-460G | 0.51 | 79.66 | 881.8 | 15,284.7 | 17,930.2 | 346.8 | 160.7 | 62.5 | 53.7 | 13.2 | 2.8 | 3.0 | 9.2 |
| 10-460H | 0.48 | 12.35 | 128.3 | 2,224.0 | 2,608.9 | 50.5 | 23.4 | 9.1 | 7.8 | 1.9 | 0.4 | 0.4 | 1.3 |
| 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 |
| 10-460J | 0.46 | 5.36 | 53.9 | 933.6 | 1,095.2 | 21.2 | 9.8 | 3.8 | 3.3 | 0.8 | 0.2 | 0.2 | 0.6 |
| 10-460K | 0.36 | 5.48 | 42.7 | 740.4 | 868.6 | 16.8 | 7.8 | 3.0 | 2.6 | 0.6 | 0.1 | 0.1 | 0.4 |
| 10-460L | 0.46 | 3.5 | 35.2 | 609.3 | 714.7 | 13.8 | 6.4 | 2.5 | 2.1 | 0.5 | 0.1 | 0.1 | 0.4 |
| 10-460M | 0.48 | 9.55 | 99.0 | 1,716.8 | 2,014.0 | 39.0 | 18.0 | 7.0 | 6.0 | 1.5 | 0.3 | 0.3 | 1.0 |
| 10-460N | 0.45 | 3.85 | 37.5 | 650.8 | 763.4 | 14.8 | 6.8 | 2.7 | 2.3 | 0.6 | 0.1 | 0.1 | 0.4 |
| 10-460O | 0.45 | 4.15 | 40.8 | 707.2 | 829.7 | 16.0 | 7.4 | 2.9 | 2.5 | 0.6 | 0.1 | 0.1 | 0.4 |
| 10-460P | 0.45 | 4.34 | 42.3 | 733.6 | 860.6 | 16.6 | 7.7 | 3.0 | 2.6 | 0.6 | 0.1 | 0.1 | 0.4 |
| 10-460Q | 0.56 | 19.73 | 241.2 | 4,181.2 | 4,904.8 | 94.9 | 44.0 | 17.1 | 14.7 | 3.6 | 0.8 | 0.8 | 2.5 |
| 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 |
| 10-460S | 0.56 | 233.54 | 2,856.0 | 49,503.3 | 58,071.1 | 1,123.3 | 520.4 | 202.5 | 173.9 | 42.8 | 9.1 | 9.8 | 29.8 |
| 10-465 | 0.10 | 8.56 | 18.6 | 321.5 | 377.2 | 7.3 | 3.4 | 1.3 | 1.1 | 0.3 | 0.1 | 0.1 | 0.2 |
| 10-470 | 0.38 | 25.6 | 211.7 | 3,670.0 | 4,305.1 | 83.3 | 38.6 | 15.0 | 12.9 | 3.2 | 0.7 | 0.7 | 2.2 |
| 10-480 | 0.58 | 39.66 | 498.7 | 8,643.3 | 10,139.3 | 196.1 | 90.9 | 35.3 | 30.4 | 7.5 | 1.6 | 1.7 | 5.2 |
| 10-485 | 0.00 | 7.27 | 0.4 | 6.8 | 8.0 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-490 | 0.43 | 150.96 | 1,418.3 | 24,583.0 | 28,837.8 | 557.8 | 258.4 | 100.5 | 86.4 | 21.3 | 4.5 | 4.9 | 14.8 |
| 10-500A | 0.26 | 26.21 | 149.1 | 2,583.9 | 3,031.1 | 58.6 | 27.2 | 10.6 | 9.1 | 2.2 | 0.5 | 0.5 | 1.6 |
| 10-500B | 0.46 | 8.48 | 84.6 | 1,466.2 | 1,719.9 | 33.3 | 15.4 | 6.0 | 5.2 | 1.3 | 0.3 | 0.3 | 0.9 |
| 10-500C | 0.44 | 111.36 | 1,050.6 | 18,211.1 | 21,363.1 | 413.3 | 191.5 | 74.5 | 64.0 | 15.8 | 3.4 | 3.6 | 11.0 |
| 10-500D | 0.24 | 3.83 | 19.8 | 342.5 | 401.8 | 7.8 | 3.6 | 1.4 | 1.2 | 0.3 | 0.1 | 0.1 | 0.2 |
| 10-500E | 0.53 | 23.34 | 269.3 | 4,668.1 | 5,476.0 | 105.9 | 49.1 | 19.1 | 16.4 | 4.0 | 0.9 | 0.9 | 2.8 |
| 10-500F | 0.49 | 12.04 | 128.8 | 2,233.2 | 2,619.7 | 50.7 | 23.5 | 9.1 | 7.8 | 1.9 | 0.4 | 0.4 | 1.3 |
| 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 |
| 10-505 | 0.10 | 7.85 | 17.0 | 294.9 | 345.9 | 6.7 | 3.1 | 1.2 | 1.0 | 0.3 | 0.1 | 0.1 | 0.2 |
| 10-510 | 0.51 | 62.36 | 687.4 | 11,914.6 | 13,976.8 | 270.4 | 125.3 | 48.7 | 41.9 | 10.3 | 2.2 | 2.4 | 7.2 |
| 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 |
| 10-530 | 0.45 | 116.15 | 1,134.7 | 19,667.3 | 23,071.2 | 446.3 | 206.8 | 80.4 | 69.1 | 17.0 | 3.6 | 3.9 | 11.9 |
| 10-540 | 0.12 | 53.9 | 138.3 | 2,397.7 | 2,812.7 | 54.4 | 25.2 | 9.8 | 8.4 | 2.1 | 0.4 | 0.5 | 1.4 |
| 10-550 | 0.46 | 25.83 | 257.4 | 4,462.4 | 5,234.7 | 101.3 | 46.9 | 18.2 | 15.7 | 3.9 | 0.8 | 0.9 | 2.7 |
| 10-560A/B | 0.44 | 600.63 | 5,694.5 | 98,705.3 | 115,789.0 | 2,239.9 | 1,037.7 | 403.7 | 346.7 | 85.4 | 18.2 | 19.6 | 59.5 |
| 10-570A | 0.54 | 14.64 | 172.5 | 2,990.4 | 3,508.0 | 67.9 | 31.4 | 12.2 | 10.5 | 2.6 | 0.6 | 0.6 | 1.8 |
| 10-570B | 0.44 | 228.18 | 2,158.5 | 37,414.6 | 43,890.2 | 849.0 | 393.3 | 153.0 | 131.4 | 32.4 | 6.9 | 7.4 | 22.5 |
| 10-580 | 0.45 | 73.39 | 713.8 | 12,373.2 | 14,514.7 | 280.8 | 130.1 | 50.6 | 43.5 | 10.7 | 2.3 | 2.5 | 7.5 |
| 10-600 | 0.48 | 89.24 | 935.3 | 16,211.2 | 19,017.0 | 367.9 | 170.4 | 66.3 | 56.9 | 14.0 | 3.0 | 3.2 | 9.8 |
| 10-610 | 0.46 | 25.6 | 254.3 | 4,407.6 | 5,170.5 | 100.0 | 46.3 | 18.0 | 15.5 | 3.8 | 0.8 | 0.9 | 2.7 |
| 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 |
| 10-630A | 0.10 | 6.24 | 13.5 | 234.4 | 275.0 | 5.3 | 2.5 | 1.0 | 0.8 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-630B | 0.45 | 4.68 | 45.6 | 791.1 | 928.0 | 18.0 | 8.3 | 3.2 | 2.8 | 0.7 | 0.1 | 0.2 | 0.5 |
| 10-630C | 0.48 | 96.03 | 1,005.4 | 17,427.7 | 20,444.0 | 395.5 | 183.2 | 71.3 | 61.2 | 15.1 | 3.2 | 3.5 | 10.5 |
| 10-630D | 0.45 | 6.37 | 62.1 | 1,076.8 | 1,263.1 | 24.4 | 11.3 | 4.4 | 3.8 | 0.9 | 0.2 | 0.2 | 0.6 |
| 10-630E | 0.45 | 8.52 | 83.1 | 1,440.2 | 1,689.4 | 32.7 | 15.1 | 5.9 | 5.1 | 1.2 | 0.3 | 0.3 | 0.9 |
| 10-630F | 0.54 | 17.56 | 205.6 | 3,563.5 | 4,180.2 | 80.9 | 37.5 | 14.6 | 12.5 | 3.1 | 0.7 | 0.7 | 2.1 |
| 10-630G | 0.45 | 5.9 | 57.5 | 997.3 | 1,169.9 | 22.6 | 10.5 | 4.1 | 3.5 | 0.9 | 0.2 | 0.2 | 0.6 |
| 10-630H | 0.30 | 25.63 | 168.2 | 2,915.9 | 3,420.5 | 66.2 | 30.7 | 11.9 | 10.2 | 2.5 | 0.5 | 0.6 | 1.8 |
| 10-630I | 0.47 | 12.48 | 125.8 | 2,180.0 | 2,557.3 | 49.5 | 22.9 | 8.9 | 7.7 | 1.9 | 0.4 | 0.4 | 1.3 |
| 10-630J | 0.55 | 14.69 | 176.3 | 3,055.2 | 3,583.9 | 69.3 | 32.1 | 12.5 | 10.7 | 2.6 | 0.6 | 0.6 | 1.8 |
| 10-630K | 0.47 | 95.29 | 977.4 | 16,940.9 | 19,873.0 | 384.4 | 178.1 | 69.3 | 59.5 | 14.7 | 3.1 | 3.4 | 10.2 |
| 10-630L | 0.52 | 100.42 | 1,133.8 | 19,652.7 | 23,054.1 | 446.0 | 206.6 | 80.4 | 69.0 | 17.0 | 3.6 | 3.9 | 11.8 |
| 10-630M | 0.50 | 11.71 | 126.0 | 2,184.0 | 2,562.0 | 49.6 | 23.0 | 8.9 | 7.7 | 1.9 | 0.4 | 0.4 | 1.3 |
| 10-630N | 0.45 | 8.45 | 82.4 | 1,428.3 | 1,675.6 | 32.4 | 15.0 | 5.8 | 5.0 | 1.2 | 0.3 | 0.3 | 0.9 |
| 10-630O | 0.36 | 5.77 | 45.5 | 789.1 | 925.7 | 17.9 | 8.3 | 3.2 | 2.8 | 0.7 | 0.1 | 0.2 | 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 |
| 10-630R | 0.33 | 83.89 | 607.2 | 10,524.4 | 12,346.0 | 238.8 | 110.6 | 43.0 | 37.0 | 9.1 | 1.9 | 2.1 | 6.3 |
| 10-630S | 0.22 | 37.02 | 174.4 | 3,022.9 | 3,546.1 | 68.6 | 31.8 | 12.4 | 10.6 | 2.6 | 0.6 | 0.6 | 1.8 |

# 2006 POLLUTANT LOADINGS BY OUTFALL

**2006 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mean Flow Weighted Mean Concentration - all 2006 sites** | | | 9.00 | 156 | 183 | 3.54 | 1.640 | 0.638 | 0.548 | 0.135 | 0.029 | 0.031 | 0.094 |
| **Precipitation (meters)** | **0.7** | | | | | | | | | | | | |
| 10-630T | 0.56 | 7.72 | 94.1 | 1,631.2 | 1,913.5 | 37.0 | 17.1 | 6.7 | 5.7 | 1.4 | 0.3 | 0.3 | 1.0 |
| 10-630U | 0.52 | 115.42 | 1,308.4 | 22,678.9 | 26,604.1 | 514.6 | 238.4 | 92.8 | 79.7 | 19.6 | 4.2 | 4.5 | 13.7 |
| 10-630V | 0.11 | 33.85 | 77.5 | 1,342.7 | 1,575.1 | 30.5 | 14.1 | 5.5 | 4.7 | 1.2 | 0.2 | 0.3 | 0.8 |
| 10-630W | 0.47 | 23.68 | 243.1 | 4,213.6 | 4,942.8 | 95.6 | 44.3 | 17.2 | 14.8 | 3.6 | 0.8 | 0.8 | 2.5 |
| 10-630X | 0.44 | 14.78 | 141.7 | 2,456.1 | 2,881.2 | 55.7 | 25.8 | 10.0 | 8.6 | 2.1 | 0.5 | 0.5 | 1.5 |
| 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 |
| 10-630Z | 0.47 | 45.66 | 465.8 | 8,074.7 | 9,472.3 | 183.2 | 84.9 | 33.0 | 28.4 | 7.0 | 1.5 | 1.6 | 4.9 |
| 10-640 | 0.46 | 258.18 | 2,558.9 | 44,354.7 | 52,031.4 | 1,006.5 | 466.3 | 181.4 | 155.8 | 38.4 | 8.2 | 8.8 | 26.7 |
| 10-650 | 0.56 | 19.53 | 235.8 | 4,086.4 | 4,793.7 | 92.7 | 43.0 | 16.7 | 14.4 | 3.5 | 0.8 | 0.8 | 2.5 |
| 10-660 | 0.46 | 306.37 | 3,075.7 | 53,312.7 | 62,539.9 | 1,209.8 | 560.5 | 218.0 | 187.3 | 46.1 | 9.8 | 10.6 | 32.1 |
| 10-670 | 0.45 | 137.88 | 1,342.6 | 23,272.4 | 27,300.3 | 528.1 | 244.7 | 95.2 | 81.8 | 20.1 | 4.3 | 4.6 | 14.0 |
| 10-680 | 0.46 | 707.95 | 7,034.6 | 121,932.6 | 143,036.4 | 2,766.9 | 1,281.9 | 498.7 | 428.3 | 105.5 | 22.5 | 24.2 | 73.5 |
| 10-690 | 0.50 | 70.63 | 765.7 | 13,272.9 | 15,570.2 | 301.2 | 139.5 | 54.3 | 46.6 | 11.5 | 2.5 | 2.6 | 8.0 |
| 10-700 | 0.46 | 222.07 | 2,234.7 | 38,735.1 | 45,439.2 | 879.0 | 407.2 | 158.4 | 136.1 | 33.5 | 7.2 | 7.7 | 23.3 |
| 10-710 | 0.33 | 29.95 | 216.2 | 3,747.7 | 4,396.4 | 85.0 | 39.4 | 15.3 | 13.2 | 3.2 | 0.7 | 0.7 | 2.3 |
| 10-720A | 0.44 | 15.77 | 151.5 | 2,626.7 | 3,081.3 | 59.6 | 27.6 | 10.7 | 9.2 | 2.3 | 0.5 | 0.5 | 1.6 |
| 10-720B | 0.48 | 422.18 | 4,407.9 | 76,403.0 | 89,626.6 | 1,733.8 | 803.2 | 312.5 | 268.4 | 66.1 | 14.1 | 15.2 | 46.0 |
| 10-720C | 0.43 | 26.35 | 245.2 | 4,250.2 | 4,985.8 | 96.4 | 44.7 | 17.4 | 14.9 | 3.7 | 0.8 | 0.8 | 2.6 |
| 10-720D | 0.46 | 22.95 | 226.4 | 3,924.7 | 4,604.0 | 89.1 | 41.3 | 16.1 | 13.8 | 3.4 | 0.7 | 0.8 | 2.4 |
| 10-720E | 0.46 | 18.39 | 181.6 | 3,148.1 | 3,693.0 | 71.4 | 33.1 | 12.9 | 11.1 | 2.7 | 0.6 | 0.6 | 1.9 |
| 10-720F | 0.48 | 317.75 | 3,304.0 | 57,268.9 | 67,180.8 | 1,299.6 | 602.1 | 234.2 | 201.2 | 49.6 | 10.6 | 11.4 | 34.5 |
| 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 |
| 10-720H | 0.45 | 4.55 | 44.4 | 769.1 | 902.2 | 17.5 | 8.1 | 3.1 | 2.7 | 0.7 | 0.1 | 0.2 | 0.5 |
| 10-720I | 0.45 | 87.27 | 843.4 | 14,619.1 | 17,149.3 | 331.7 | 153.7 | 59.8 | 51.4 | 12.7 | 2.7 | 2.9 | 8.8 |
| 10-720J | 0.36 | 3.71 | 28.7 | 497.9 | 584.0 | 11.3 | 5.2 | 2.0 | 1.7 | 0.4 | 0.1 | 0.1 | 0.3 |
| 10-720K | 0.55 | 32.76 | 389.8 | 6,757.0 | 7,926.4 | 153.3 | 71.0 | 27.6 | 23.7 | 5.8 | 1.2 | 1.3 | 4.1 |
| 10-720L | 0.45 | 4.57 | 44.6 | 772.5 | 906.2 | 17.5 | 8.1 | 3.2 | 2.7 | 0.7 | 0.1 | 0.2 | 0.5 |
| 20-010 | 0.42 | 93.99 | 855.1 | 14,821.5 | 17,386.8 | 336.3 | 155.8 | 60.6 | 52.1 | 12.8 | 2.7 | 2.9 | 8.9 |
| 20-020 | 0.44 | 15.09 | 143.4 | 2,486.5 | 2,916.8 | 56.4 | 26.1 | 10.2 | 8.7 | 2.2 | 0.5 | 0.5 | 1.5 |
| 20-030 | 0.45 | 7.95 | 77.5 | 1,343.8 | 1,576.4 | 30.5 | 14.1 | 5.5 | 4.7 | 1.2 | 0.2 | 0.3 | 0.8 |
| 20-040 | 0.37 | 6.79 | 54.9 | 950.9 | 1,115.5 | 21.6 | 10.0 | 3.9 | 3.3 | 0.8 | 0.2 | 0.2 | 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 |
| 20-060 | 0.45 | 5.91 | 57.6 | 999.0 | 1,171.9 | 22.7 | 10.5 | 4.1 | 3.5 | 0.9 | 0.2 | 0.2 | 0.6 |
| 20-070 | 0.44 | 39.07 | 375.4 | 6,507.1 | 7,633.3 | 147.7 | 68.4 | 26.6 | 22.9 | 5.6 | 1.2 | 1.3 | 3.9 |
| 20-080 | 0.45 | 33.72 | 331.3 | 5,742.8 | 6,736.7 | 130.3 | 60.4 | 23.5 | 20.2 | 5.0 | 1.1 | 1.1 | 3.5 |
| 20-090 | 0.55 | 9.95 | 119.2 | 2,065.9 | 2,423.5 | 46.9 | 21.7 | 8.4 | 7.3 | 1.8 | 0.4 | 0.4 | 1.2 |
| 20-100 | 0.10 | 0.99 | 2.1 | 37.2 | 43.6 | 0.8 | 0.4 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-110 | 0.24 | 216.04 | 1,123.3 | 19,469.9 | 22,839.7 | 441.8 | 204.7 | 79.6 | 68.4 | 16.8 | 3.6 | 3.9 | 11.7 |
| 20-120 | 0.47 | 10.22 | 103.5 | 1,794.5 | 2,105.1 | 40.7 | 18.9 | 7.3 | 6.3 | 1.6 | 0.3 | 0.4 | 1.1 |
| 20-130 | 0.45 | 16.12 | 157.2 | 2,724.8 | 3,196.5 | 61.8 | 28.6 | 11.1 | 9.6 | 2.4 | 0.5 | 0.5 | 1.6 |
| 20-140 | 0.44 | 2.97 | 28.4 | 492.4 | 577.6 | 11.2 | 5.2 | 2.0 | 1.7 | 0.4 | 0.1 | 0.1 | 0.3 |
| 20-150 | 0.45 | 14.48 | 141.2 | 2,447.6 | 2,871.3 | 55.5 | 25.7 | 10.0 | 8.6 | 2.1 | 0.5 | 0.5 | 1.5 |
| 20-160 | 0.54 | 3.21 | 37.6 | 651.5 | 764.2 | 14.8 | 6.8 | 2.7 | 2.3 | 0.6 | 0.1 | 0.1 | 0.4 |
| 20-170 | 0.37 | 4.94 | 39.9 | 691.4 | 811.0 | 15.7 | 7.3 | 2.8 | 2.4 | 0.6 | 0.1 | 0.1 | 0.4 |
| 20-180 | 0.51 | 5.3 | 58.1 | 1,007.6 | 1,182.0 | 22.9 | 10.6 | 4.1 | 3.5 | 0.9 | 0.2 | 0.2 | 0.6 |
| 20-190 | 0.45 | 1.35 | 13.2 | 228.2 | 267.7 | 5.2 | 2.4 | 0.9 | 0.8 | 0.2 | 0.0 | 0.0 | 0.1 |
| 20-200 | 0.45 | 13.84 | 135.0 | 2,339.4 | 2,744.3 | 53.1 | 24.6 | 9.6 | 8.2 | 2.0 | 0.4 | 0.5 | 1.4 |
| 20-210A | 0.44 | 92.9 | 884.4 | 15,328.9 | 17,982.0 | 347.8 | 161.2 | 62.7 | 53.8 | 13.3 | 2.8 | 3.0 | 9.2 |
| 20-210B | 0.50 | 620.78 | 6,787.8 | 117,655.6 | 138,019.1 | 2,669.9 | 1,236.9 | 481.2 | 413.3 | 101.8 | 21.7 | 23.4 | 70.9 |
| 20-220 | 0.46 | 26.38 | 263.6 | 4,568.4 | 5,359.1 | 103.7 | 48.0 | 18.7 | 16.0 | 4.0 | 0.8 | 0.9 | 2.8 |
| 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 |
| 20-240 | 0.48 | 30.06 | 313.9 | 5,440.3 | 6,381.8 | 123.5 | 57.2 | 22.2 | 19.1 | 4.7 | 1.0 | 1.1 | 3.3 |
| 20-250 | 0.57 | 6.28 | 77.8 | 1,348.7 | 1,582.1 | 30.6 | 14.2 | 5.5 | 4.7 | 1.2 | 0.2 | 0.3 | 0.8 |
| 20-260 | 0.60 | 3.5 | 45.5 | 788.8 | 925.4 | 17.9 | 8.3 | 3.2 | 2.8 | 0.7 | 0.1 | 0.2 | 0.5 |
| 20-270 | 0.48 | 42.81 | 442.3 | 7,666.0 | 8,992.8 | 174.0 | 80.6 | 31.4 | 26.9 | 6.6 | 1.4 | 1.5 | 4.6 |
| 20-280 | 0.54 | 8.98 | 104.6 | 1,812.9 | 2,126.7 | 41.1 | 19.1 | 7.4 | 6.4 | 1.6 | 0.3 | 0.4 | 1.1 |
| 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 |
| 21-010 | 0.45 | 49.49 | 480.8 | 8,333.0 | 9,775.3 | 189.1 | 87.6 | 34.1 | 29.3 | 7.2 | 1.5 | 1.7 | 5.0 |
| 40-010 | 0.45 | 719.17 | 6,984.0 | 121,055.7 | 142,007.6 | 2,747.0 | 1,272.6 | 495.1 | 425.2 | 104.8 | 22.3 | 24.1 | 72.9 |
| 40-020 | 0.45 | 15.36 | 149.8 | 2,596.4 | 3,045.8 | 58.9 | 27.3 | 10.6 | 9.1 | 2.2 | 0.5 | 0.5 | 1.6 |
| 40-030 | 0.42 | 51.02 | 461.9 | 8,006.0 | 9,391.7 | 181.7 | 84.2 | 32.7 | 28.1 | 6.9 | 1.5 | 1.6 | 4.8 |
| 40-040 | 0.43 | 65.39 | 615.3 | 10,665.0 | 12,510.8 | 242.0 | 112.1 | 43.6 | 37.5 | 9.2 | 2.0 | 2.1 | 6.4 |
| 40-050 | 0.45 | 10.28 | 100.3 | 1,737.7 | 2,038.4 | 39.4 | 18.3 | 7.1 | 6.1 | 1.5 | 0.3 | 0.3 | 1.0 |
| 40-060 | 0.45 | 3.2 | 31.2 | 540.9 | 634.5 | 12.3 | 5.7 | 2.2 | 1.9 | 0.5 | 0.1 | 0.1 | 0.3 |
| 40-070 | 0.38 | 7.98 | 65.4 | 1,134.0 | 1,330.3 | 25.7 | 11.9 | 4.6 | 4.0 | 1.0 | 0.2 | 0.2 | 0.7 |
| 40-080 | 0.41 | 60.51 | 535.5 | 9,282.5 | 10,889.1 | 210.6 | 97.6 | 38.0 | 32.6 | 8.0 | 1.7 | 1.8 | 5.6 |
| 40-090 | 0.46 | 20.65 | 208.0 | 3,606.0 | 4,230.1 | 81.8 | 37.9 | 14.7 | 12.7 | 3.1 | 0.7 | 0.7 | 2.2 |
| 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 |
| 40-110 | 0.44 | 2.61 | 25.1 | 435.1 | 510.4 | 9.9 | 4.6 | 1.8 | 1.5 | 0.4 | 0.1 | 0.1 | 0.3 |
| 40-120 | 0.44 | 65.87 | 625.6 | 10,844.3 | 12,721.2 | 246.1 | 114.0 | 44.4 | 38.1 | 9.4 | 2.0 | 2.2 | 6.5 |
| 40-130 | 0.45 | 35.01 | 342.8 | 5,942.5 | 6,971.0 | 134.8 | 62.5 | 24.3 | 20.9 | 5.1 | 1.1 | 1.2 | 3.6 |
| 40-140 | 0.35 | 125.46 | 945.4 | 16,387.6 | 19,223.9 | 371.9 | 172.3 | 67.0 | 57.6 | 14.2 | 3.0 | 3.3 | 9.9 |
| 40-150 | 0.47 | 24.31 | 249.6 | 4,326.0 | 5,074.7 | 98.2 | 45.5 | 17.7 | 15.2 | 3.7 | 0.8 | 0.9 | 2.6 |
| 40-160 | 0.49 | 30.99 | 332.0 | 5,754.7 | 6,750.7 | 130.6 | 60.5 | 23.5 | 20.2 | 5.0 | 1.1 | 1.1 | 3.5 |
| 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 |
| 40-180 | 0.54 | 16.8 | 196.0 | 3,397.3 | 3,985.3 | 77.1 | 35.7 | 13.9 | 11.9 | 2.9 | 0.6 | 0.7 | 2.0 |
| 40-190 | 0.53 | 65.53 | 750.9 | 13,015.9 | 15,268.6 | 295.4 | 136.8 | 53.2 | 45.7 | 11.3 | 2.4 | 2.6 | 7.8 |
| 40-200 | 0.46 | 24.75 | 248.0 | 4,298.2 | 5,042.1 | 97.5 | 45.2 | 17.6 | 15.1 | 3.7 | 0.8 | 0.9 | 2.6 |
| 40-210 | 0.54 | 17.26 | 203.8 | 3,532.5 | 4,143.9 | 80.2 | 37.1 | 14.4 | 12.4 | 3.1 | 0.7 | 0.7 | 2.1 |

# 2006 POLLUTANT LOADINGS BY OUTFALL

**2006 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean Flow Weighted Mean Concentration - all 2006 sites | | | 9.00 | 156 | 183 | 3.54 | 1.640 | 0.638 | 0.548 | 0.135 | 0.029 | 0.031 | 0.094 |
| Precipitation (meters) | 0.7 | | | | | | | | | | | | |
| 40-220 | 0.47 | 100.58 | 1,019.0 | 17,662.1 | 20,719.1 | 400.8 | 185.7 | 72.2 | 62.0 | 15.3 | 3.3 | 3.5 | 10.6 |
| 40-230 | 0.44 | 13.78 | 132.8 | 2,302.5 | 2,701.1 | 52.2 | 24.2 | 9.4 | 8.1 | 2.0 | 0.4 | 0.5 | 1.4 |
| 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 |
| 40-250 | 0.60 | 1.15 | 15.0 | 259.2 | 304.0 | 5.9 | 2.7 | 1.1 | 0.9 | 0.2 | 0.0 | 0.1 | 0.2 |
| 40-260 | 0.45 | 3.49 | 34.0 | 589.9 | 692.0 | 13.4 | 6.2 | 2.4 | 2.1 | 0.5 | 0.1 | 0.1 | 0.4 |
| 40-270 | 0.45 | 9.59 | 93.5 | 1,621.0 | 1,901.6 | 36.8 | 17.0 | 6.6 | 5.7 | 1.4 | 0.3 | 0.3 | 1.0 |
| 40-280 | 0.53 | 12.76 | 145.4 | 2,520.6 | 2,956.8 | 57.2 | 26.5 | 10.3 | 8.9 | 2.2 | 0.5 | 0.5 | 1.5 |
| 40-290 | 0.51 | 13.73 | 152.4 | 2,640.8 | 3,097.8 | 59.9 | 27.8 | 10.8 | 9.3 | 2.3 | 0.5 | 0.5 | 1.6 |
| 40-300 | 0.52 | 10.38 | 117.2 | 2,031.5 | 2,383.1 | 46.1 | 21.4 | 8.3 | 7.1 | 1.8 | 0.4 | 0.4 | 1.2 |
| 40-310 | 0.45 | 97.86 | 959.9 | 16,639.0 | 19,518.8 | 377.6 | 174.9 | 68.0 | 58.4 | 14.4 | 3.1 | 3.3 | 10.0 |
| 40-320 | 0.60 | 9.43 | 122.6 | 2,125.3 | 2,493.2 | 48.2 | 22.3 | 8.7 | 7.5 | 1.8 | 0.4 | 0.4 | 1.3 |
| 40-330 | 0.59 | 15.34 | 197.0 | 3,415.2 | 4,006.3 | 77.5 | 35.9 | 14.0 | 12.0 | 3.0 | 0.6 | 0.7 | 2.1 |
| 40-340 | 0.53 | 35.27 | 407.3 | 7,060.5 | 8,282.5 | 160.2 | 74.2 | 28.9 | 24.8 | 6.1 | 1.3 | 1.4 | 4.3 |
| 40-350 | 0.60 | 8.99 | 116.9 | 2,026.2 | 2,376.8 | 46.0 | 21.3 | 8.3 | 7.1 | 1.8 | 0.4 | 0.4 | 1.2 |
| 40-360 | 0.60 | 8.09 | 105.2 | 1,823.3 | 2,138.9 | 41.4 | 19.2 | 7.5 | 6.4 | 1.6 | 0.3 | 0.4 | 1.1 |
| 40-370 | 0.58 | 12.41 | 155.6 | 2,696.5 | 3,163.2 | 61.2 | 28.3 | 11.0 | 9.5 | 2.3 | 0.5 | 0.5 | 1.6 |
| 40-380 | 0.39 | 24.92 | 212.5 | 3,682.8 | 4,320.2 | 83.6 | 38.7 | 15.1 | 12.9 | 3.2 | 0.7 | 0.7 | 2.2 |
| 40-390 | 0.58 | 5.72 | 71.9 | 1,246.1 | 1,461.8 | 28.3 | 13.1 | 5.1 | 4.4 | 1.1 | 0.2 | 0.2 | 0.8 |
| 40-400 | 0.10 | 1.07 | 2.3 | 40.2 | 47.1 | 0.9 | 0.4 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 41-010 | 0.38 | 94.73 | 774.9 | 13,431.0 | 15,755.6 | 304.8 | 141.2 | 54.9 | 47.2 | 11.6 | 2.5 | 2.7 | 8.1 |
| 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 |
| 41-030 | 0.50 | 60.47 | 657.8 | 11,402.3 | 13,375.8 | 258.7 | 119.9 | 46.6 | 40.1 | 9.9 | 2.1 | 2.3 | 6.9 |
| 41-040 | 0.57 | 35.59 | 441.9 | 7,660.3 | 8,986.1 | 173.8 | 80.5 | 31.3 | 26.9 | 6.6 | 1.4 | 1.5 | 4.6 |
| 41-050 | 0.60 | 10.48 | 136.3 | 2,362.0 | 2,770.8 | 53.6 | 24.8 | 9.7 | 8.3 | 2.0 | 0.4 | 0.5 | 1.4 |
| 41-060 | 0.60 | 2.95 | 38.4 | 664.9 | 779.9 | 15.1 | 7.0 | 2.7 | 2.3 | 0.6 | 0.1 | 0.1 | 0.4 |
| 51-010 | 0.45 | 29.63 | 289.8 | 5,023.4 | 5,892.8 | 114.0 | 52.8 | 20.5 | 17.6 | 4.3 | 0.9 | 1.0 | 3.0 |
| 51-020 | 0.45 | 4.55 | 44.4 | 769.1 | 902.2 | 17.5 | 8.1 | 3.1 | 2.7 | 0.7 | 0.1 | 0.2 | 0.5 |
| 52-010 | 0.28 | 45.29 | 271.2 | 4,701.4 | 5,515.1 | 106.7 | 49.4 | 19.2 | 16.5 | 4.1 | 0.9 | 0.9 | 2.8 |
| 52-020 | 0.45 | 6.09 | 59.4 | 1,029.4 | 1,207.6 | 23.4 | 10.8 | 4.2 | 3.6 | 0.9 | 0.2 | 0.2 | 0.6 |
| 52-030 | 0.45 | 7.18 | 70.0 | 1,213.7 | 1,423.7 | 27.5 | 12.8 | 5.0 | 4.3 | 1.1 | 0.2 | 0.2 | 0.7 |
| 52-040 | 0.41 | 4.54 | 40.7 | 704.9 | 826.9 | 16.0 | 7.4 | 2.9 | 2.5 | 0.6 | 0.1 | 0.1 | 0.4 |
| 52-050 | 0.44 | 15.3 | 144.2 | 2,500.1 | 2,932.9 | 56.7 | 26.3 | 10.2 | 8.8 | 2.2 | 0.5 | 0.5 | 1.5 |
| 52-060 | 0.10 | 3.22 | 7.0 | 121.0 | 141.9 | 2.7 | 1.3 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 52-070 | 0.42 | 86.94 | 797.3 | 13,820.0 | 16,212.0 | 313.6 | 145.3 | 56.5 | 48.5 | 12.0 | 2.6 | 2.7 | 8.3 |
| 52-080 | 0.24 | 8.08 | 42.4 | 734.6 | 861.7 | 16.7 | 7.7 | 3.0 | 2.6 | 0.6 | 0.1 | 0.1 | 0.4 |
| 52-090 | 0.45 | 4.89 | 47.7 | 826.6 | 969.6 | 18.8 | 8.7 | 3.4 | 2.9 | 0.7 | 0.2 | 0.2 | 0.5 |
| 52-100A/B | 0.27 | 11.89 | 68.7 | 1,190.8 | 1,396.9 | 27.0 | 12.5 | 4.9 | 4.2 | 1.0 | 0.2 | 0.2 | 0.7 |
| 52-110 | 0.45 | 8.84 | 85.5 | 1,482.3 | 1,738.8 | 33.6 | 15.6 | 6.1 | 5.2 | 1.3 | 0.3 | 0.3 | 0.9 |
| 52-120 | 0.45 | 14.74 | 143.7 | 2,491.6 | 2,922.8 | 56.5 | 26.2 | 10.2 | 8.8 | 2.2 | 0.5 | 0.5 | 1.5 |
| 52-130 | 0.31 | 7.18 | 49.0 | 848.9 | 995.9 | 19.3 | 8.9 | 3.5 | 3.0 | 0.7 | 0.2 | 0.2 | 0.5 |
| 53-010 | 0.45 | 7.03 | 68.6 | 1,188.3 | 1,394.0 | 27.0 | 12.5 | 4.9 | 4.2 | 1.0 | 0.2 | 0.2 | 0.7 |
| 53-020 | 0.28 | 12.38 | 74.1 | 1,285.2 | 1,507.7 | 29.2 | 13.5 | 5.3 | 4.5 | 1.1 | 0.2 | 0.3 | 0.8 |
| 53-030 | 0.44 | 11.37 | 107.6 | 1,865.9 | 2,188.8 | 42.3 | 19.6 | 7.6 | 6.6 | 1.6 | 0.3 | 0.4 | 1.1 |
| 53-040 | 0.45 | 2.78 | 27.1 | 469.9 | 551.2 | 10.7 | 4.9 | 1.9 | 1.7 | 0.4 | 0.1 | 0.1 | 0.3 |
| 53-050 | 0.45 | 13.66 | 133.2 | 2,309.0 | 2,708.7 | 52.4 | 24.3 | 9.4 | 8.1 | 2.0 | 0.4 | 0.5 | 1.4 |
| 53-060 | 0.45 | 20.37 | 198.6 | 3,443.2 | 4,039.2 | 78.1 | 36.2 | 14.1 | 12.1 | 3.0 | 0.6 | 0.7 | 2.1 |
| 53-070 | 0.45 | 4.89 | 47.7 | 826.6 | 969.6 | 18.8 | 8.7 | 3.4 | 2.9 | 0.7 | 0.2 | 0.2 | 0.5 |
| 53-080 | 0.39 | 5.81 | 49.6 | 860.3 | 1,009.2 | 19.5 | 9.0 | 3.5 | 3.0 | 0.7 | 0.2 | 0.2 | 0.5 |
| 53-090 | 0.46 | 59.59 | 593.0 | 10,278.1 | 12,056.9 | 233.2 | 108.1 | 42.0 | 36.1 | 8.9 | 1.9 | 2.0 | 6.2 |
| 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 |
| 53-110 | 0.38 | 4.59 | 38.3 | 663.6 | 778.5 | 15.1 | 7.0 | 2.7 | 2.3 | 0.6 | 0.1 | 0.1 | 0.4 |
| 53-120A/B | 0.46 | 129.79 | 1,281.5 | 22,212.8 | 26,057.3 | 504.1 | 233.5 | 90.8 | 78.0 | 19.2 | 4.1 | 4.4 | 13.4 |
| 53-130 | 0.45 | 5.02 | 49.0 | 848.6 | 995.4 | 19.3 | 8.9 | 3.5 | 3.0 | 0.7 | 0.2 | 0.2 | 0.5 |
| 53-140 | 0.45 | 6.36 | 62.0 | 1,075.1 | 1,261.1 | 24.4 | 11.3 | 4.4 | 3.8 | 0.9 | 0.2 | 0.2 | 0.6 |
| 53-150 | 0.48 | 90.4 | 947.8 | 16,429.0 | 19,272.5 | 372.8 | 172.7 | 67.2 | 57.7 | 14.2 | 3.0 | 3.3 | 9.9 |
| 53-160 | 0.47 | 252.19 | 2,583.8 | 44,786.0 | 52,537.4 | 1,016.3 | 470.8 | 183.2 | 157.3 | 38.8 | 8.3 | 8.9 | 27.0 |
| 53-170 | 0.36 | 6.39 | 50.0 | 866.2 | 1,016.1 | 19.7 | 9.1 | 3.5 | 3.0 | 0.7 | 0.2 | 0.2 | 0.5 |
| 53-180 | 0.10 | 8.09 | 17.5 | 303.9 | 356.5 | 6.9 | 3.2 | 1.2 | 1.1 | 0.3 | 0.1 | 0.1 | 0.2 |
| 53-190 | 0.30 | 11.41 | 74.3 | 1,288.0 | 1,510.9 | 29.2 | 13.5 | 5.3 | 4.5 | 1.1 | 0.2 | 0.3 | 0.8 |
| 54-010A/B | 0.44 | 84.93 | 800.8 | 13,880.3 | 16,282.7 | 315.0 | 145.9 | 56.8 | 48.8 | 12.0 | 2.6 | 2.8 | 8.4 |
| 54-040A/B | 0.49 | 255.14 | 2,736.6 | 47,434.6 | 55,644.4 | 1,076.4 | 498.7 | 194.0 | 166.6 | 41.0 | 8.8 | 9.4 | 28.6 |
| 54-050 | 0.17 | 9.27 | 34.9 | 605.5 | 710.3 | 13.7 | 6.4 | 2.5 | 2.1 | 0.5 | 0.1 | 0.1 | 0.4 |
| 54-060 | 0.44 | 32.13 | 305.9 | 5,301.5 | 6,219.0 | 120.3 | 55.7 | 21.7 | 18.6 | 4.6 | 1.0 | 1.1 | 3.2 |
| 54-070 | 0.36 | 60.8 | 472.5 | 8,189.4 | 9,606.8 | 185.8 | 86.1 | 33.5 | 28.8 | 7.1 | 1.5 | 1.6 | 4.9 |
| 54-080A/B/C | 0.46 | 414.26 | 4,103.5 | 71,127.7 | 83,438.3 | 1,614.1 | 747.8 | 290.9 | 249.9 | 61.6 | 13.1 | 14.1 | 42.9 |
| 54-090 | 0.10 | 3.55 | 7.7 | 133.3 | 156.4 | 3.0 | 1.4 | 0.5 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 54-100A/B | 0.60 | 114.24 | 1,474.8 | 25,562.9 | 29,987.2 | 580.1 | 268.7 | 104.5 | 89.8 | 22.1 | 4.7 | 5.1 | 15.4 |
| 54-110 | 0.45 | 24.55 | 239.4 | 4,149.8 | 4,868.0 | 94.2 | 43.6 | 17.0 | 14.6 | 3.6 | 0.8 | 0.8 | 2.5 |
| 54-120 | 0.46 | 62.08 | 614.7 | 10,655.6 | 12,499.9 | 241.8 | 112.0 | 43.6 | 37.4 | 9.2 | 2.0 | 2.1 | 6.4 |
| 54-130 | 0.10 | 1.07 | 2.3 | 40.2 | 47.1 | 0.9 | 0.4 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-140A/B | 0.41 | 113.01 | 999.0 | 17,316.8 | 20,314.0 | 393.0 | 182.0 | 70.8 | 60.8 | 15.0 | 3.2 | 3.4 | 10.4 |
| 54-150 | 0.45 | 55.34 | 534.1 | 9,257.3 | 10,859.5 | 210.1 | 97.3 | 37.9 | 32.5 | 8.0 | 1.7 | 1.8 | 5.6 |
| 54-160 | 0.60 | 2.62 | 34.1 | 590.5 | 692.7 | 13.4 | 6.2 | 2.4 | 2.1 | 0.5 | 0.1 | 0.1 | 0.4 |
| 54-170 | 0.59 | 8.08 | 104.1 | 1,804.7 | 2,117.1 | 41.0 | 19.0 | 7.4 | 6.3 | 1.6 | 0.3 | 0.4 | 1.1 |
| 54-180 | 0.60 | 2.82 | 36.7 | 635.6 | 745.6 | 14.4 | 6.7 | 2.6 | 2.2 | 0.6 | 0.1 | 0.1 | 0.4 |
| 54-190 | 0.10 | 2.2 | 4.8 | 82.6 | 96.9 | 1.9 | 0.9 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 54-200 | 0.10 | 2.13 | 4.6 | 80.0 | 93.9 | 1.8 | 0.8 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 54-210 | 0.10 | 1.14 | 2.5 | 42.8 | 50.2 | 1.0 | 0.5 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 55-010 | 0.60 | 14.98 | 194.8 | 3,376.2 | 3,960.5 | 76.6 | 35.5 | 13.8 | 11.9 | 2.9 | 0.6 | 0.7 | 2.0 |

# 2006 POLLUTANT LOADINGS BY OUTFALL

**2006 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mean Flow Weighted Mean Concentration - all 2006 sites** | | | 9.00 | 156 | 183 | 3.54 | 1.640 | 0.638 | 0.548 | 0.135 | 0.029 | 0.031 | 0.094 |
| **Precipitation (meters)** | **0.7** | | | | | | | | | | | | |
| 55-020 | 0.60 | 189.58 | 2,449.0 | 42,449.8 | 49,796.9 | 963.3 | 446.3 | 173.6 | 149.1 | 36.7 | 7.8 | 8.4 | 25.6 |
| 56-010 | 0.60 | 67.62 | 879.2 | 15,240.2 | 17,877.9 | 345.8 | 160.2 | 62.3 | 53.5 | 13.2 | 2.8 | 3.0 | 9.2 |
| 57-010 | 0.53 | 26.1 | 301.7 | 5,230.1 | 6,135.3 | 118.7 | 55.0 | 21.4 | 18.4 | 4.5 | 1.0 | 1.0 | 3.2 |
| 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 |
| 57-030 | 0.45 | 18.22 | 177.7 | 3,079.8 | 3,612.9 | 69.9 | 32.4 | 12.6 | 10.8 | 2.7 | 0.6 | 0.6 | 1.9 |
| 57-040 | 0.35 | 39.88 | 301.6 | 5,227.4 | 6,132.2 | 118.6 | 55.0 | 21.4 | 18.4 | 4.5 | 1.0 | 1.0 | 3.1 |
| 57-050 | 0.45 | 7.9 | 77.0 | 1,335.4 | 1,566.5 | 30.3 | 14.0 | 5.5 | 4.7 | 1.2 | 0.2 | 0.3 | 0.8 |
| 57-060 | 0.46 | 26.11 | 261.7 | 4,535.6 | 5,320.6 | 102.9 | 47.7 | 18.5 | 15.9 | 3.9 | 0.8 | 0.9 | 2.7 |
| 57-070 | 0.45 | 81.33 | 795.0 | 13,780.5 | 16,165.5 | 312.7 | 144.9 | 56.4 | 48.4 | 11.9 | 2.5 | 2.7 | 8.3 |
| 57-080 | 0.42 | 5.54 | 50.7 | 879.6 | 1,031.9 | 20.0 | 9.2 | 3.6 | 3.1 | 0.8 | 0.2 | 0.2 | 0.5 |
| 57-090 | 0.47 | 77.77 | 791.0 | 13,709.8 | 16,082.7 | 311.1 | 144.1 | 56.1 | 48.2 | 11.9 | 2.5 | 2.7 | 8.3 |
| 57-100A/B | 0.47 | 313.43 | 3,208.8 | 55,619.1 | 65,245.4 | 1,262.1 | 584.7 | 227.5 | 195.4 | 48.1 | 10.3 | 11.1 | 33.5 |
| 57-110 | 0.54 | 21.6 | 253.1 | 4,387.8 | 5,147.3 | 99.6 | 46.1 | 17.9 | 15.4 | 3.8 | 0.8 | 0.9 | 2.6 |
| 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 |
| 57-130 | 0.10 | 1.16 | 2.5 | 43.6 | 51.1 | 1.0 | 0.5 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57-140 | 0.10 | 1.55 | 3.4 | 58.2 | 68.3 | 1.3 | 0.6 | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 |
| 57-150 | 0.43 | 35.68 | 333.7 | 5,784.6 | 6,785.8 | 131.3 | 60.8 | 23.7 | 20.3 | 5.0 | 1.1 | 1.1 | 3.5 |
| 57-160 | 0.10 | 1.89 | 4.1 | 71.0 | 83.3 | 1.6 | 0.7 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 |
| 61-010 | 0.55 | 2.86 | 34.2 | 592.7 | 695.3 | 13.5 | 6.2 | 2.4 | 2.1 | 0.5 | 0.1 | 0.1 | 0.4 |
| 62-010 | 0.45 | 27.84 | 272.8 | 4,727.7 | 5,545.9 | 107.3 | 49.7 | 19.3 | 16.6 | 4.1 | 0.9 | 0.9 | 2.8 |
| 63-010 | 0.45 | 388.79 | 3,809.4 | 66,030.2 | 77,458.5 | 1,498.4 | 694.2 | 270.0 | 232.0 | 57.1 | 12.2 | 13.1 | 39.8 |
| 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 |
| 64-100 | 0.45 | 24.92 | 242.8 | 4,208.4 | 4,936.8 | 95.5 | 44.2 | 17.2 | 14.8 | 3.6 | 0.8 | 0.8 | 2.5 |
| 64-110 | 0.45 | 6.01 | 58.6 | 1,015.9 | 1,191.7 | 23.1 | 10.7 | 4.2 | 3.6 | 0.9 | 0.2 | 0.2 | 0.6 |
| 64-120 | 0.45 | 16.04 | 156.4 | 2,711.3 | 3,180.6 | 61.5 | 28.5 | 11.1 | 9.5 | 2.3 | 0.5 | 0.5 | 1.6 |
| 64-130 | 0.45 | 2.44 | 23.8 | 412.4 | 483.8 | 9.4 | 4.3 | 1.7 | 1.4 | 0.4 | 0.1 | 0.1 | 0.2 |
| 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 |
| 65-020 | 0.53 | 38.46 | 441.0 | 7,644.7 | 8,967.8 | 173.5 | 80.4 | 31.3 | 26.9 | 6.6 | 1.4 | 1.5 | 4.6 |
| 70-010 | 0.46 | 6.23 | 61.9 | 1,073.2 | 1,259.0 | 24.4 | 11.3 | 4.4 | 3.8 | 0.9 | 0.2 | 0.2 | 0.6 |
| 70-015 | 0.45 | 11.69 | 114.0 | 1,976.0 | 2,318.0 | 44.8 | 20.8 | 8.1 | 6.9 | 1.7 | 0.4 | 0.4 | 1.2 |
| 70-020 | 0.45 | 37.55 | 366.2 | 6,347.3 | 7,445.8 | 144.0 | 66.7 | 26.0 | 22.3 | 5.5 | 1.2 | 1.3 | 3.8 |
| 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 |
| 70-030 | 0.45 | 13.48 | 131.4 | 2,276.8 | 2,670.9 | 51.7 | 23.9 | 9.3 | 8.0 | 2.0 | 0.4 | 0.5 | 1.4 |
| 70-035 | 0.45 | 4.53 | 44.2 | 765.7 | 898.3 | 17.4 | 8.0 | 3.1 | 2.7 | 0.7 | 0.1 | 0.2 | 0.5 |
| 70-040 | 0.45 | 2.42 | 23.6 | 409.1 | 479.9 | 9.3 | 4.3 | 1.7 | 1.4 | 0.4 | 0.1 | 0.1 | 0.2 |
| 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 |
| 70-050 | 0.45 | 17.41 | 169.8 | 2,942.9 | 3,452.2 | 66.8 | 30.9 | 12.0 | 10.3 | 2.5 | 0.5 | 0.6 | 1.8 |
| 70-055 | 0.46 | 333.43 | 3,353.6 | 58,129.2 | 68,190.0 | 1,319.1 | 611.1 | 237.7 | 204.2 | 50.3 | 10.7 | 11.6 | 35.0 |
| 70-060 | 0.45 | 3.53 | 34.4 | 596.7 | 700.0 | 13.5 | 6.3 | 2.4 | 2.1 | 0.5 | 0.1 | 0.1 | 0.4 |
| 70-065 | 0.45 | 1.89 | 18.4 | 319.5 | 374.8 | 7.2 | 3.4 | 1.3 | 1.1 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-070 | 0.45 | 5.8 | 56.6 | 980.4 | 1,150.1 | 22.2 | 10.3 | 4.0 | 3.4 | 0.8 | 0.2 | 0.2 | 0.6 |
| 70-075 | 0.43 | 5 | 46.7 | 810.2 | 950.4 | 18.4 | 8.5 | 3.3 | 2.8 | 0.7 | 0.1 | 0.2 | 0.5 |
| 70-080 | 0.46 | 11.96 | 119.7 | 2,075.5 | 2,434.7 | 47.1 | 21.8 | 8.5 | 7.3 | 1.8 | 0.4 | 0.4 | 1.3 |
| 70-085 | 0.45 | 229.48 | 2,224.1 | 38,551.8 | 45,224.2 | 874.8 | 405.3 | 157.7 | 135.4 | 33.4 | 7.1 | 7.7 | 23.2 |
| 70-090 | 0.45 | 18.57 | 181.1 | 3,139.0 | 3,682.3 | 71.2 | 33.0 | 12.8 | 11.0 | 2.7 | 0.6 | 0.6 | 1.9 |
| 70-095 | 0.45 | 9.99 | 97.4 | 1,688.7 | 1,980.9 | 38.3 | 17.8 | 6.9 | 5.9 | 1.5 | 0.3 | 0.3 | 1.0 |
| 70-100 | 0.45 | 9.64 | 94.0 | 1,629.5 | 1,911.5 | 37.0 | 17.1 | 6.7 | 5.7 | 1.4 | 0.3 | 0.3 | 1.0 |
| 70-105 | 0.45 | 1.63 | 15.9 | 275.5 | 323.2 | 6.3 | 2.9 | 1.1 | 1.0 | 0.2 | 0.1 | 0.1 | 0.2 |
| 70-110 | 0.45 | 18.13 | 176.8 | 3,064.6 | 3,595.0 | 69.5 | 32.2 | 12.5 | 10.8 | 2.7 | 0.6 | 0.6 | 1.8 |
| 70-115 | 0.45 | 3.71 | 36.2 | 627.1 | 735.7 | 14.2 | 6.6 | 2.6 | 2.2 | 0.5 | 0.1 | 0.1 | 0.4 |
| 70-120 | 0.45 | 4.22 | 41.2 | 713.3 | 836.8 | 16.2 | 7.5 | 2.9 | 2.5 | 0.6 | 0.1 | 0.1 | 0.4 |
| 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 |
| 70-130 | 0.49 | 34.29 | 366.9 | 6,359.0 | 7,459.6 | 144.3 | 66.9 | 26.0 | 22.3 | 5.5 | 1.2 | 1.3 | 3.8 |
| 70-135 | 0.45 | 7.46 | 72.8 | 1,261.0 | 1,479.3 | 28.6 | 13.3 | 5.2 | 4.4 | 1.1 | 0.2 | 0.3 | 0.8 |
| 70-140 | 0.60 | 0.78 | 10.1 | 175.8 | 206.2 | 4.0 | 1.8 | 0.7 | 0.6 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-145 | 0.60 | 9.19 | 119.5 | 2,071.2 | 2,429.7 | 47.0 | 21.8 | 8.5 | 7.3 | 1.8 | 0.4 | 0.4 | 1.2 |
| 70-150 | 0.45 | 4.51 | 44.0 | 762.3 | 894.3 | 17.3 | 8.0 | 3.1 | 2.7 | 0.7 | 0.1 | 0.2 | 0.5 |
| 70-155 | 0.45 | 2.05 | 20.0 | 346.5 | 406.5 | 7.9 | 3.6 | 1.4 | 1.2 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-160 | 0.45 | 2.95 | 28.8 | 498.7 | 585.0 | 11.3 | 5.2 | 2.0 | 1.8 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-165 | 0.45 | 27.77 | 270.8 | 4,694.1 | 5,506.5 | 106.5 | 49.3 | 19.2 | 16.5 | 4.1 | 0.9 | 0.9 | 2.8 |
| 70-170 | 0.45 | 23.74 | 231.5 | 4,012.9 | 4,707.4 | 91.1 | 42.2 | 16.4 | 14.1 | 3.5 | 0.7 | 0.8 | 2.4 |
| 70-175 | 0.46 | 30.89 | 306.1 | 5,305.3 | 6,223.5 | 120.4 | 55.8 | 21.7 | 18.6 | 4.6 | 1.0 | 1.1 | 3.2 |
| 70-180 | 0.45 | 1.14 | 11.1 | 192.7 | 226.1 | 4.4 | 2.0 | 0.8 | 0.7 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-185 | 0.45 | 1.53 | 14.9 | 258.6 | 303.4 | 5.9 | 2.7 | 1.1 | 0.9 | 0.2 | 0.0 | 0.1 | 0.2 |
| 70-190 | 0.17 | 15.04 | 56.1 | 972.3 | 1,140.6 | 22.1 | 10.2 | 4.0 | 3.4 | 0.8 | 0.2 | 0.2 | 0.6 |
| 70-195 | 0.45 | 46.02 | 451.2 | 7,821.4 | 9,175.1 | 177.5 | 82.2 | 32.0 | 27.5 | 6.8 | 1.4 | 1.6 | 4.7 |
| 70-200 | 0.45 | 31.52 | 307.4 | 5,328.0 | 6,250.1 | 120.9 | 56.0 | 21.8 | 18.7 | 4.6 | 1.0 | 1.1 | 3.2 |
| 70-205 | 0.45 | 1.39 | 13.6 | 235.0 | 275.6 | 5.3 | 2.5 | 1.0 | 0.8 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-210 | 0.45 | 3.58 | 34.9 | 605.1 | 709.9 | 13.7 | 6.4 | 2.5 | 2.1 | 0.5 | 0.1 | 0.1 | 0.4 |
| 70-215 | 0.45 | 5.93 | 57.8 | 1,002.4 | 1,175.9 | 22.7 | 10.5 | 4.1 | 3.5 | 0.9 | 0.2 | 0.2 | 0.6 |
| 70-220 | 0.45 | 4.54 | 44.3 | 767.4 | 900.2 | 17.4 | 8.1 | 3.1 | 2.7 | 0.7 | 0.1 | 0.2 | 0.5 |
| 70-225 | 0.45 | 4.99 | 48.7 | 843.5 | 989.5 | 19.1 | 8.9 | 3.4 | 3.0 | 0.7 | 0.2 | 0.2 | 0.5 |
| 70-230 | 0.45 | 4.72 | 46.0 | 797.8 | 935.9 | 18.1 | 8.4 | 3.3 | 2.8 | 0.7 | 0.1 | 0.2 | 0.5 |
| 70-235 | 0.45 | 5.04 | 49.2 | 851.9 | 999.4 | 19.3 | 9.0 | 3.5 | 3.0 | 0.7 | 0.2 | 0.2 | 0.5 |
| 70-240 | 0.45 | 4.52 | 44.1 | 764.0 | 896.3 | 17.3 | 8.0 | 3.1 | 2.7 | 0.7 | 0.1 | 0.2 | 0.5 |
| 70-245 | 0.44 | 9.98 | 94.9 | 1,645.6 | 1,930.5 | 37.3 | 17.3 | 6.7 | 5.8 | 1.4 | 0.3 | 0.3 | 1.0 |
| 70-250 | 0.48 | 41.27 | 431.4 | 7,477.7 | 8,771.9 | 169.7 | 78.6 | 30.6 | 26.3 | 6.5 | 1.4 | 1.5 | 4.5 |
| 70-255 | 0.45 | 45.37 | 442.6 | 7,671.4 | 8,999.2 | 174.1 | 80.6 | 31.4 | 26.9 | 6.6 | 1.4 | 1.5 | 4.6 |
| 70-260 | 0.46 | 24.9 | 247.0 | 4,281.5 | 5,022.5 | 97.2 | 45.0 | 17.5 | 15.0 | 3.7 | 0.8 | 0.9 | 2.6 |

# 2006 POLLUTANT LOADINGS BY OUTFALL

**2006 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean Flow Weighted Mean Concentration - all 2006 sites | | | 9.00 | 156 | 183 | 3.54 | 1.640 | 0.638 | 0.548 | 0.135 | 0.029 | 0.031 | 0.094 |
| Precipitation (meters) | 0.7 | | | | | | | | | | | | |
| 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 |
| 70-270 | 0.45 | 4.66 | 45.4 | 787.7 | 924.0 | 17.9 | 8.3 | 3.2 | 2.8 | 0.7 | 0.1 | 0.2 | 0.5 |
| 70-275 | 0.45 | 4.28 | 41.7 | 723.5 | 848.7 | 16.4 | 7.6 | 3.0 | 2.5 | 0.6 | 0.1 | 0.1 | 0.4 |
| 70-280 | 0.45 | 9.39 | 91.7 | 1,589.9 | 1,865.1 | 36.1 | 16.7 | 6.5 | 5.6 | 1.4 | 0.3 | 0.3 | 1.0 |
| 70-285 | 0.45 | 19.03 | 185.4 | 3,213.2 | 3,769.4 | 72.9 | 33.8 | 13.1 | 11.3 | 2.8 | 0.6 | 0.6 | 1.9 |
| 70-290 | 0.45 | 2.37 | 22.9 | 397.2 | 466.0 | 9.0 | 4.2 | 1.6 | 1.4 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-295 | 0.45 | 7.18 | 70.0 | 1,213.7 | 1,423.7 | 27.5 | 12.8 | 5.0 | 4.3 | 1.1 | 0.2 | 0.2 | 0.7 |
| 70-300 | 0.10 | 0.4 | 0.9 | 15.0 | 17.6 | 0.3 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-305 | 0.45 | 12.68 | 122.5 | 2,124.1 | 2,491.7 | 48.2 | 22.3 | 8.7 | 7.5 | 1.8 | 0.4 | 0.4 | 1.3 |
| 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 |
| 70-315 | 0.30 | 5.79 | 37.6 | 652.5 | 765.4 | 14.8 | 6.9 | 2.7 | 2.3 | 0.6 | 0.1 | 0.1 | 0.4 |
| 70-320 | 0.44 | 2.32 | 22.1 | 382.7 | 449.0 | 8.7 | 4.0 | 1.6 | 1.3 | 0.3 | 0.1 | 0.1 | 0.2 |
| 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 |
| 70-330 | 0.47 | 279.41 | 2,852.2 | 49,438.9 | 57,995.6 | 1,121.9 | 519.7 | 202.2 | 173.7 | 42.8 | 9.1 | 9.8 | 29.8 |
| 70-335 | 0.45 | 1.99 | 19.4 | 336.4 | 394.6 | 7.6 | 3.5 | 1.4 | 1.2 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-340 | 0.39 | 22.25 | 189.7 | 3,288.2 | 3,857.3 | 74.6 | 34.6 | 13.4 | 11.6 | 2.8 | 0.6 | 0.7 | 2.0 |
| 70-345 | 0.45 | 3.81 | 37.2 | 644.0 | 755.5 | 14.6 | 6.8 | 2.6 | 2.3 | 0.6 | 0.1 | 0.1 | 0.4 |
| 70-350 | 0.49 | 314.4 | 3,366.6 | 58,355.1 | 68,455.1 | 1,324.2 | 613.5 | 238.7 | 205.0 | 50.5 | 10.8 | 11.6 | 35.2 |
| 70-355 | 0.45 | 1.29 | 12.6 | 218.1 | 255.8 | 4.9 | 2.3 | 0.9 | 0.8 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-360 | 0.45 | 131.96 | 1,299.8 | 22,529.4 | 26,428.7 | 511.2 | 236.8 | 92.1 | 79.1 | 19.5 | 4.2 | 4.5 | 13.6 |
| 70-365 | 0.45 | 6.7 | 65.3 | 1,132.5 | 1,328.5 | 25.7 | 11.9 | 4.6 | 4.0 | 1.0 | 0.2 | 0.2 | 0.7 |
| 70-370 | 0.44 | 3.75 | 36.0 | 624.0 | 732.0 | 14.2 | 6.6 | 2.6 | 2.2 | 0.5 | 0.1 | 0.1 | 0.4 |
| 70-375 | 0.47 | 7.1 | 72.7 | 1,260.5 | 1,478.7 | 28.6 | 13.3 | 5.2 | 4.4 | 1.1 | 0.2 | 0.3 | 0.8 |
| 70-380 | 0.45 | 14.4 | 140.4 | 2,434.1 | 2,855.4 | 55.2 | 25.6 | 10.0 | 8.6 | 2.1 | 0.4 | 0.5 | 1.5 |
| 70-385 | 0.45 | 14.97 | 146.0 | 2,530.5 | 2,968.4 | 57.4 | 26.6 | 10.3 | 8.9 | 2.2 | 0.5 | 0.5 | 1.5 |
| 70-390 | 0.46 | 58.11 | 583.4 | 10,111.5 | 11,861.6 | 229.5 | 106.3 | 41.4 | 35.5 | 8.8 | 1.9 | 2.0 | 6.1 |
| 70-395 | 0.43 | 57.19 | 532.3 | 9,227.3 | 10,824.3 | 209.4 | 97.0 | 37.7 | 32.4 | 8.0 | 1.7 | 1.8 | 5.6 |
| 70-400 | 0.44 | 9.67 | 92.0 | 1,594.0 | 1,869.9 | 36.2 | 16.8 | 6.5 | 5.6 | 1.4 | 0.3 | 0.3 | 1.0 |
| 70-405 | 0.25 | 7.16 | 38.8 | 672.6 | 789.0 | 15.3 | 7.1 | 2.8 | 2.4 | 0.6 | 0.1 | 0.1 | 0.4 |
| 70-410 | 0.43 | 5.8 | 53.9 | 934.3 | 1,096.1 | 21.2 | 9.8 | 3.8 | 3.3 | 0.8 | 0.2 | 0.2 | 0.6 |
| 70-415 | 0.45 | 120.75 | 1,187.9 | 20,590.6 | 24,154.3 | 467.2 | 216.5 | 84.2 | 72.3 | 17.8 | 3.8 | 4.1 | 12.4 |
| 70-420 | 0.45 | 16.99 | 165.7 | 2,871.9 | 3,369.0 | 65.2 | 30.2 | 11.7 | 10.1 | 2.5 | 0.5 | 0.6 | 1.7 |
| 70-425 | 0.51 | 20.63 | 228.5 | 3,959.8 | 4,645.2 | 89.9 | 41.6 | 16.2 | 13.9 | 3.4 | 0.7 | 0.8 | 2.4 |
| 70-430 | 0.10 | 6.19 | 13.4 | 232.5 | 272.8 | 5.3 | 2.4 | 1.0 | 0.8 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-435 | 0.10 | 9.16 | 19.9 | 344.1 | 403.6 | 7.8 | 3.6 | 1.4 | 1.2 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-440 | 0.50 | 34.48 | 371.2 | 6,433.3 | 7,546.8 | 146.0 | 67.6 | 26.3 | 22.6 | 5.6 | 1.2 | 1.3 | 3.9 |
| 70-445 | 0.45 | 5.6 | 54.6 | 946.6 | 1,110.4 | 21.5 | 10.0 | 3.9 | 3.3 | 0.8 | 0.2 | 0.2 | 0.6 |
| 70-450 | 0.45 | 2.65 | 25.8 | 447.9 | 525.5 | 10.2 | 4.7 | 1.8 | 1.6 | 0.4 | 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 |
| 70-460 | 0.45 | 2.67 | 26.0 | 451.3 | 529.4 | 10.2 | 4.7 | 1.8 | 1.6 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-465 | 0.45 | 2.58 | 25.2 | 436.1 | 511.6 | 9.9 | 4.6 | 1.8 | 1.5 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-470 | 0.38 | 8.55 | 71.2 | 1,233.5 | 1,447.0 | 28.0 | 13.0 | 5.0 | 4.3 | 1.1 | 0.2 | 0.2 | 0.7 |
| 70-475 | 0.46 | 229.14 | 2,285.9 | 39,621.8 | 46,479.4 | 899.1 | 416.5 | 162.0 | 139.2 | 34.3 | 7.3 | 7.9 | 23.9 |
| 70-480 | 0.60 | 0.31 | 4.0 | 69.9 | 82.0 | 1.6 | 0.7 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-485 | 0.45 | 13.36 | 130.3 | 2,258.3 | 2,649.2 | 51.2 | 23.7 | 9.2 | 7.9 | 2.0 | 0.4 | 0.4 | 1.4 |
| 70-490 | 0.47 | 48.75 | 495.9 | 8,595.1 | 10,082.7 | 195.0 | 90.4 | 35.2 | 30.2 | 7.4 | 1.6 | 1.7 | 5.2 |
| 70-495 | 0.45 | 7.74 | 75.5 | 1,308.3 | 1,534.8 | 29.7 | 13.8 | 5.4 | 4.6 | 1.1 | 0.2 | 0.3 | 0.8 |
| 70-500 | 0.45 | 0.56 | 5.5 | 94.7 | 111.0 | 2.1 | 1.0 | 0.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-505 | 0.41 | 8.12 | 72.4 | 1,255.6 | 1,472.9 | 28.5 | 13.2 | 5.1 | 4.4 | 1.1 | 0.2 | 0.2 | 0.8 |
| 70-510 | 0.45 | 41.82 | 409.2 | 7,092.1 | 8,319.6 | 160.9 | 74.6 | 29.0 | 24.9 | 6.1 | 1.3 | 1.4 | 4.3 |
| 70-515 | 0.47 | 62.73 | 638.8 | 11,073.1 | 12,989.6 | 251.3 | 116.4 | 45.3 | 38.9 | 9.6 | 2.0 | 2.2 | 6.7 |
| 70-520 | 0.45 | 6.05 | 59.0 | 1,022.7 | 1,199.7 | 23.2 | 10.8 | 4.2 | 3.6 | 0.9 | 0.2 | 0.2 | 0.6 |
| 70-525 | 0.45 | 6.23 | 60.8 | 1,053.1 | 1,235.4 | 23.9 | 11.1 | 4.3 | 3.7 | 0.9 | 0.2 | 0.2 | 0.6 |
| 70-530 | 0.45 | 1.67 | 16.3 | 282.3 | 331.1 | 6.4 | 3.0 | 1.2 | 1.0 | 0.2 | 0.1 | 0.1 | 0.2 |
| 70-535 | 0.45 | 30.24 | 295.6 | 5,123.5 | 6,010.2 | 116.3 | 53.9 | 21.0 | 18.0 | 4.4 | 0.9 | 1.0 | 3.1 |
| 70-540 | 0.21 | 5.1 | 23.6 | 409.0 | 479.7 | 9.3 | 4.3 | 1.7 | 1.4 | 0.4 | 0.1 | 0.1 | 0.2 |
| 70-545 | 0.45 | 1.89 | 18.4 | 319.5 | 374.8 | 7.2 | 3.4 | 1.3 | 1.1 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-550 | 0.26 | 1.3 | 7.3 | 126.4 | 148.3 | 2.9 | 1.3 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-555 | 0.45 | 1.73 | 16.9 | 292.4 | 343.0 | 6.6 | 3.1 | 1.2 | 1.0 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-560 | 0.45 | 3.33 | 32.5 | 562.9 | 660.3 | 12.8 | 5.9 | 2.3 | 2.0 | 0.5 | 0.1 | 0.1 | 0.3 |
| 70-565 | 0.24 | 16.63 | 86.7 | 1,502.7 | 1,762.8 | 34.1 | 15.8 | 6.1 | 5.3 | 1.3 | 0.3 | 0.3 | 0.9 |
| 70-570 | 0.45 | 1.23 | 12.0 | 207.9 | 243.9 | 4.7 | 2.2 | 0.9 | 0.7 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-575 | 0.45 | 15.39 | 149.9 | 2,598.8 | 3,048.6 | 59.0 | 27.3 | 10.6 | 9.1 | 2.2 | 0.5 | 0.5 | 1.6 |
| 70-580 | 0.43 | 119.93 | 1,127.4 | 19,542.4 | 22,924.7 | 443.5 | 205.4 | 79.9 | 68.6 | 16.9 | 3.6 | 3.9 | 11.8 |
| 71-010 | 0.10 | 1.12 | 2.4 | 42.1 | 49.4 | 1.0 | 0.4 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 71-020 | 0.45 | 14.05 | 137.0 | 2,374.9 | 2,786.0 | 53.9 | 25.0 | 9.7 | 8.3 | 2.1 | 0.4 | 0.5 | 1.4 |
| 71-030 | 0.45 | 28.58 | 280.2 | 4,857.4 | 5,698.1 | 110.2 | 51.1 | 19.9 | 17.1 | 4.2 | 0.9 | 1.0 | 2.9 |
| 71-040 | 0.22 | 20.93 | 99.6 | 1,725.6 | 2,024.3 | 39.2 | 18.1 | 7.1 | 6.1 | 1.5 | 0.3 | 0.3 | 1.0 |
| 71-050 | 0.46 | 120.42 | 1,195.2 | 20,716.8 | 24,302.4 | 470.1 | 217.8 | 84.7 | 72.8 | 17.9 | 3.8 | 4.1 | 12.5 |
| 71-060 | 0.45 | 3.11 | 30.3 | 525.7 | 616.7 | 11.9 | 5.5 | 2.1 | 1.8 | 0.5 | 0.1 | 0.1 | 0.3 |
| 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 |
| 71-080 | 0.46 | 101.79 | 1,006.5 | 17,446.2 | 20,465.7 | 395.9 | 183.4 | 71.4 | 61.3 | 15.1 | 3.2 | 3.5 | 10.5 |
| 71-090 | 0.45 | 6.5 | 62.8 | 1,087.9 | 1,276.2 | 24.7 | 11.4 | 4.4 | 3.8 | 0.9 | 0.2 | 0.2 | 0.7 |
| 71-100 | 0.10 | 1.99 | 4.3 | 74.8 | 87.7 | 1.7 | 0.8 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 72-010 | 0.18 | 17.32 | 65.7 | 1,139.2 | 1,336.4 | 25.9 | 12.0 | 4.7 | 4.0 | 1.0 | 0.2 | 0.2 | 0.7 |
| 72-020 | 0.40 | 24.7 | 211.5 | 3,666.1 | 4,300.6 | 83.2 | 38.5 | 15.0 | 12.9 | 3.2 | 0.7 | 0.7 | 2.2 |
| 72-030 | 0.10 | 5.25 | 11.4 | 197.2 | 231.3 | 4.5 | 2.1 | 0.8 | 0.7 | 0.2 | 0.0 | 0.0 | 0.1 |
| 72-040 | 0.42 | 166.54 | 1,503.3 | 26,057.6 | 30,567.5 | 591.3 | 273.9 | 106.6 | 91.5 | 22.5 | 4.8 | 5.2 | 15.7 |
| 72-050 | 0.10 | 5.16 | 11.2 | 193.8 | 227.4 | 4.4 | 2.0 | 0.8 | 0.7 | 0.2 | 0.0 | 0.0 | 0.1 |

# 2006 POLLUTANT LOADINGS BY OUTFALL

**2006 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mean Flow Weighted Mean Concentration - all 2006 sites** | | | 9.00 | 156 | 183 | 3.54 | 1.640 | 0.638 | 0.548 | 0.135 | 0.029 | 0.031 | 0.094 |
| **Precipitation (meters)** | **0.7** | | | | | | | | | | | | |
| 72-060 | 0.36 | 113.04 | 886.1 | 15,359.2 | 18,017.5 | 348.5 | 161.5 | 62.8 | 54.0 | 13.3 | 2.8 | 3.1 | 9.3 |
| 72-070 | 0.10 | 2.21 | 4.8 | 83.0 | 97.4 | 1.9 | 0.9 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.1 |
| 72-080 | 0.60 | 4.74 | 61.6 | 1,068.3 | 1,253.2 | 24.2 | 11.2 | 4.4 | 3.8 | 0.9 | 0.2 | 0.2 | 0.6 |
| 72-090 | 0.45 | 68.71 | 665.8 | 11,541.4 | 13,538.9 | 261.9 | 121.3 | 47.2 | 40.5 | 10.0 | 2.1 | 2.3 | 7.0 |
| 72-100 | 0.46 | 68.32 | 685.5 | 11,882.2 | 13,938.8 | 269.6 | 124.9 | 48.6 | 41.7 | 10.3 | 2.2 | 2.4 | 7.2 |
| 72-110 | 0.10 | 3.22 | 7.0 | 121.0 | 141.9 | 2.7 | 1.3 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 72-120 | 0.45 | 62.98 | 614.2 | 10,645.8 | 12,488.4 | 241.6 | 111.9 | 43.5 | 37.4 | 9.2 | 2.0 | 2.1 | 6.4 |
| 72-130 | 0.46 | 58.06 | 574.2 | 9,952.2 | 11,674.7 | 225.8 | 104.6 | 40.7 | 35.0 | 8.6 | 1.8 | 2.0 | 6.0 |
| 72-140 | 0.10 | 10.19 | 22.1 | 382.8 | 449.0 | 8.7 | 4.0 | 1.6 | 1.3 | 0.3 | 0.1 | 0.1 | 0.2 |
| 72-150 | 0.10 | 4.76 | 10.3 | 178.8 | 209.7 | 4.1 | 1.9 | 0.7 | 0.6 | 0.2 | 0.0 | 0.0 | 0.1 |
| 72-160 | 0.10 | 4.55 | 9.9 | 170.9 | 200.5 | 3.9 | 1.8 | 0.7 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 73-010 | 0.44 | 20.76 | 197.5 | 3,422.5 | 4,014.8 | 77.7 | 36.0 | 14.0 | 12.0 | 3.0 | 0.6 | 0.7 | 2.1 |
| 73-020 | 0.44 | 57.47 | 551.2 | 9,554.3 | 11,207.9 | 216.8 | 100.4 | 39.1 | 33.6 | 8.3 | 1.8 | 1.9 | 5.8 |
| 73-030 | 0.10 | 21.56 | 46.7 | 809.9 | 950.0 | 18.4 | 8.5 | 3.3 | 2.8 | 0.7 | 0.1 | 0.2 | 0.5 |
| 74-010 | 0.48 | 44.39 | 460.5 | 7,981.4 | 9,362.8 | 181.1 | 83.9 | 32.6 | 28.0 | 6.9 | 1.5 | 1.6 | 4.8 |
| 74-020 | 0.45 | 4.41 | 43.0 | 745.4 | 874.5 | 16.9 | 7.8 | 3.0 | 2.6 | 0.6 | 0.1 | 0.1 | 0.4 |
| 75-005 | 0.45 | 12.39 | 120.7 | 2,091.8 | 2,453.9 | 47.5 | 22.0 | 8.6 | 7.3 | 1.8 | 0.4 | 0.4 | 1.3 |
| 75-010 | 0.60 | 3.65 | 47.5 | 822.6 | 965.0 | 18.7 | 8.6 | 3.4 | 2.9 | 0.7 | 0.2 | 0.2 | 0.5 |
| 75-020 | 0.45 | 1.53 | 14.9 | 258.6 | 303.4 | 5.9 | 2.7 | 1.1 | 0.9 | 0.2 | 0.0 | 0.1 | 0.2 |
| 75-030 | 0.45 | 8.38 | 81.7 | 1,416.5 | 1,661.7 | 32.1 | 14.9 | 5.8 | 5.0 | 1.2 | 0.3 | 0.3 | 0.9 |
| 75-040 | 0.45 | 14.74 | 143.7 | 2,491.6 | 2,922.8 | 56.5 | 26.2 | 10.2 | 8.8 | 2.2 | 0.5 | 0.5 | 1.5 |
| 76-010 | 0.46 | 907.31 | 9,120.2 | 158,084.0 | 185,444.7 | 3,587.3 | 1,661.9 | 646.5 | 555.3 | 136.8 | 29.2 | 31.4 | 95.3 |
| 76-020 | 0.46 | 88.62 | 875.1 | 15,168.8 | 17,794.2 | 344.2 | 159.5 | 62.0 | 53.3 | 13.1 | 2.8 | 3.0 | 9.1 |
| 76-030 | 0.45 | 7.55 | 73.6 | 1,276.2 | 1,497.1 | 29.0 | 13.4 | 5.2 | 4.5 | 1.1 | 0.2 | 0.3 | 0.8 |
| 76-040 | 0.19 | 4.67 | 18.8 | 326.5 | 383.0 | 7.4 | 3.4 | 1.3 | 1.1 | 0.3 | 0.1 | 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 |
| 81-010 | 0.10 | 31.17 | 67.5 | 1,170.8 | 1,373.5 | 26.6 | 12.3 | 4.8 | 4.1 | 1.0 | 0.2 | 0.2 | 0.7 |
| 82-010 | 0.49 | 23.53 | 248.1 | 4,300.7 | 5,045.0 | 97.6 | 45.2 | 17.6 | 15.1 | 3.7 | 0.8 | 0.9 | 2.6 |
| 82-020 | 0.45 | 73.45 | 723.9 | 12,548.5 | 14,720.3 | 284.8 | 131.9 | 51.3 | 44.1 | 10.9 | 2.3 | 2.5 | 7.6 |
| 82-030 | 0.45 | 90.04 | 887.2 | 15,378.9 | 18,040.6 | 349.0 | 161.7 | 62.9 | 54.0 | 13.3 | 2.8 | 3.1 | 9.3 |
| 82-040 | 0.46 | 98.49 | 990.2 | 17,162.7 | 20,133.1 | 389.5 | 180.4 | 70.2 | 60.3 | 14.9 | 3.2 | 3.4 | 10.3 |
| 83-010 | 0.45 | 6.59 | 64.3 | 1,113.9 | 1,306.7 | 25.3 | 11.7 | 4.6 | 3.9 | 1.0 | 0.2 | 0.2 | 0.7 |
| 83-015 | 0.45 | 0.99 | 9.7 | 167.3 | 196.3 | 3.8 | 1.8 | 0.7 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 83-020 | 0.43 | 85.96 | 809.9 | 14,038.6 | 16,468.4 | 318.6 | 147.6 | 57.4 | 49.3 | 12.1 | 2.6 | 2.8 | 8.5 |
| 83-025 | 0.45 | 51.23 | 499.6 | 8,659.7 | 10,158.4 | 196.5 | 91.0 | 35.4 | 30.4 | 7.5 | 1.6 | 1.7 | 5.2 |
| 83-030 | 0.60 | 0.82 | 10.7 | 184.8 | 216.8 | 4.2 | 1.9 | 0.8 | 0.6 | 0.2 | 0.0 | 0.0 | 0.1 |
| 83-040 | 0.10 | 1.08 | 2.3 | 40.6 | 47.6 | 0.9 | 0.4 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-050 | 0.45 | 40.4 | 395.1 | 6,847.7 | 8,032.9 | 155.4 | 72.0 | 28.0 | 24.1 | 5.9 | 1.3 | 1.4 | 4.1 |
| 83-060 | 0.45 | 10.05 | 98.0 | 1,698.8 | 1,992.8 | 38.5 | 17.9 | 6.9 | 6.0 | 1.5 | 0.3 | 0.3 | 1.0 |
| 83-070 | 0.10 | 1.19 | 2.6 | 44.7 | 52.4 | 1.0 | 0.5 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-080 | 0.48 | 178.63 | 1,840.5 | 31,901.7 | 37,423.2 | 723.9 | 335.4 | 130.5 | 112.1 | 27.6 | 5.9 | 6.3 | 19.2 |
| 83-090 | 0.41 | 9.16 | 81.3 | 1,410.0 | 1,654.0 | 32.0 | 14.8 | 5.8 | 5.0 | 1.2 | 0.3 | 0.3 | 0.8 |
| 84-010 | 0.47 | 21.56 | 219.8 | 3,809.1 | 4,468.4 | 86.4 | 40.0 | 15.6 | 13.4 | 3.3 | 0.7 | 0.8 | 2.3 |
| 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 |
| **ANNUAL SUMMATION (kg)** | | | **292,730.19** | **5,073,989.98** | **5,952,180.56** | **115,140.54** | **53,341.95** | **20,751.32** | **17,824.02** | **4,390.95** | **936.74** | **1,008.29** | **3,057.40** |

# 2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

**2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/06 - 03/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Winter/snowmelt Median Event Mean Concentration | | | 10.8 | 240 | 909 | 3.72 | 1.160 | 0.833 | 0.769 | 0.078 | 0.061 | 0.039 | 0.240 |
| Precipitation (meters) | 0.077 | | | | | | | | | | | | |
| 10-010 | 0.43 | 113.55 | 140.1 | 3,114.1 | 11,794.6 | 48.3 | 15.1 | 10.8 | 10.0 | 1.0 | 0.8 | 0.5 | 3.1 |
| 10-020 | 0.45 | 7.81 | 10.1 | 223.4 | 846.2 | 3.5 | 1.1 | 0.8 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 10-030 | 0.10 | 4.05 | 1.2 | 25.7 | 97.5 | 0.4 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-040 | 0.45 | 167.42 | 214.0 | 4,756.0 | 18,013.2 | 73.7 | 23.0 | 16.5 | 15.2 | 1.5 | 1.2 | 0.8 | 4.8 |
| 10-050 | 0.46 | 114.18 | 148.7 | 3,304.0 | 12,513.9 | 51.2 | 16.0 | 11.5 | 10.6 | 1.1 | 0.8 | 0.5 | 3.3 |
| 10-060 | 0.60 | 10.5 | 18.0 | 400.5 | 1,516.8 | 6.2 | 1.9 | 1.4 | 1.3 | 0.1 | 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 |
| 10-080 | 0.38 | 30.66 | 33.5 | 744.8 | 2,820.9 | 11.5 | 3.6 | 2.6 | 2.4 | 0.2 | 0.2 | 0.1 | 0.7 |
| 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 |
| 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 |
| 10-090C | 0.54 | 12.77 | 19.8 | 439.6 | 1,664.9 | 6.8 | 2.1 | 1.5 | 1.4 | 0.1 | 0.1 | 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 |
| 10-100 | 0.36 | 1392.1 | 1,444.4 | 32,098.7 | 121,573.6 | 497.5 | 155.1 | 111.4 | 102.8 | 10.4 | 8.2 | 5.3 | 32.1 |
| 10-110 | 0.47 | 300.11 | 400.5 | 8,900.4 | 33,710.2 | 138.0 | 43.0 | 30.9 | 28.5 | 2.9 | 2.3 | 1.5 | 8.9 |
| 10-120A/B | 0.44 | 372.78 | 464.1 | 10,314.4 | 39,065.7 | 159.9 | 49.9 | 35.8 | 33.0 | 3.4 | 2.6 | 1.7 | 10.3 |
| 10-130 | 0.45 | 336.46 | 434.6 | 9,657.3 | 36,576.9 | 149.7 | 46.7 | 33.5 | 30.9 | 3.1 | 2.5 | 1.6 | 9.7 |
| 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 |
| 10-140a,b | 0.58 | 220.65 | 363.2 | 8,071.2 | 30,569.8 | 125.1 | 39.0 | 28.0 | 25.9 | 2.6 | 2.1 | 1.3 | 8.1 |
| 10-150 | 0.47 | 157.15 | 210.8 | 4,684.0 | 17,740.5 | 72.6 | 22.6 | 16.3 | 15.0 | 1.5 | 1.2 | 0.8 | 4.7 |
| 10-160 | 0.00 | 17 | 0.1 | 2.7 | 10.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-170 | 0.50 | 176.01 | 253.4 | 5,630.4 | 21,325.3 | 87.3 | 27.2 | 19.5 | 18.0 | 1.8 | 1.4 | 0.9 | 5.6 |
| 10-180 | 0.45 | 284.26 | 362.1 | 8,046.9 | 30,477.5 | 124.7 | 38.9 | 27.9 | 25.8 | 2.6 | 2.1 | 1.3 | 8.0 |
| 10-190 | 0.59 | 14.58 | 24.7 | 548.4 | 2,077.2 | 8.5 | 2.7 | 1.9 | 1.8 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-200 | 0.40 | 42.44 | 48.2 | 1,071.2 | 4,057.0 | 16.6 | 5.2 | 3.7 | 3.4 | 0.3 | 0.3 | 0.2 | 1.1 |
| 10-210 | 0.49 | 98.32 | 138.3 | 3,072.4 | 11,636.7 | 47.6 | 14.8 | 10.7 | 9.8 | 1.0 | 0.8 | 0.5 | 3.1 |
| 10-220 | 0.56 | 18.83 | 30.1 | 669.2 | 2,534.7 | 10.4 | 3.2 | 2.3 | 2.1 | 0.2 | 0.2 | 0.1 | 0.7 |
| 10-230 | 0.47 | 235.02 | 317.8 | 7,062.1 | 26,747.8 | 109.5 | 34.1 | 24.5 | 22.6 | 2.3 | 1.8 | 1.2 | 7.1 |
| 10-240 | 0.51 | 103.83 | 152.6 | 3,390.7 | 12,842.1 | 52.6 | 16.4 | 11.8 | 10.9 | 1.1 | 0.9 | 0.6 | 3.4 |
| 10-250 | 0.49 | 242.96 | 339.8 | 7,550.2 | 28,596.2 | 117.0 | 36.5 | 26.2 | 24.2 | 2.5 | 1.9 | 1.2 | 7.6 |
| 10-260 | 0.56 | 23.77 | 37.9 | 841.9 | 3,188.6 | 13.0 | 4.1 | 2.9 | 2.7 | 0.3 | 0.2 | 0.1 | 0.8 |
| 10-270 | 0.47 | 72.45 | 98.2 | 2,182.4 | 8,265.7 | 33.8 | 10.5 | 7.6 | 7.0 | 0.7 | 0.6 | 0.4 | 2.2 |
| 10-280 | 0.44 | 55.08 | 69.9 | 1,554.0 | 5,885.7 | 24.1 | 7.5 | 5.4 | 5.0 | 0.5 | 0.4 | 0.3 | 1.6 |
| 10-290 | 0.10 | 6.83 | 2.0 | 43.4 | 164.4 | 0.7 | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-300 | 0.36 | 17.74 | 18.3 | 406.6 | 1,540.2 | 6.3 | 2.0 | 1.4 | 1.3 | 0.1 | 0.1 | 0.1 | 0.4 |
| 10-310 | 0.47 | 60.29 | 81.4 | 1,809.8 | 6,854.8 | 28.1 | 8.7 | 6.3 | 5.8 | 0.6 | 0.5 | 0.3 | 1.8 |
| 10-320 | 0.45 | 341.99 | 442.0 | 9,821.4 | 37,198.5 | 152.2 | 47.5 | 34.1 | 31.5 | 3.2 | 2.5 | 1.6 | 9.8 |
| 10-330 | 0.35 | 21.61 | 21.7 | 483.0 | 1,829.2 | 7.5 | 2.3 | 1.7 | 1.5 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-340 | 0.45 | 20.74 | 26.8 | 594.9 | 2,253.1 | 9.2 | 2.9 | 2.1 | 1.9 | 0.2 | 0.2 | 0.1 | 0.6 |
| 10-350 | 0.60 | 28.16 | 48.2 | 1,072.1 | 4,060.5 | 16.6 | 5.2 | 3.7 | 3.4 | 0.3 | 0.3 | 0.2 | 1.1 |
| 10-360 | 0.59 | 29.02 | 49.2 | 1,093.3 | 4,141.0 | 16.9 | 5.3 | 3.8 | 3.5 | 0.4 | 0.3 | 0.2 | 1.1 |
| 10-370 | 0.59 | 14.46 | 24.4 | 541.9 | 2,052.6 | 8.4 | 2.6 | 1.9 | 1.7 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-380 | 0.45 | 14.38 | 18.3 | 406.9 | 1,541.3 | 6.3 | 2.0 | 1.4 | 1.3 | 0.1 | 0.1 | 0.1 | 0.4 |
| 10-390 | 0.49 | 41.97 | 59.2 | 1,315.5 | 4,982.4 | 20.4 | 6.4 | 4.6 | 4.2 | 0.4 | 0.3 | 0.2 | 1.3 |
| 10-400A | 0.10 | 1.07 | 0.3 | 6.8 | 25.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-400B | 0.47 | 17.66 | 23.8 | 529.4 | 2,005.2 | 8.2 | 2.6 | 1.8 | 1.7 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-400C | 0.57 | 50.25 | 81.3 | 1,807.3 | 6,845.2 | 28.0 | 8.7 | 6.3 | 5.8 | 0.6 | 0.5 | 0.3 | 1.8 |
| 10-410A | 0.50 | 46.22 | 65.8 | 1,462.7 | 5,540.0 | 22.7 | 7.1 | 5.1 | 4.7 | 0.5 | 0.4 | 0.2 | 1.5 |
| 10-410B | 0.32 | 21.29 | 19.3 | 428.2 | 1,621.8 | 6.6 | 2.1 | 1.5 | 1.4 | 0.1 | 0.1 | 0.1 | 0.4 |
| 10-410C | 0.53 | 22.8 | 34.4 | 765.0 | 2,897.4 | 11.9 | 3.7 | 2.7 | 2.5 | 0.2 | 0.2 | 0.1 | 0.8 |
| 10-410D | 0.60 | 27.34 | 46.9 | 1,043.2 | 3,951.1 | 16.2 | 5.0 | 3.6 | 3.3 | 0.3 | 0.3 | 0.2 | 1.0 |
| 10-410E | 0.58 | 256.04 | 421.5 | 9,365.8 | 35,472.9 | 145.2 | 45.3 | 32.5 | 30.0 | 3.0 | 2.4 | 1.5 | 9.4 |
| 10-410F | 0.59 | 37.92 | 63.8 | 1,417.9 | 5,370.4 | 22.0 | 6.9 | 4.9 | 4.5 | 0.5 | 0.4 | 0.2 | 1.4 |
| 10-420A | 0.27 | 23.05 | 18.0 | 399.3 | 1,512.3 | 6.2 | 1.9 | 1.4 | 1.3 | 0.1 | 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 |
| 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 |
| 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 |
| 10-420E | 0.59 | 127.89 | 214.7 | 4,770.8 | 18,069.4 | 73.9 | 23.1 | 16.6 | 15.3 | 1.6 | 1.2 | 0.8 | 4.8 |
| 10-430A | 0.00 | 8.14 | 0.1 | 1.3 | 4.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-430B | 0.53 | 54.72 | 83.6 | 1,858.7 | 7,039.8 | 28.8 | 9.0 | 6.5 | 6.0 | 0.6 | 0.5 | 0.3 | 1.9 |
| 10-430C | 0.48 | 44.83 | 61.6 | 1,369.0 | 5,185.2 | 21.2 | 6.6 | 4.8 | 4.4 | 0.4 | 0.4 | 0.2 | 1.4 |
| 10-430D | 0.49 | 85.79 | 120.6 | 2,681.0 | 10,154.3 | 41.6 | 13.0 | 9.3 | 8.6 | 0.9 | 0.7 | 0.4 | 2.7 |
| 10-430E | 0.56 | 86.66 | 138.2 | 3,071.8 | 11,634.3 | 47.6 | 14.8 | 10.7 | 9.8 | 1.0 | 0.8 | 0.5 | 3.1 |
| 10-430F | 0.10 | 377.97 | 108.1 | 2,402.7 | 9,100.3 | 37.2 | 11.6 | 8.3 | 7.7 | 0.8 | 0.6 | 0.4 | 2.4 |
| 10-430G | 0.50 | 125.89 | 178.5 | 3,966.0 | 15,021.2 | 61.5 | 19.2 | 13.8 | 12.7 | 1.3 | 1.0 | 0.6 | 4.0 |
| 10-430H | 0.49 | 33.18 | 46.6 | 1,036.4 | 3,925.5 | 16.1 | 5.0 | 3.6 | 3.3 | 0.3 | 0.3 | 0.2 | 1.0 |
| 10-430I | 0.59 | 32.61 | 54.9 | 1,220.2 | 4,621.5 | 18.9 | 5.9 | 4.2 | 3.9 | 0.4 | 0.3 | 0.2 | 1.2 |
| 10-430J | 0.43 | 532.36 | 660.8 | 14,685.5 | 55,621.4 | 227.6 | 71.0 | 51.0 | 47.1 | 4.8 | 3.8 | 2.4 | 14.7 |
| 10-430K | 0.48 | 337.06 | 460.5 | 10,234.4 | 38,762.8 | 158.6 | 49.5 | 35.5 | 32.8 | 3.3 | 2.6 | 1.7 | 10.2 |
| 10-430L | 0.45 | 84.4 | 108.8 | 2,418.4 | 9,159.7 | 37.5 | 11.7 | 8.4 | 7.7 | 0.8 | 0.6 | 0.4 | 2.4 |
| 10-430M | 0.54 | 75.94 | 117.8 | 2,618.3 | 9,916.8 | 40.6 | 12.7 | 9.1 | 8.4 | 0.9 | 0.7 | 0.4 | 2.6 |
| 10-430N | 0.44 | 26.43 | 33.6 | 745.8 | 2,824.8 | 11.6 | 3.6 | 2.6 | 2.4 | 0.2 | 0.2 | 0.1 | 0.7 |
| 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 |
| 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 |
| 10-430Q | 0.10 | 8.03 | 2.3 | 51.0 | 193.3 | 0.8 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-430R | 0.47 | 150.32 | 201.0 | 4,467.0 | 16,918.7 | 69.2 | 21.6 | 15.5 | 14.3 | 1.5 | 1.1 | 0.7 | 4.5 |
| 10-430S | 0.10 | 5.15 | 1.5 | 32.7 | 124.0 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-430T | 0.46 | 262.47 | 343.2 | 7,627.0 | 28,887.2 | 118.2 | 36.9 | 26.5 | 24.4 | 2.5 | 2.0 | 1.2 | 7.6 |

# 2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

**2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/06 - 03/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Winter/snowmelt Median Event Mean Concentration | | | 10.8 | 240 | 909 | 3.72 | 1.160 | 0.833 | 0.769 | 0.078 | 0.061 | 0.039 | 0.240 |
| Precipitation (meters) | 0.077 | | | | | | | | | | | | |
| 10-430U | 0.47 | 431.37 | 579.8 | 12,884.2 | 48,798.9 | 199.7 | 62.3 | 44.7 | 41.3 | 4.2 | 3.3 | 2.1 | 12.9 |
| 10-430V | 0.46 | 329.11 | 437.6 | 9,724.9 | 36,832.9 | 150.7 | 47.0 | 33.8 | 31.2 | 3.2 | 2.5 | 1.6 | 9.7 |
| 10-440A | 0.46 | 23.18 | 30.4 | 675.1 | 2,556.8 | 10.5 | 3.3 | 2.3 | 2.2 | 0.2 | 0.2 | 0.1 | 0.7 |
| 10-440B | 0.49 | 34.23 | 48.3 | 1,072.3 | 4,061.4 | 16.6 | 5.2 | 3.7 | 3.4 | 0.3 | 0.3 | 0.2 | 1.1 |
| 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 |
| 10-440E | 0.51 | 831.25 | 1,222.8 | 27,173.0 | 102,917.6 | 421.2 | 131.3 | 94.3 | 87.1 | 8.8 | 7.0 | 4.4 | 27.2 |
| 10-440F | 0.46 | 538.85 | 709.4 | 15,764.5 | 59,707.9 | 244.3 | 76.2 | 54.7 | 50.5 | 5.1 | 4.0 | 2.6 | 15.8 |
| 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 |
| 10-450B | 0.52 | 3.41 | 5.0 | 112.0 | 424.2 | 1.7 | 0.5 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-450C | 0.59 | 55.64 | 94.5 | 2,100.4 | 7,955.3 | 32.6 | 10.2 | 7.3 | 6.7 | 0.7 | 0.5 | 0.3 | 2.1 |
| 10-450D | 0.45 | 4.62 | 5.9 | 132.2 | 500.6 | 2.0 | 0.6 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-450E | 0.44 | 3.2 | 4.0 | 89.9 | 340.5 | 1.4 | 0.4 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-450F | 0.46 | 158.55 | 208.4 | 4,630.5 | 17,538.0 | 71.8 | 22.4 | 16.1 | 14.8 | 1.5 | 1.2 | 0.8 | 4.6 |
| 10-450G/H | 0.48 | 75.02 | 103.1 | 2,291.4 | 8,678.8 | 35.5 | 11.1 | 8.0 | 7.3 | 0.7 | 0.6 | 0.4 | 2.3 |
| 10-450I | 0.49 | 243.64 | 342.4 | 7,608.0 | 28,815.4 | 117.9 | 36.8 | 26.4 | 24.4 | 2.5 | 1.9 | 1.2 | 7.6 |
| 10-450J | 0.49 | 17.16 | 23.8 | 529.6 | 2,005.8 | 8.2 | 2.6 | 1.8 | 1.7 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-450K | 0.58 | 37.01 | 61.3 | 1,362.8 | 5,161.7 | 21.1 | 6.6 | 4.7 | 4.4 | 0.4 | 0.3 | 0.2 | 1.4 |
| 10-450L | 0.51 | 213.41 | 308.3 | 6,851.8 | 25,951.0 | 106.2 | 33.1 | 23.8 | 22.0 | 2.2 | 1.8 | 1.1 | 6.9 |
| 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 |
| 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 |
| 10-460B | 0.52 | 7.29 | 10.8 | 239.5 | 907.1 | 3.7 | 1.2 | 0.8 | 0.8 | 0.1 | 0.1 | 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 |
| 10-460E | 0.49 | 231.41 | 326.9 | 7,264.7 | 27,514.9 | 112.6 | 35.1 | 25.2 | 23.3 | 2.4 | 1.9 | 1.2 | 7.3 |
| 10-460F | 0.49 | 14.75 | 20.9 | 463.9 | 1,756.9 | 7.2 | 2.2 | 1.6 | 1.5 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-460G | 0.51 | 79.66 | 116.4 | 2,586.6 | 9,796.9 | 40.1 | 12.5 | 9.0 | 8.3 | 0.8 | 0.7 | 0.4 | 2.6 |
| 10-460H | 0.48 | 12.35 | 16.9 | 376.4 | 1,425.5 | 5.8 | 1.8 | 1.3 | 1.2 | 0.1 | 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 |
| 10-460J | 0.46 | 5.36 | 7.1 | 158.0 | 598.4 | 2.4 | 0.8 | 0.5 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 10-460K | 0.36 | 5.48 | 5.6 | 125.3 | 474.6 | 1.9 | 0.6 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-460L | 0.46 | 3.5 | 4.6 | 103.1 | 390.5 | 1.6 | 0.5 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-460M | 0.48 | 9.55 | 13.1 | 290.5 | 1,100.4 | 4.5 | 1.4 | 1.0 | 0.9 | 0.1 | 0.1 | 0.0 | 0.3 |
| 10-460N | 0.45 | 3.85 | 5.0 | 110.1 | 417.1 | 1.7 | 0.5 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-460O | 0.45 | 4.15 | 5.4 | 119.7 | 453.3 | 1.9 | 0.6 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-460P | 0.45 | 4.34 | 5.6 | 124.1 | 470.2 | 1.9 | 0.6 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-460Q | 0.56 | 19.73 | 31.8 | 707.6 | 2,680.0 | 11.0 | 3.4 | 2.5 | 2.3 | 0.2 | 0.2 | 0.1 | 0.7 |
| 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 |
| 10-460S | 0.56 | 233.54 | 377.0 | 8,377.5 | 31,729.7 | 129.9 | 40.5 | 29.1 | 26.8 | 2.7 | 2.1 | 1.4 | 8.4 |
| 10-465 | 0.10 | 8.56 | 2.4 | 54.4 | 206.1 | 0.8 | 0.3 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-470 | 0.38 | 25.6 | 27.9 | 621.1 | 2,352.3 | 9.6 | 3.0 | 2.2 | 2.0 | 0.2 | 0.2 | 0.1 | 0.6 |
| 10-480 | 0.58 | 39.66 | 65.8 | 1,462.7 | 5,540.0 | 22.7 | 7.1 | 5.1 | 4.7 | 0.5 | 0.4 | 0.2 | 1.5 |
| 10-485 | 0.00 | 7.27 | 0.1 | 1.2 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-490 | 0.43 | 150.96 | 187.2 | 4,160.2 | 15,756.8 | 64.5 | 20.1 | 14.4 | 13.3 | 1.4 | 1.1 | 0.7 | 4.2 |
| 10-500A | 0.26 | 26.21 | 19.7 | 437.3 | 1,656.2 | 6.8 | 2.1 | 1.5 | 1.4 | 0.1 | 0.1 | 0.1 | 0.4 |
| 10-500B | 0.46 | 8.48 | 11.2 | 248.1 | 939.8 | 3.8 | 1.2 | 0.9 | 0.8 | 0.1 | 0.1 | 0.0 | 0.2 |
| 10-500C | 0.44 | 111.36 | 138.7 | 3,081.9 | 11,672.6 | 47.8 | 14.9 | 10.7 | 9.9 | 1.0 | 0.8 | 0.5 | 3.1 |
| 10-500D | 0.24 | 3.83 | 2.6 | 58.0 | 219.5 | 0.9 | 0.3 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-500E | 0.53 | 23.34 | 35.5 | 790.0 | 2,992.0 | 12.2 | 3.8 | 2.7 | 2.5 | 0.3 | 0.2 | 0.1 | 0.8 |
| 10-500F | 0.49 | 12.04 | 17.0 | 377.9 | 1,431.4 | 5.9 | 1.8 | 1.3 | 1.2 | 0.1 | 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 |
| 10-505 | 0.10 | 7.85 | 2.2 | 49.9 | 189.0 | 0.8 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-510 | 0.51 | 62.36 | 90.7 | 2,016.3 | 7,636.8 | 31.3 | 9.7 | 7.0 | 6.5 | 0.7 | 0.5 | 0.3 | 2.0 |
| 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 |
| 10-530 | 0.45 | 116.15 | 149.8 | 3,328.3 | 12,606.0 | 51.6 | 16.1 | 11.6 | 10.7 | 1.1 | 0.9 | 0.5 | 3.3 |
| 10-540 | 0.12 | 53.9 | 18.3 | 405.8 | 1,536.8 | 6.3 | 2.0 | 1.4 | 1.3 | 0.1 | 0.1 | 0.1 | 0.4 |
| 10-550 | 0.46 | 25.83 | 34.0 | 755.2 | 2,860.2 | 11.7 | 3.6 | 2.6 | 2.4 | 0.2 | 0.2 | 0.1 | 0.8 |
| 10-560A/B | 0.44 | 600.63 | 751.7 | 16,704.0 | 63,266.3 | 258.9 | 80.7 | 58.0 | 53.5 | 5.4 | 4.3 | 2.7 | 16.7 |
| 10-570A | 0.54 | 14.64 | 22.8 | 506.1 | 1,916.7 | 7.8 | 2.4 | 1.8 | 1.6 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-570B | 0.44 | 228.18 | 284.9 | 6,331.7 | 23,981.3 | 98.1 | 30.6 | 22.0 | 20.3 | 2.1 | 1.6 | 1.0 | 6.3 |
| 10-580 | 0.45 | 73.39 | 94.2 | 2,093.9 | 7,930.8 | 32.5 | 10.1 | 7.3 | 6.7 | 0.7 | 0.5 | 0.3 | 2.1 |
| 10-600 | 0.48 | 89.24 | 123.5 | 2,743.4 | 10,390.8 | 42.5 | 13.3 | 9.5 | 8.8 | 0.9 | 0.7 | 0.4 | 2.7 |
| 10-610 | 0.46 | 25.6 | 33.6 | 745.9 | 2,825.1 | 11.6 | 3.6 | 2.6 | 2.4 | 0.2 | 0.2 | 0.1 | 0.7 |
| 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 |
| 10-630A | 0.10 | 6.24 | 1.8 | 39.7 | 150.2 | 0.6 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-630B | 0.45 | 4.68 | 6.0 | 133.9 | 507.1 | 2.1 | 0.6 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-630C | 0.48 | 96.03 | 132.7 | 2,949.3 | 11,170.5 | 45.7 | 14.3 | 10.2 | 9.5 | 1.0 | 0.8 | 0.5 | 2.9 |
| 10-630D | 0.45 | 6.37 | 8.2 | 182.2 | 690.2 | 2.8 | 0.9 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 10-630E | 0.45 | 8.52 | 11.0 | 243.7 | 923.1 | 3.8 | 1.2 | 0.8 | 0.8 | 0.1 | 0.1 | 0.0 | 0.2 |
| 10-630F | 0.54 | 17.56 | 27.1 | 603.1 | 2,284.1 | 9.3 | 2.9 | 2.1 | 1.9 | 0.2 | 0.2 | 0.1 | 0.6 |
| 10-630G | 0.45 | 5.9 | 7.6 | 168.8 | 639.2 | 2.6 | 0.8 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 10-630H | 0.30 | 25.63 | 22.2 | 493.5 | 1,869.0 | 7.6 | 2.4 | 1.7 | 1.6 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-630I | 0.47 | 12.48 | 16.6 | 368.9 | 1,397.3 | 5.7 | 1.8 | 1.3 | 1.2 | 0.1 | 0.1 | 0.1 | 0.4 |
| 10-630J | 0.55 | 14.69 | 23.3 | 517.0 | 1,958.2 | 8.0 | 2.5 | 1.8 | 1.7 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-630K | 0.47 | 95.29 | 129.0 | 2,866.9 | 10,858.5 | 44.4 | 13.9 | 10.0 | 9.2 | 0.9 | 0.7 | 0.5 | 2.9 |
| 10-630L | 0.52 | 100.42 | 149.7 | 3,325.8 | 12,596.6 | 51.6 | 16.1 | 11.5 | 10.7 | 1.1 | 0.9 | 0.5 | 3.3 |
| 10-630M | 0.50 | 11.71 | 16.6 | 369.6 | 1,399.9 | 5.7 | 1.8 | 1.3 | 1.2 | 0.1 | 0.1 | 0.1 | 0.4 |
| 10-630N | 0.45 | 8.45 | 10.9 | 241.7 | 915.5 | 3.7 | 1.2 | 0.8 | 0.8 | 0.1 | 0.1 | 0.0 | 0.2 |
| 10-630O | 0.36 | 5.77 | 6.0 | 133.5 | 505.8 | 2.1 | 0.6 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |

# 2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

**2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/06 - 03/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Winter/snowmelt Median Event Mean Concentration | | | 10.8 | 240 | 909 | 3.72 | 1.160 | 0.833 | 0.769 | 0.078 | 0.061 | 0.039 | 0.240 |
| Precipitation (meters) | 0.077 | | | | | | | | | | | | |
| 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 |
| 10-630R | 0.33 | 83.89 | 80.1 | 1,781.1 | 6,745.8 | 27.6 | 8.6 | 6.2 | 5.7 | 0.6 | 0.5 | 0.3 | 1.8 |
| 10-630S | 0.22 | 37.02 | 23.0 | 511.6 | 1,937.5 | 7.9 | 2.5 | 1.8 | 1.6 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-630T | 0.56 | 7.72 | 12.4 | 276.0 | 1,045.5 | 4.3 | 1.3 | 1.0 | 0.9 | 0.1 | 0.1 | 0.0 | 0.3 |
| 10-630U | 0.52 | 115.42 | 172.7 | 3,838.0 | 14,536.3 | 59.5 | 18.6 | 13.3 | 12.3 | 1.2 | 1.0 | 0.6 | 3.8 |
| 10-630V | 0.11 | 33.85 | 10.2 | 227.2 | 860.6 | 3.5 | 1.1 | 0.8 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 10-630W | 0.47 | 23.68 | 32.1 | 713.1 | 2,700.7 | 11.1 | 3.4 | 2.5 | 2.3 | 0.2 | 0.2 | 0.1 | 0.7 |
| 10-630X | 0.44 | 14.78 | 18.7 | 415.6 | 1,574.3 | 6.4 | 2.0 | 1.4 | 1.3 | 0.1 | 0.1 | 0.1 | 0.4 |
| 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 |
| 10-630Z | 0.47 | 45.66 | 61.5 | 1,366.5 | 5,175.6 | 21.2 | 6.6 | 4.7 | 4.4 | 0.4 | 0.3 | 0.2 | 1.4 |
| 10-640 | 0.46 | 258.18 | 337.8 | 7,506.2 | 28,429.6 | 116.3 | 36.3 | 26.1 | 24.1 | 2.4 | 1.9 | 1.2 | 7.5 |
| 10-650 | 0.56 | 19.53 | 31.1 | 691.5 | 2,619.2 | 10.7 | 3.3 | 2.4 | 2.2 | 0.2 | 0.2 | 0.1 | 0.7 |
| 10-660 | 0.46 | 306.37 | 406.0 | 9,022.1 | 34,171.4 | 139.8 | 43.6 | 31.3 | 28.9 | 2.9 | 2.3 | 1.5 | 9.0 |
| 10-670 | 0.45 | 137.88 | 177.2 | 3,938.4 | 14,916.7 | 61.0 | 19.0 | 13.7 | 12.6 | 1.3 | 1.0 | 0.6 | 3.9 |
| 10-680 | 0.46 | 707.95 | 928.6 | 20,634.8 | 78,154.1 | 319.8 | 99.7 | 71.6 | 66.1 | 6.7 | 5.3 | 3.4 | 20.6 |
| 10-690 | 0.50 | 70.63 | 101.1 | 2,246.2 | 8,507.4 | 34.8 | 10.9 | 7.8 | 7.2 | 0.7 | 0.6 | 0.4 | 2.2 |
| 10-700 | 0.46 | 222.07 | 295.0 | 6,555.2 | 24,827.7 | 101.6 | 31.7 | 22.8 | 21.0 | 2.1 | 1.7 | 1.1 | 6.6 |
| 10-710 | 0.33 | 29.95 | 28.5 | 634.2 | 2,402.1 | 9.8 | 3.1 | 2.2 | 2.0 | 0.2 | 0.2 | 0.1 | 0.6 |
| 10-720A | 0.44 | 15.77 | 20.0 | 444.5 | 1,683.6 | 6.9 | 2.1 | 1.5 | 1.4 | 0.1 | 0.1 | 0.1 | 0.4 |
| 10-720B | 0.48 | 422.18 | 581.8 | 12,929.7 | 48,971.4 | 200.4 | 62.5 | 44.9 | 41.4 | 4.2 | 3.3 | 2.1 | 12.9 |
| 10-720C | 0.43 | 26.35 | 32.4 | 719.3 | 2,724.2 | 11.1 | 3.5 | 2.5 | 2.3 | 0.2 | 0.2 | 0.1 | 0.7 |
| 10-720D | 0.46 | 22.95 | 29.9 | 664.2 | 2,515.6 | 10.3 | 3.2 | 2.3 | 2.1 | 0.2 | 0.2 | 0.1 | 0.7 |
| 10-720E | 0.46 | 18.39 | 24.0 | 532.8 | 2,017.8 | 8.3 | 2.6 | 1.8 | 1.7 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-720F | 0.48 | 317.75 | 436.1 | 9,691.7 | 36,707.2 | 150.2 | 46.8 | 33.6 | 31.1 | 3.1 | 2.5 | 1.6 | 9.7 |
| 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 |
| 10-720H | 0.45 | 4.55 | 5.9 | 130.2 | 493.0 | 2.0 | 0.6 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-720I | 0.45 | 87.27 | 111.3 | 2,474.0 | 9,370.3 | 38.3 | 12.0 | 8.6 | 7.9 | 0.8 | 0.6 | 0.4 | 2.5 |
| 10-720J | 0.36 | 3.71 | 3.8 | 84.3 | 319.1 | 1.3 | 0.4 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-720K | 0.55 | 32.76 | 51.5 | 1,143.5 | 4,331.0 | 17.7 | 5.5 | 4.0 | 3.7 | 0.4 | 0.3 | 0.2 | 1.1 |
| 10-720L | 0.45 | 4.57 | 5.9 | 130.7 | 495.1 | 2.0 | 0.6 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 20-010 | 0.42 | 93.99 | 112.9 | 2,508.3 | 9,500.0 | 38.9 | 12.1 | 8.7 | 8.0 | 0.8 | 0.6 | 0.4 | 2.5 |
| 20-020 | 0.44 | 15.09 | 18.9 | 420.8 | 1,593.7 | 6.5 | 2.0 | 1.5 | 1.3 | 0.1 | 0.1 | 0.1 | 0.4 |
| 20-030 | 0.45 | 7.95 | 10.2 | 227.4 | 861.3 | 3.5 | 1.1 | 0.8 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 20-040 | 0.37 | 6.79 | 7.2 | 160.9 | 609.5 | 2.5 | 0.8 | 0.6 | 0.5 | 0.1 | 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 |
| 20-060 | 0.45 | 5.91 | 7.6 | 169.1 | 640.3 | 2.6 | 0.8 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 20-070 | 0.44 | 39.07 | 49.6 | 1,101.2 | 4,170.8 | 17.1 | 5.3 | 3.8 | 3.5 | 0.4 | 0.3 | 0.2 | 1.1 |
| 20-080 | 0.45 | 33.72 | 43.7 | 971.9 | 3,680.9 | 15.1 | 4.7 | 3.4 | 3.1 | 0.3 | 0.2 | 0.2 | 1.0 |
| 20-090 | 0.55 | 9.95 | 15.7 | 349.6 | 1,324.2 | 5.4 | 1.7 | 1.2 | 1.1 | 0.1 | 0.1 | 0.1 | 0.3 |
| 20-100 | 0.10 | 0.99 | 0.3 | 6.3 | 23.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-110 | 0.24 | 216.04 | 148.3 | 3,294.9 | 12,479.5 | 51.1 | 15.9 | 11.4 | 10.6 | 1.1 | 0.8 | 0.5 | 3.3 |
| 20-120 | 0.47 | 10.22 | 13.7 | 303.7 | 1,150.2 | 4.7 | 1.5 | 1.1 | 1.0 | 0.1 | 0.1 | 0.0 | 0.3 |
| 20-130 | 0.45 | 16.12 | 20.8 | 461.1 | 1,746.5 | 7.1 | 2.2 | 1.6 | 1.5 | 0.1 | 0.1 | 0.1 | 0.5 |
| 20-140 | 0.44 | 2.97 | 3.7 | 83.3 | 315.6 | 1.3 | 0.4 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 20-150 | 0.45 | 14.48 | 18.6 | 414.2 | 1,568.8 | 6.4 | 2.0 | 1.4 | 1.3 | 0.1 | 0.1 | 0.1 | 0.4 |
| 20-160 | 0.54 | 3.21 | 5.0 | 110.3 | 417.6 | 1.7 | 0.5 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 20-170 | 0.37 | 4.94 | 5.3 | 117.0 | 443.1 | 1.8 | 0.6 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 20-180 | 0.51 | 5.3 | 7.7 | 170.5 | 645.8 | 2.6 | 0.8 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 20-190 | 0.45 | 1.35 | 1.7 | 38.6 | 146.3 | 0.6 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-200 | 0.45 | 13.84 | 17.8 | 395.9 | 1,499.5 | 6.1 | 1.9 | 1.4 | 1.3 | 0.1 | 0.1 | 0.1 | 0.4 |
| 20-210A | 0.44 | 92.9 | 116.7 | 2,594.1 | 9,825.2 | 40.2 | 12.5 | 9.0 | 8.3 | 0.8 | 0.7 | 0.4 | 2.6 |
| 20-210B | 0.50 | 620.78 | 896.0 | 19,910.9 | 75,412.7 | 308.6 | 96.2 | 69.1 | 63.8 | 6.5 | 5.1 | 3.3 | 19.9 |
| 20-220 | 0.46 | 26.38 | 34.8 | 773.1 | 2,928.2 | 12.0 | 3.7 | 2.7 | 2.5 | 0.3 | 0.2 | 0.1 | 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 |
| 20-240 | 0.48 | 30.06 | 41.4 | 920.7 | 3,487.0 | 14.3 | 4.4 | 3.2 | 2.9 | 0.3 | 0.2 | 0.2 | 0.9 |
| 20-250 | 0.57 | 6.28 | 10.3 | 228.2 | 864.4 | 3.5 | 1.1 | 0.8 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 20-260 | 0.60 | 3.5 | 6.0 | 133.5 | 505.6 | 2.1 | 0.6 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 20-270 | 0.48 | 42.81 | 58.4 | 1,297.3 | 4,913.6 | 20.1 | 6.3 | 4.5 | 4.2 | 0.4 | 0.3 | 0.2 | 1.3 |
| 20-280 | 0.54 | 8.98 | 13.8 | 306.8 | 1,162.0 | 4.8 | 1.5 | 1.1 | 1.0 | 0.1 | 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 |
| 21-010 | 0.45 | 49.49 | 63.5 | 1,410.2 | 5,341.1 | 21.9 | 6.8 | 4.9 | 4.5 | 0.5 | 0.4 | 0.2 | 1.4 |
| 40-010 | 0.45 | 719.17 | 921.9 | 20,486.3 | 77,592.0 | 317.5 | 99.0 | 71.1 | 65.6 | 6.7 | 5.2 | 3.4 | 20.5 |
| 40-020 | 0.45 | 15.36 | 19.8 | 439.4 | 1,664.2 | 6.8 | 2.1 | 1.5 | 1.4 | 0.1 | 0.1 | 0.1 | 0.4 |
| 40-030 | 0.42 | 51.02 | 61.0 | 1,354.9 | 5,131.5 | 21.0 | 6.5 | 4.7 | 4.3 | 0.4 | 0.3 | 0.2 | 1.4 |
| 40-040 | 0.43 | 65.39 | 81.2 | 1,804.8 | 6,835.8 | 28.0 | 8.7 | 6.3 | 5.8 | 0.6 | 0.5 | 0.3 | 1.8 |
| 40-050 | 0.45 | 10.28 | 13.2 | 294.1 | 1,113.8 | 4.6 | 1.4 | 1.0 | 0.9 | 0.1 | 0.1 | 0.0 | 0.3 |
| 40-060 | 0.45 | 3.2 | 4.1 | 91.5 | 346.7 | 1.4 | 0.4 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 40-070 | 0.38 | 7.98 | 8.6 | 191.9 | 726.9 | 3.0 | 0.9 | 0.7 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 40-080 | 0.41 | 60.51 | 70.7 | 1,570.9 | 5,949.7 | 24.3 | 7.6 | 5.5 | 5.0 | 0.5 | 0.4 | 0.3 | 1.6 |
| 40-090 | 0.46 | 20.65 | 27.5 | 610.2 | 2,311.3 | 9.5 | 2.9 | 2.1 | 2.0 | 0.2 | 0.2 | 0.1 | 0.6 |
| 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 |
| 40-110 | 0.44 | 2.61 | 3.3 | 73.6 | 278.9 | 1.1 | 0.4 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 40-120 | 0.44 | 65.87 | 82.6 | 1,835.2 | 6,950.8 | 28.4 | 8.9 | 6.4 | 5.9 | 0.6 | 0.5 | 0.3 | 1.8 |
| 40-130 | 0.45 | 35.01 | 45.3 | 1,005.7 | 3,808.9 | 15.6 | 4.9 | 3.5 | 3.2 | 0.3 | 0.3 | 0.2 | 1.0 |
| 40-140 | 0.35 | 125.46 | 124.8 | 2,773.3 | 10,503.8 | 43.0 | 13.4 | 9.6 | 8.9 | 0.9 | 0.7 | 0.5 | 2.8 |
| 40-150 | 0.47 | 24.31 | 32.9 | 732.1 | 2,772.8 | 11.3 | 3.5 | 2.5 | 2.3 | 0.2 | 0.2 | 0.1 | 0.7 |
| 40-160 | 0.49 | 30.99 | 43.8 | 973.9 | 3,688.6 | 15.1 | 4.7 | 3.4 | 3.1 | 0.3 | 0.2 | 0.2 | 1.0 |

# 2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

**2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/06 - 03/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Winter/snowmelt Median Event Mean Concentration | | | 10.8 | 240 | 909 | 3.72 | 1.160 | 0.833 | 0.769 | 0.078 | 0.061 | 0.039 | 0.240 |
| Precipitation (meters) | 0.077 | | | | | | | | | | | | |
| 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 |
| 40-180 | 0.54 | 16.8 | 25.9 | 574.9 | 2,177.5 | 8.9 | 2.8 | 2.0 | 1.8 | 0.2 | 0.1 | 0.1 | 0.6 |
| 40-190 | 0.53 | 65.53 | 99.1 | 2,202.7 | 8,342.7 | 34.1 | 10.6 | 7.6 | 7.1 | 0.7 | 0.6 | 0.4 | 2.2 |
| 40-200 | 0.46 | 24.75 | 32.7 | 727.4 | 2,755.0 | 11.3 | 3.5 | 2.5 | 2.3 | 0.2 | 0.2 | 0.1 | 0.7 |
| 40-210 | 0.54 | 17.26 | 26.9 | 597.8 | 2,264.2 | 9.3 | 2.9 | 2.1 | 1.9 | 0.2 | 0.2 | 0.1 | 0.6 |
| 40-220 | 0.47 | 100.58 | 134.5 | 2,989.0 | 11,320.8 | 46.3 | 14.4 | 10.4 | 9.6 | 1.0 | 0.8 | 0.5 | 3.0 |
| 40-230 | 0.44 | 13.78 | 17.5 | 389.7 | 1,475.8 | 6.0 | 1.9 | 1.4 | 1.2 | 0.1 | 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 |
| 40-250 | 0.60 | 1.15 | 2.0 | 43.9 | 166.1 | 0.7 | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40-260 | 0.45 | 3.49 | 4.5 | 99.8 | 378.1 | 1.5 | 0.5 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 40-270 | 0.45 | 9.59 | 12.3 | 274.3 | 1,039.0 | 4.3 | 1.3 | 1.0 | 0.9 | 0.1 | 0.1 | 0.0 | 0.3 |
| 40-280 | 0.53 | 12.76 | 19.2 | 426.6 | 1,615.6 | 6.6 | 2.1 | 1.5 | 1.4 | 0.1 | 0.1 | 0.1 | 0.4 |
| 40-290 | 0.51 | 13.73 | 20.1 | 446.9 | 1,692.6 | 6.9 | 2.2 | 1.6 | 1.4 | 0.1 | 0.1 | 0.1 | 0.4 |
| 40-300 | 0.52 | 10.38 | 15.5 | 343.8 | 1,302.1 | 5.3 | 1.7 | 1.2 | 1.1 | 0.1 | 0.1 | 0.1 | 0.3 |
| 40-310 | 0.45 | 97.86 | 126.7 | 2,815.8 | 10,665.0 | 43.6 | 13.6 | 9.8 | 9.0 | 0.9 | 0.7 | 0.5 | 2.8 |
| 40-320 | 0.60 | 9.43 | 16.2 | 359.7 | 1,362.3 | 5.6 | 1.7 | 1.2 | 1.2 | 0.1 | 0.1 | 0.1 | 0.4 |
| 40-330 | 0.59 | 15.34 | 26.0 | 578.0 | 2,189.0 | 9.0 | 2.8 | 2.0 | 1.9 | 0.2 | 0.1 | 0.1 | 0.6 |
| 40-340 | 0.53 | 35.27 | 53.8 | 1,194.8 | 4,525.5 | 18.5 | 5.8 | 4.1 | 3.8 | 0.4 | 0.3 | 0.2 | 1.2 |
| 40-350 | 0.60 | 8.99 | 15.4 | 342.9 | 1,298.7 | 5.3 | 1.7 | 1.2 | 1.1 | 0.1 | 0.1 | 0.1 | 0.3 |
| 40-360 | 0.60 | 8.09 | 13.9 | 308.6 | 1,168.7 | 4.8 | 1.5 | 1.1 | 1.0 | 0.1 | 0.1 | 0.1 | 0.3 |
| 40-370 | 0.58 | 12.41 | 20.5 | 456.3 | 1,728.4 | 7.1 | 2.2 | 1.6 | 1.5 | 0.1 | 0.1 | 0.1 | 0.5 |
| 40-380 | 0.39 | 24.92 | 28.0 | 623.2 | 2,360.5 | 9.7 | 3.0 | 2.2 | 2.0 | 0.2 | 0.2 | 0.1 | 0.6 |
| 40-390 | 0.58 | 5.72 | 9.5 | 210.9 | 798.7 | 3.3 | 1.0 | 0.7 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 40-400 | 0.10 | 1.07 | 0.3 | 6.8 | 25.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 41-010 | 0.38 | 94.73 | 102.3 | 2,272.9 | 8,608.7 | 35.2 | 11.0 | 7.9 | 7.3 | 0.7 | 0.6 | 0.4 | 2.3 |
| 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 |
| 41-030 | 0.50 | 60.47 | 86.8 | 1,929.6 | 7,308.4 | 29.9 | 9.3 | 6.7 | 6.2 | 0.6 | 0.5 | 0.3 | 1.9 |
| 41-040 | 0.57 | 35.59 | 58.3 | 1,296.4 | 4,910.0 | 20.1 | 6.3 | 4.5 | 4.2 | 0.4 | 0.3 | 0.2 | 1.3 |
| 41-050 | 0.60 | 10.48 | 18.0 | 399.7 | 1,513.9 | 6.2 | 1.9 | 1.4 | 1.3 | 0.1 | 0.1 | 0.1 | 0.4 |
| 41-060 | 0.60 | 2.95 | 5.1 | 112.5 | 426.2 | 1.7 | 0.5 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 51-010 | 0.45 | 29.63 | 38.3 | 850.1 | 3,219.8 | 13.2 | 4.1 | 3.0 | 2.7 | 0.3 | 0.2 | 0.1 | 0.9 |
| 51-020 | 0.45 | 4.55 | 5.9 | 130.2 | 493.0 | 2.0 | 0.6 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 52-010 | 0.28 | 45.29 | 35.8 | 795.6 | 3,013.4 | 12.3 | 3.8 | 2.8 | 2.5 | 0.3 | 0.2 | 0.1 | 0.8 |
| 52-020 | 0.45 | 6.09 | 7.8 | 174.2 | 659.8 | 2.7 | 0.8 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 52-030 | 0.45 | 7.18 | 9.2 | 205.4 | 777.9 | 3.2 | 1.0 | 0.7 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 52-040 | 0.41 | 4.54 | 5.4 | 119.3 | 451.8 | 1.8 | 0.6 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 52-050 | 0.44 | 15.3 | 19.0 | 423.1 | 1,602.5 | 6.6 | 2.0 | 1.5 | 1.4 | 0.1 | 0.1 | 0.1 | 0.4 |
| 52-060 | 0.10 | 3.22 | 0.9 | 20.5 | 77.5 | 0.3 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52-070 | 0.42 | 86.94 | 105.2 | 2,338.8 | 8,858.1 | 36.3 | 11.3 | 8.1 | 7.5 | 0.8 | 0.6 | 0.4 | 2.3 |
| 52-080 | 0.24 | 8.08 | 5.6 | 124.3 | 470.8 | 1.9 | 0.6 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 52-090 | 0.45 | 4.89 | 6.3 | 139.9 | 529.8 | 2.2 | 0.7 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 52-100A/B | 0.27 | 11.89 | 9.1 | 201.5 | 763.3 | 3.1 | 1.0 | 0.7 | 0.6 | 0.1 | 0.1 | 0.0 | 0.2 |
| 52-110 | 0.45 | 8.84 | 11.3 | 250.8 | 950.1 | 3.9 | 1.2 | 0.9 | 0.8 | 0.1 | 0.1 | 0.0 | 0.3 |
| 52-120 | 0.45 | 14.74 | 19.0 | 421.7 | 1,597.0 | 6.5 | 2.0 | 1.5 | 1.4 | 0.1 | 0.1 | 0.1 | 0.4 |
| 52-130 | 0.31 | 7.18 | 6.5 | 143.7 | 544.1 | 2.2 | 0.7 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.1 |
| 53-010 | 0.45 | 7.03 | 9.0 | 201.1 | 761.7 | 3.1 | 1.0 | 0.7 | 0.6 | 0.1 | 0.1 | 0.0 | 0.2 |
| 53-020 | 0.28 | 12.38 | 9.8 | 217.5 | 823.8 | 3.4 | 1.1 | 0.8 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 53-030 | 0.44 | 11.37 | 14.2 | 315.8 | 1,196.0 | 4.9 | 1.5 | 1.1 | 1.0 | 0.1 | 0.1 | 0.1 | 0.3 |
| 53-040 | 0.45 | 2.78 | 3.6 | 79.5 | 301.2 | 1.2 | 0.4 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 53-050 | 0.45 | 13.66 | 17.6 | 390.8 | 1,480.0 | 6.1 | 1.9 | 1.4 | 1.3 | 0.1 | 0.1 | 0.1 | 0.4 |
| 53-060 | 0.45 | 20.37 | 26.2 | 582.7 | 2,207.0 | 9.0 | 2.8 | 2.0 | 1.9 | 0.2 | 0.1 | 0.1 | 0.6 |
| 53-070 | 0.45 | 4.89 | 6.3 | 139.9 | 529.8 | 2.2 | 0.7 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 53-080 | 0.39 | 5.81 | 6.6 | 145.6 | 551.4 | 2.3 | 0.7 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.1 |
| 53-090 | 0.46 | 59.59 | 78.3 | 1,739.4 | 6,587.8 | 27.0 | 8.4 | 6.0 | 5.6 | 0.6 | 0.4 | 0.3 | 1.7 |
| 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 |
| 53-110 | 0.38 | 4.59 | 5.1 | 112.3 | 425.4 | 1.7 | 0.5 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 53-120A/B | 0.46 | 129.79 | 169.2 | 3,759.1 | 14,237.5 | 58.3 | 18.2 | 13.0 | 12.0 | 1.2 | 1.0 | 0.6 | 3.8 |
| 53-130 | 0.45 | 5.02 | 6.5 | 143.6 | 543.9 | 2.2 | 0.7 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.1 |
| 53-140 | 0.45 | 6.36 | 8.2 | 181.9 | 689.1 | 2.8 | 0.9 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 53-150 | 0.48 | 90.4 | 125.1 | 2,780.3 | 10,530.4 | 43.1 | 13.4 | 9.6 | 8.9 | 0.9 | 0.7 | 0.5 | 2.8 |
| 53-160 | 0.47 | 252.19 | 341.1 | 7,579.2 | 28,706.1 | 117.5 | 36.6 | 26.3 | 24.3 | 2.5 | 1.9 | 1.2 | 7.6 |
| 53-170 | 0.36 | 6.39 | 6.6 | 146.6 | 555.2 | 2.3 | 0.7 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.1 |
| 53-180 | 0.10 | 8.09 | 2.3 | 51.4 | 194.8 | 0.8 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 53-190 | 0.30 | 11.41 | 9.8 | 218.0 | 825.5 | 3.4 | 1.1 | 0.8 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 54-010A/B | 0.44 | 84.93 | 105.7 | 2,349.0 | 8,896.7 | 36.4 | 11.4 | 8.2 | 7.5 | 0.8 | 0.6 | 0.4 | 2.3 |
| 54-040A/B | 0.49 | 255.14 | 361.2 | 8,027.4 | 30,403.7 | 124.4 | 38.8 | 27.9 | 25.7 | 2.6 | 2.1 | 1.3 | 8.0 |
| 54-050 | 0.17 | 9.27 | 4.6 | 102.5 | 388.1 | 1.6 | 0.5 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 54-060 | 0.44 | 32.13 | 40.4 | 897.2 | 3,398.0 | 13.9 | 4.3 | 3.1 | 2.9 | 0.3 | 0.2 | 0.1 | 0.9 |
| 54-070 | 0.36 | 60.8 | 62.4 | 1,385.9 | 5,249.1 | 21.5 | 6.7 | 4.8 | 4.4 | 0.5 | 0.4 | 0.2 | 1.4 |
| 54-080A/B/C | 0.46 | 414.26 | 541.7 | 12,037.0 | 45,590.1 | 186.6 | 58.2 | 41.8 | 38.6 | 3.9 | 3.1 | 2.0 | 12.0 |
| 54-090 | 0.10 | 3.55 | 1.0 | 22.6 | 85.5 | 0.3 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-100A/B | 0.60 | 114.24 | 194.7 | 4,326.0 | 16,384.8 | 67.1 | 20.9 | 15.0 | 13.9 | 1.4 | 1.1 | 0.7 | 4.3 |
| 54-110 | 0.45 | 24.55 | 31.6 | 702.3 | 2,659.9 | 10.9 | 3.4 | 2.4 | 2.3 | 0.2 | 0.2 | 0.1 | 0.7 |
| 54-120 | 0.46 | 62.08 | 81.1 | 1,803.3 | 6,829.9 | 28.0 | 8.7 | 6.3 | 5.8 | 0.6 | 0.5 | 0.3 | 1.8 |
| 54-130 | 0.10 | 1.07 | 0.3 | 6.8 | 25.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-140A/B | 0.41 | 113.01 | 131.9 | 2,930.5 | 11,099.4 | 45.4 | 14.2 | 10.2 | 9.4 | 1.0 | 0.7 | 0.5 | 2.9 |
| 54-150 | 0.45 | 55.34 | 70.5 | 1,566.6 | 5,933.6 | 24.3 | 7.6 | 5.4 | 5.0 | 0.5 | 0.4 | 0.3 | 1.6 |

# 2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

**2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/06 - 03/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Winter/snowmelt Median Event Mean Concentration | | | 10.8 | 240 | 909 | 3.72 | 1.160 | 0.833 | 0.769 | 0.078 | 0.061 | 0.039 | 0.240 |
| Precipitation (meters) | 0.077 | | | | | | | | | | | | |
| 54-160 | 0.60 | 2.62 | 4.5 | 99.9 | 378.5 | 1.5 | 0.5 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 54-170 | 0.59 | 8.08 | 13.7 | 305.4 | 1,156.8 | 4.7 | 1.5 | 1.1 | 1.0 | 0.1 | 0.1 | 0.1 | 0.3 |
| 54-180 | 0.60 | 2.82 | 4.8 | 107.6 | 407.4 | 1.7 | 0.5 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 54-190 | 0.10 | 2.2 | 0.6 | 14.0 | 53.0 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-200 | 0.10 | 2.13 | 0.6 | 13.5 | 51.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-210 | 0.10 | 1.14 | 0.3 | 7.2 | 27.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 55-010 | 0.60 | 14.98 | 25.7 | 571.4 | 2,164.0 | 8.9 | 2.8 | 2.0 | 1.8 | 0.2 | 0.1 | 0.1 | 0.6 |
| 55-020 | 0.60 | 189.58 | 323.3 | 7,183.8 | 27,208.7 | 111.3 | 34.7 | 24.9 | 23.0 | 2.3 | 1.8 | 1.2 | 7.2 |
| 56-010 | 0.60 | 67.62 | 116.1 | 2,579.1 | 9,768.4 | 40.0 | 12.5 | 9.0 | 8.3 | 0.8 | 0.7 | 0.4 | 2.6 |
| 57-010 | 0.53 | 26.1 | 39.8 | 885.1 | 3,352.3 | 13.7 | 4.3 | 3.1 | 2.8 | 0.3 | 0.2 | 0.1 | 0.9 |
| 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 |
| 57-030 | 0.45 | 18.22 | 23.5 | 521.2 | 1,974.0 | 8.1 | 2.5 | 1.8 | 1.7 | 0.2 | 0.1 | 0.1 | 0.5 |
| 57-040 | 0.35 | 39.88 | 39.8 | 884.6 | 3,350.6 | 13.7 | 4.3 | 3.1 | 2.8 | 0.3 | 0.2 | 0.1 | 0.9 |
| 57-050 | 0.45 | 7.9 | 10.2 | 226.0 | 855.9 | 3.5 | 1.1 | 0.8 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 57-060 | 0.46 | 26.11 | 34.5 | 767.6 | 2,907.2 | 11.9 | 3.7 | 2.7 | 2.5 | 0.2 | 0.2 | 0.1 | 0.8 |
| 57-070 | 0.45 | 81.33 | 104.9 | 2,332.1 | 8,832.7 | 36.1 | 11.3 | 8.1 | 7.5 | 0.8 | 0.6 | 0.4 | 2.3 |
| 57-080 | 0.42 | 5.54 | 6.7 | 148.9 | 563.8 | 2.3 | 0.7 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.1 |
| 57-090 | 0.47 | 77.77 | 104.4 | 2,320.1 | 8,787.5 | 36.0 | 11.2 | 8.1 | 7.4 | 0.8 | 0.6 | 0.4 | 2.3 |
| 57-100A/B | 0.47 | 313.43 | 423.6 | 9,412.5 | 35,649.7 | 145.9 | 45.5 | 32.7 | 30.2 | 3.1 | 2.4 | 1.5 | 9.4 |
| 57-110 | 0.54 | 21.6 | 33.4 | 742.6 | 2,812.4 | 11.5 | 3.6 | 2.6 | 2.4 | 0.2 | 0.2 | 0.1 | 0.7 |
| 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 |
| 57-130 | 0.10 | 1.16 | 0.3 | 7.4 | 27.9 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57-140 | 0.10 | 1.55 | 0.4 | 9.9 | 37.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57-150 | 0.43 | 35.68 | 44.1 | 978.9 | 3,707.7 | 15.2 | 4.7 | 3.4 | 3.1 | 0.3 | 0.3 | 0.2 | 1.0 |
| 57-160 | 0.10 | 1.89 | 0.5 | 12.0 | 45.5 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 61-010 | 0.55 | 2.86 | 4.5 | 100.3 | 379.9 | 1.6 | 0.5 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 62-010 | 0.45 | 27.84 | 36.0 | 800.1 | 3,030.3 | 12.4 | 3.9 | 2.8 | 2.6 | 0.3 | 0.2 | 0.1 | 0.8 |
| 63-010 | 0.45 | 388.79 | 502.8 | 11,174.3 | 42,322.8 | 173.2 | 54.0 | 38.8 | 35.8 | 3.6 | 2.9 | 1.8 | 11.2 |
| 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 |
| 64-100 | 0.45 | 24.92 | 32.0 | 712.2 | 2,697.4 | 11.0 | 3.4 | 2.5 | 2.3 | 0.2 | 0.2 | 0.1 | 0.7 |
| 64-110 | 0.45 | 6.01 | 7.7 | 171.9 | 651.2 | 2.7 | 0.8 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 64-120 | 0.45 | 16.04 | 20.6 | 458.8 | 1,737.9 | 7.1 | 2.2 | 1.6 | 1.5 | 0.1 | 0.1 | 0.1 | 0.5 |
| 64-130 | 0.45 | 2.44 | 3.1 | 69.8 | 264.4 | 1.1 | 0.3 | 0.2 | 0.2 | 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 |
| 65-020 | 0.53 | 38.46 | 58.2 | 1,293.7 | 4,900.0 | 20.1 | 6.3 | 4.5 | 4.1 | 0.4 | 0.3 | 0.2 | 1.3 |
| 70-010 | 0.46 | 6.23 | 8.2 | 181.6 | 687.9 | 2.8 | 0.9 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-015 | 0.45 | 11.69 | 15.0 | 334.4 | 1,266.6 | 5.2 | 1.6 | 1.2 | 1.1 | 0.1 | 0.1 | 0.1 | 0.3 |
| 70-020 | 0.45 | 37.55 | 48.3 | 1,074.2 | 4,068.4 | 16.6 | 5.2 | 3.7 | 3.4 | 0.3 | 0.3 | 0.2 | 1.1 |
| 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 |
| 70-030 | 0.45 | 13.48 | 17.3 | 385.3 | 1,459.4 | 6.0 | 1.9 | 1.3 | 1.2 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-035 | 0.45 | 4.53 | 5.8 | 129.6 | 490.8 | 2.0 | 0.6 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-040 | 0.45 | 2.42 | 3.1 | 69.2 | 262.2 | 1.1 | 0.3 | 0.2 | 0.2 | 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 |
| 70-050 | 0.45 | 17.41 | 22.4 | 498.0 | 1,886.3 | 7.7 | 2.4 | 1.7 | 1.6 | 0.2 | 0.1 | 0.1 | 0.5 |
| 70-055 | 0.46 | 333.43 | 442.7 | 9,837.2 | 37,258.6 | 152.5 | 47.5 | 34.1 | 31.5 | 3.2 | 2.5 | 1.6 | 9.8 |
| 70-060 | 0.45 | 3.53 | 4.5 | 101.0 | 382.5 | 1.6 | 0.5 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-065 | 0.45 | 1.89 | 2.4 | 54.1 | 204.8 | 0.8 | 0.3 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-070 | 0.45 | 5.8 | 7.5 | 165.9 | 628.4 | 2.6 | 0.8 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-075 | 0.43 | 5 | 6.2 | 137.1 | 519.3 | 2.1 | 0.7 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-080 | 0.46 | 11.96 | 15.8 | 351.2 | 1,330.3 | 5.4 | 1.7 | 1.2 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-085 | 0.45 | 229.48 | 293.6 | 6,524.2 | 24,710.2 | 101.1 | 31.5 | 22.6 | 20.9 | 2.1 | 1.7 | 1.1 | 6.5 |
| 70-090 | 0.45 | 18.57 | 23.9 | 531.2 | 2,012.0 | 8.2 | 2.6 | 1.8 | 1.7 | 0.2 | 0.1 | 0.1 | 0.5 |
| 70-095 | 0.45 | 9.99 | 12.9 | 285.8 | 1,082.4 | 4.4 | 1.4 | 1.0 | 0.9 | 0.1 | 0.1 | 0.0 | 0.3 |
| 70-100 | 0.45 | 9.64 | 12.4 | 275.8 | 1,044.4 | 4.3 | 1.3 | 1.0 | 0.9 | 0.1 | 0.1 | 0.0 | 0.3 |
| 70-105 | 0.45 | 1.63 | 2.1 | 46.6 | 176.6 | 0.7 | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-110 | 0.45 | 18.13 | 23.3 | 518.6 | 1,964.3 | 8.0 | 2.5 | 1.8 | 1.7 | 0.2 | 0.1 | 0.1 | 0.5 |
| 70-115 | 0.45 | 3.71 | 4.8 | 106.1 | 402.0 | 1.6 | 0.5 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-120 | 0.45 | 4.22 | 5.4 | 120.7 | 457.2 | 1.9 | 0.6 | 0.4 | 0.4 | 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 |
| 70-130 | 0.49 | 34.29 | 48.4 | 1,076.1 | 4,075.9 | 16.7 | 5.2 | 3.7 | 3.4 | 0.3 | 0.3 | 0.2 | 1.1 |
| 70-135 | 0.45 | 7.46 | 9.6 | 213.4 | 808.3 | 3.3 | 1.0 | 0.7 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 70-140 | 0.60 | 0.78 | 1.3 | 29.8 | 112.7 | 0.5 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-145 | 0.60 | 9.19 | 15.8 | 350.5 | 1,327.6 | 5.4 | 1.7 | 1.2 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-150 | 0.45 | 4.51 | 5.8 | 129.0 | 488.6 | 2.0 | 0.6 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-155 | 0.45 | 2.05 | 2.6 | 58.6 | 222.1 | 0.9 | 0.3 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-160 | 0.45 | 2.95 | 3.8 | 84.4 | 319.6 | 1.3 | 0.4 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-165 | 0.45 | 27.77 | 35.7 | 794.4 | 3,008.7 | 12.3 | 3.8 | 2.8 | 2.5 | 0.3 | 0.2 | 0.1 | 0.8 |
| 70-170 | 0.45 | 23.74 | 30.6 | 679.1 | 2,572.1 | 10.5 | 3.3 | 2.4 | 2.2 | 0.2 | 0.2 | 0.1 | 0.7 |
| 70-175 | 0.46 | 30.89 | 40.4 | 897.8 | 3,400.5 | 13.9 | 4.3 | 3.1 | 2.9 | 0.3 | 0.2 | 0.1 | 0.9 |
| 70-180 | 0.45 | 1.14 | 1.5 | 32.6 | 123.5 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-185 | 0.45 | 1.53 | 2.0 | 43.8 | 165.8 | 0.7 | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-190 | 0.17 | 15.04 | 7.4 | 164.5 | 623.2 | 2.6 | 0.8 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-195 | 0.45 | 46.02 | 59.6 | 1,323.6 | 5,013.2 | 20.5 | 6.4 | 4.6 | 4.2 | 0.4 | 0.3 | 0.2 | 1.3 |
| 70-200 | 0.45 | 31.52 | 40.6 | 901.7 | 3,415.0 | 14.0 | 4.4 | 3.1 | 2.9 | 0.3 | 0.2 | 0.1 | 0.9 |
| 70-205 | 0.45 | 1.39 | 1.8 | 39.8 | 150.6 | 0.6 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-210 | 0.45 | 3.58 | 4.6 | 102.4 | 387.9 | 1.6 | 0.5 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-215 | 0.45 | 5.93 | 7.6 | 169.6 | 642.5 | 2.6 | 0.8 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |

# 2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

**2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/06 - 03/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Winter/snowmelt Median Event Mean Concentration | | | 10.8 | 240 | 909 | 3.72 | 1.160 | 0.833 | 0.769 | 0.078 | 0.061 | 0.039 | 0.240 |
| Precipitation (meters) | 0.077 | | | | | | | | | | | | |
| 70-220 | 0.45 | 4.54 | 5.8 | 129.9 | 491.9 | 2.0 | 0.6 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-225 | 0.45 | 4.99 | 6.4 | 142.7 | 540.6 | 2.2 | 0.7 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-230 | 0.45 | 4.72 | 6.1 | 135.0 | 511.4 | 2.1 | 0.7 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-235 | 0.45 | 5.04 | 6.5 | 144.2 | 546.1 | 2.2 | 0.7 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-240 | 0.45 | 4.52 | 5.8 | 129.3 | 489.7 | 2.0 | 0.6 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-245 | 0.44 | 9.98 | 12.5 | 278.5 | 1,054.8 | 4.3 | 1.3 | 1.0 | 0.9 | 0.1 | 0.1 | 0.0 | 0.3 |
| 70-250 | 0.48 | 41.27 | 56.9 | 1,265.4 | 4,792.9 | 19.6 | 6.1 | 4.4 | 4.1 | 0.4 | 0.3 | 0.2 | 1.3 |
| 70-255 | 0.45 | 45.37 | 58.4 | 1,298.2 | 4,917.1 | 20.1 | 6.3 | 4.5 | 4.2 | 0.4 | 0.3 | 0.2 | 1.3 |
| 70-260 | 0.46 | 24.9 | 32.6 | 724.6 | 2,744.3 | 11.2 | 3.5 | 2.5 | 2.3 | 0.2 | 0.2 | 0.1 | 0.7 |
| 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 |
| 70-270 | 0.45 | 4.66 | 6.0 | 133.3 | 504.9 | 2.1 | 0.6 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-275 | 0.45 | 4.28 | 5.5 | 122.4 | 463.7 | 1.9 | 0.6 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-280 | 0.45 | 9.39 | 12.1 | 269.1 | 1,019.1 | 4.2 | 1.3 | 0.9 | 0.9 | 0.1 | 0.1 | 0.0 | 0.3 |
| 70-285 | 0.45 | 19.03 | 24.5 | 543.8 | 2,059.6 | 8.4 | 2.6 | 1.9 | 1.7 | 0.2 | 0.1 | 0.1 | 0.5 |
| 70-290 | 0.45 | 2.37 | 3.0 | 67.2 | 254.6 | 1.0 | 0.3 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-295 | 0.45 | 7.18 | 9.2 | 205.4 | 777.9 | 3.2 | 1.0 | 0.7 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 70-300 | 0.10 | 0.4 | 0.1 | 2.5 | 9.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-305 | 0.45 | 12.68 | 16.2 | 359.5 | 1,361.5 | 5.6 | 1.7 | 1.2 | 1.2 | 0.1 | 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 |
| 70-315 | 0.30 | 5.79 | 5.0 | 110.4 | 418.2 | 1.7 | 0.5 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-320 | 0.44 | 2.32 | 2.9 | 64.8 | 245.3 | 1.0 | 0.3 | 0.2 | 0.2 | 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 |
| 70-330 | 0.47 | 279.41 | 376.5 | 8,366.6 | 31,688.4 | 129.7 | 40.4 | 29.0 | 26.8 | 2.7 | 2.1 | 1.4 | 8.4 |
| 70-335 | 0.45 | 1.99 | 2.6 | 56.9 | 215.6 | 0.9 | 0.3 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-340 | 0.39 | 22.25 | 25.0 | 556.5 | 2,107.6 | 8.6 | 2.7 | 1.9 | 1.8 | 0.2 | 0.1 | 0.1 | 0.6 |
| 70-345 | 0.45 | 3.81 | 4.9 | 109.0 | 412.8 | 1.7 | 0.5 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-350 | 0.49 | 314.4 | 444.4 | 9,875.5 | 37,403.4 | 153.1 | 47.7 | 34.3 | 31.6 | 3.2 | 2.5 | 1.6 | 9.9 |
| 70-355 | 0.45 | 1.29 | 1.7 | 36.9 | 139.8 | 0.6 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-360 | 0.45 | 131.96 | 171.6 | 3,812.7 | 14,440.5 | 59.1 | 18.4 | 13.2 | 12.2 | 1.2 | 1.0 | 0.6 | 3.8 |
| 70-365 | 0.45 | 6.7 | 8.6 | 191.7 | 725.9 | 3.0 | 0.9 | 0.7 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-370 | 0.44 | 3.75 | 4.8 | 105.6 | 399.9 | 1.6 | 0.5 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-375 | 0.47 | 7.1 | 9.6 | 213.3 | 807.9 | 3.3 | 1.0 | 0.7 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 70-380 | 0.45 | 14.4 | 18.5 | 411.9 | 1,560.2 | 6.4 | 2.0 | 1.4 | 1.3 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-385 | 0.45 | 14.97 | 19.3 | 428.2 | 1,621.9 | 6.6 | 2.1 | 1.5 | 1.4 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-390 | 0.46 | 58.11 | 77.0 | 1,711.2 | 6,481.1 | 26.5 | 8.3 | 5.9 | 5.5 | 0.6 | 0.4 | 0.3 | 1.7 |
| 70-395 | 0.43 | 57.19 | 70.3 | 1,561.5 | 5,914.3 | 24.2 | 7.5 | 5.4 | 5.0 | 0.5 | 0.4 | 0.3 | 1.6 |
| 70-400 | 0.44 | 9.67 | 12.1 | 269.8 | 1,021.7 | 4.2 | 1.3 | 0.9 | 0.9 | 0.1 | 0.1 | 0.0 | 0.3 |
| 70-405 | 0.25 | 7.16 | 5.1 | 113.8 | 431.1 | 1.8 | 0.6 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-410 | 0.43 | 5.8 | 7.1 | 158.1 | 598.9 | 2.5 | 0.8 | 0.5 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-415 | 0.45 | 120.75 | 156.8 | 3,484.6 | 13,197.8 | 54.0 | 16.8 | 12.1 | 11.2 | 1.1 | 0.9 | 0.6 | 3.5 |
| 70-420 | 0.45 | 16.99 | 21.9 | 486.0 | 1,840.8 | 7.5 | 2.3 | 1.7 | 1.6 | 0.2 | 0.1 | 0.1 | 0.5 |
| 70-425 | 0.51 | 20.63 | 30.2 | 670.1 | 2,538.1 | 10.4 | 3.2 | 2.3 | 2.1 | 0.2 | 0.2 | 0.1 | 0.7 |
| 70-430 | 0.10 | 6.19 | 1.8 | 39.3 | 149.0 | 0.6 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-435 | 0.10 | 9.16 | 2.6 | 58.2 | 220.5 | 0.9 | 0.3 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-440 | 0.50 | 34.48 | 49.0 | 1,088.7 | 4,123.5 | 16.9 | 5.3 | 3.8 | 3.5 | 0.4 | 0.3 | 0.2 | 1.1 |
| 70-445 | 0.45 | 5.6 | 7.2 | 160.2 | 606.7 | 2.5 | 0.8 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-450 | 0.45 | 2.65 | 3.4 | 75.8 | 287.1 | 1.2 | 0.4 | 0.3 | 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 |
| 70-460 | 0.45 | 2.67 | 3.4 | 76.4 | 289.3 | 1.2 | 0.4 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-465 | 0.45 | 2.58 | 3.3 | 73.8 | 279.5 | 1.1 | 0.4 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-470 | 0.38 | 8.55 | 9.4 | 208.7 | 790.6 | 3.2 | 1.0 | 0.7 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 70-475 | 0.46 | 229.14 | 301.7 | 6,705.2 | 25,396.1 | 103.9 | 32.4 | 23.3 | 21.5 | 2.2 | 1.7 | 1.1 | 6.7 |
| 70-480 | 0.60 | 0.31 | 0.5 | 11.8 | 44.8 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-485 | 0.45 | 13.36 | 17.2 | 382.2 | 1,447.5 | 5.9 | 1.8 | 1.3 | 1.2 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-490 | 0.47 | 48.75 | 65.5 | 1,454.6 | 5,509.1 | 22.5 | 7.0 | 5.0 | 4.7 | 0.5 | 0.4 | 0.2 | 1.5 |
| 70-495 | 0.45 | 7.74 | 10.0 | 221.4 | 838.6 | 3.4 | 1.1 | 0.8 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 70-500 | 0.45 | 0.56 | 0.7 | 16.0 | 60.7 | 0.2 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-505 | 0.41 | 8.12 | 9.6 | 212.5 | 804.8 | 3.3 | 1.0 | 0.7 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 70-510 | 0.45 | 41.82 | 54.0 | 1,200.2 | 4,545.8 | 18.6 | 5.8 | 4.2 | 3.8 | 0.4 | 0.3 | 0.2 | 1.2 |
| 70-515 | 0.47 | 62.73 | 84.3 | 1,873.9 | 7,097.4 | 29.0 | 9.1 | 6.5 | 6.0 | 0.6 | 0.5 | 0.3 | 1.9 |
| 70-520 | 0.45 | 6.05 | 7.8 | 173.1 | 655.5 | 2.7 | 0.8 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-525 | 0.45 | 6.23 | 8.0 | 178.2 | 675.0 | 2.8 | 0.9 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-530 | 0.45 | 1.67 | 2.1 | 47.8 | 180.9 | 0.7 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-535 | 0.45 | 30.24 | 39.0 | 867.1 | 3,284.0 | 13.4 | 4.2 | 3.0 | 2.8 | 0.3 | 0.2 | 0.1 | 0.9 |
| 70-540 | 0.21 | 5.1 | 3.1 | 69.2 | 262.1 | 1.1 | 0.3 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-545 | 0.45 | 1.89 | 2.4 | 54.1 | 204.8 | 0.8 | 0.3 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-550 | 0.26 | 1.3 | 1.0 | 21.4 | 81.0 | 0.3 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-555 | 0.45 | 1.73 | 2.2 | 49.5 | 187.4 | 0.8 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-560 | 0.45 | 3.33 | 4.3 | 95.3 | 360.8 | 1.5 | 0.5 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-565 | 0.24 | 16.63 | 11.4 | 254.3 | 963.2 | 3.9 | 1.2 | 0.9 | 0.8 | 0.1 | 0.1 | 0.0 | 0.3 |
| 70-570 | 0.45 | 1.23 | 1.6 | 35.2 | 133.3 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-575 | 0.45 | 15.39 | 19.8 | 439.8 | 1,665.8 | 6.8 | 2.1 | 1.5 | 1.4 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-580 | 0.43 | 119.93 | 148.8 | 3,307.2 | 12,525.9 | 51.3 | 16.0 | 11.5 | 10.6 | 1.1 | 0.8 | 0.5 | 3.3 |
| 71-010 | 0.10 | 1.12 | 0.3 | 7.1 | 27.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 71-020 | 0.45 | 14.05 | 18.1 | 401.9 | 1,522.2 | 6.2 | 1.9 | 1.4 | 1.3 | 0.1 | 0.1 | 0.1 | 0.4 |
| 71-030 | 0.45 | 28.58 | 37.0 | 822.0 | 3,113.4 | 12.7 | 4.0 | 2.9 | 2.6 | 0.3 | 0.2 | 0.1 | 0.8 |
| 71-040 | 0.22 | 20.93 | 13.1 | 292.0 | 1,106.1 | 4.5 | 1.4 | 1.0 | 0.9 | 0.1 | 0.1 | 0.0 | 0.3 |

# 2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL

**2006 WINTER/SNOWMELT POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (01/01/06 - 03/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Winter/snowmelt Median Event Mean Concentration** | | | 10.8 | 240 | 909 | 3.72 | 1.160 | 0.833 | 0.769 | 0.078 | 0.061 | 0.039 | 0.240 |
| **Precipitation (meters)** | **0.077** | | | | | | | | | | | | |
| 71-050 | 0.46 | 120.42 | 157.8 | 3,505.9 | 13,278.7 | 54.3 | 16.9 | 12.2 | 11.2 | 1.1 | 0.9 | 0.6 | 3.5 |
| 71-060 | 0.45 | 3.11 | 4.0 | 89.0 | 337.0 | 1.4 | 0.4 | 0.3 | 0.3 | 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 |
| 71-080 | 0.46 | 101.79 | 132.9 | 2,952.4 | 11,182.3 | 45.8 | 14.3 | 10.2 | 9.5 | 1.0 | 0.8 | 0.5 | 3.0 |
| 71-090 | 0.45 | 6.5 | 8.3 | 184.1 | 697.3 | 2.9 | 0.9 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 71-100 | 0.10 | 1.99 | 0.6 | 12.7 | 47.9 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-010 | 0.18 | 17.32 | 8.7 | 192.8 | 730.2 | 3.0 | 0.9 | 0.7 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 72-020 | 0.40 | 24.7 | 27.9 | 620.4 | 2,349.8 | 9.6 | 3.0 | 2.2 | 2.0 | 0.2 | 0.2 | 0.1 | 0.6 |
| 72-030 | 0.10 | 5.25 | 1.5 | 33.4 | 126.4 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-040 | 0.42 | 166.54 | 198.4 | 4,409.7 | 16,701.9 | 68.4 | 21.3 | 15.3 | 14.1 | 1.4 | 1.1 | 0.7 | 4.4 |
| 72-050 | 0.10 | 5.16 | 1.5 | 32.8 | 124.2 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-060 | 0.36 | 113.04 | 117.0 | 2,599.2 | 9,844.7 | 40.3 | 12.6 | 9.0 | 8.3 | 0.8 | 0.7 | 0.4 | 2.6 |
| 72-070 | 0.10 | 2.21 | 0.6 | 14.0 | 53.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-080 | 0.60 | 4.74 | 8.1 | 180.8 | 684.7 | 2.8 | 0.9 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 72-090 | 0.45 | 68.71 | 87.9 | 1,953.2 | 7,397.6 | 30.3 | 9.4 | 6.8 | 6.3 | 0.6 | 0.5 | 0.3 | 2.0 |
| 72-100 | 0.46 | 68.32 | 90.5 | 2,010.8 | 7,616.0 | 31.2 | 9.7 | 7.0 | 6.4 | 0.7 | 0.5 | 0.3 | 2.0 |
| 72-110 | 0.10 | 3.22 | 0.9 | 20.5 | 77.5 | 0.3 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-120 | 0.45 | 62.98 | 81.1 | 1,801.6 | 6,823.6 | 27.9 | 8.7 | 6.3 | 5.8 | 0.6 | 0.5 | 0.3 | 1.8 |
| 72-130 | 0.46 | 58.06 | 75.8 | 1,684.2 | 6,379.0 | 26.1 | 8.1 | 5.8 | 5.4 | 0.5 | 0.4 | 0.3 | 1.7 |
| 72-140 | 0.10 | 10.19 | 2.9 | 64.8 | 245.3 | 1.0 | 0.3 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 72-150 | 0.10 | 4.76 | 1.4 | 30.3 | 114.6 | 0.5 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-160 | 0.10 | 4.55 | 1.3 | 28.9 | 109.5 | 0.4 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 73-010 | 0.44 | 20.76 | 26.1 | 579.2 | 2,193.7 | 9.0 | 2.8 | 2.0 | 1.9 | 0.2 | 0.1 | 0.1 | 0.6 |
| 73-020 | 0.44 | 57.47 | 72.8 | 1,616.9 | 6,123.9 | 25.1 | 7.8 | 5.6 | 5.2 | 0.5 | 0.4 | 0.3 | 1.6 |
| 73-030 | 0.10 | 21.56 | 6.2 | 137.1 | 519.1 | 2.1 | 0.7 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 74-010 | 0.48 | 44.39 | 60.8 | 1,350.7 | 5,115.8 | 20.9 | 6.5 | 4.7 | 4.3 | 0.4 | 0.3 | 0.2 | 1.4 |
| 74-020 | 0.45 | 4.41 | 5.7 | 126.2 | 477.8 | 2.0 | 0.6 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 75-005 | 0.45 | 12.39 | 15.9 | 354.0 | 1,340.8 | 5.5 | 1.7 | 1.2 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 75-010 | 0.60 | 3.65 | 6.3 | 139.2 | 527.3 | 2.2 | 0.7 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 75-020 | 0.45 | 1.53 | 2.0 | 43.8 | 165.8 | 0.7 | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75-030 | 0.45 | 8.38 | 10.8 | 239.7 | 907.9 | 3.7 | 1.2 | 0.8 | 0.8 | 0.1 | 0.1 | 0.0 | 0.2 |
| 75-040 | 0.45 | 14.74 | 19.0 | 421.7 | 1,597.0 | 6.5 | 2.0 | 1.5 | 1.4 | 0.1 | 0.1 | 0.1 | 0.4 |
| 76-010 | 0.46 | 907.31 | 1,203.9 | 26,752.7 | 101,325.8 | 414.7 | 129.3 | 92.9 | 85.7 | 8.7 | 6.8 | 4.4 | 26.8 |
| 76-020 | 0.46 | 88.62 | 115.5 | 2,567.0 | 9,722.6 | 39.8 | 12.4 | 8.9 | 8.2 | 0.8 | 0.7 | 0.4 | 2.6 |
| 76-030 | 0.45 | 7.55 | 9.7 | 216.0 | 818.0 | 3.3 | 1.0 | 0.7 | 0.7 | 0.1 | 0.1 | 0.0 | 0.2 |
| 76-040 | 0.19 | 4.67 | 2.5 | 55.3 | 209.3 | 0.9 | 0.3 | 0.2 | 0.2 | 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 |
| 81-010 | 0.10 | 31.17 | 8.9 | 198.1 | 750.5 | 3.1 | 1.0 | 0.7 | 0.6 | 0.1 | 0.1 | 0.0 | 0.2 |
| 82-010 | 0.49 | 23.53 | 32.8 | 727.8 | 2,756.6 | 11.3 | 3.5 | 2.5 | 2.3 | 0.2 | 0.2 | 0.1 | 0.7 |
| 82-020 | 0.45 | 73.45 | 95.6 | 2,123.6 | 8,043.1 | 32.9 | 10.3 | 7.4 | 6.8 | 0.7 | 0.5 | 0.3 | 2.1 |
| 82-030 | 0.45 | 90.04 | 117.1 | 2,602.6 | 9,857.3 | 40.3 | 12.6 | 9.0 | 8.3 | 0.8 | 0.7 | 0.4 | 2.6 |
| 82-040 | 0.46 | 98.49 | 130.7 | 2,904.5 | 11,000.6 | 45.0 | 14.0 | 10.1 | 9.3 | 0.9 | 0.7 | 0.5 | 2.9 |
| 83-010 | 0.45 | 6.59 | 8.5 | 188.5 | 714.0 | 2.9 | 0.9 | 0.7 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 83-015 | 0.45 | 0.99 | 1.3 | 28.3 | 107.3 | 0.4 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-020 | 0.43 | 85.96 | 106.9 | 2,375.8 | 8,998.2 | 36.8 | 11.5 | 8.2 | 7.6 | 0.8 | 0.6 | 0.4 | 2.4 |
| 83-025 | 0.45 | 51.23 | 65.9 | 1,465.5 | 5,550.5 | 22.7 | 7.1 | 5.1 | 4.7 | 0.5 | 0.4 | 0.2 | 1.5 |
| 83-030 | 0.60 | 0.82 | 1.4 | 31.3 | 118.5 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-040 | 0.10 | 1.08 | 0.3 | 6.9 | 26.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-050 | 0.45 | 40.4 | 52.1 | 1,158.8 | 4,389.1 | 18.0 | 5.6 | 4.0 | 3.7 | 0.4 | 0.3 | 0.2 | 1.2 |
| 83-060 | 0.45 | 10.05 | 12.9 | 287.5 | 1,088.9 | 4.5 | 1.4 | 1.0 | 0.9 | 0.1 | 0.1 | 0.0 | 0.3 |
| 83-070 | 0.10 | 1.19 | 0.3 | 7.6 | 28.7 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-080 | 0.48 | 178.63 | 242.9 | 5,398.8 | 20,447.8 | 83.7 | 26.1 | 18.7 | 17.3 | 1.8 | 1.4 | 0.9 | 5.4 |
| 83-090 | 0.41 | 9.16 | 10.7 | 238.6 | 903.7 | 3.7 | 1.2 | 0.8 | 0.8 | 0.1 | 0.1 | 0.0 | 0.2 |
| 84-010 | 0.47 | 21.56 | 29.0 | 644.6 | 2,441.5 | 10.0 | 3.1 | 2.2 | 2.1 | 0.2 | 0.2 | 0.1 | 0.6 |
| 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 |
| **WINTER (SNOWMELT) SEASONAL SUMMATION (kg)** | | | **38,640.39** | **858,675.23** | **3,252,232.43** | **13,309.47** | **4,150.26** | **2,980.32** | **2,751.34** | **279.07** | **219.68** | **140.61** | **858.68** |

# 2006 SPRING POLLUTANT LOADINGS BY OUTFALL

**2006 SPRING POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (04/01/06 - 05/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spring Median Event Mean Concentration | | | 18.5 | 210 | 64 | 3.63 | 1.470 | 0.759 | 0.593 | 0.071 | 0.041 | 0.0497 | 0.209 |
| Precipitation (meters) | 0.194 | | | | | | | | | | | | |
| 10-010 | 0.43 | 113.55 | 604.8 | 6,865.1 | 2,075.9 | 118.7 | 48.1 | 24.8 | 19.4 | 2.3 | 1.3 | 1.6 | 6.8 |
| 10-020 | 0.45 | 7.81 | 43.4 | 492.5 | 148.9 | 8.5 | 3.4 | 1.8 | 1.4 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-030 | 0.10 | 4.05 | 5.0 | 56.8 | 17.2 | 1.0 | 0.4 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-040 | 0.45 | 167.42 | 923.7 | 10,484.7 | 3,170.4 | 181.2 | 73.4 | 37.9 | 29.6 | 3.5 | 2.0 | 2.5 | 10.4 |
| 10-050 | 0.46 | 114.18 | 641.7 | 7,283.8 | 2,202.5 | 125.9 | 51.0 | 26.3 | 20.6 | 2.5 | 1.4 | 1.7 | 7.2 |
| 10-060 | 0.60 | 10.5 | 77.8 | 882.9 | 267.0 | 15.3 | 6.2 | 3.2 | 2.5 | 0.3 | 0.2 | 0.2 | 0.9 |
| 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 |
| 10-080 | 0.38 | 30.66 | 144.6 | 1,641.9 | 496.5 | 28.4 | 11.5 | 5.9 | 4.6 | 0.6 | 0.3 | 0.4 | 1.6 |
| 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 |
| 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 |
| 10-090C | 0.54 | 12.77 | 85.4 | 969.1 | 293.0 | 16.8 | 6.8 | 3.5 | 2.7 | 0.3 | 0.2 | 0.2 | 1.0 |
| 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 |
| 10-100 | 0.36 | 1392.1 | 6,233.9 | 70,762.9 | 21,397.4 | 1,223.2 | 495.3 | 255.8 | 199.8 | 23.9 | 13.8 | 16.7 | 70.4 |
| 10-110 | 0.47 | 300.11 | 1,728.5 | 19,621.3 | 5,933.1 | 339.2 | 137.3 | 70.9 | 55.4 | 6.6 | 3.8 | 4.6 | 19.5 |
| 10-120A/B | 0.44 | 372.78 | 2,003.2 | 22,738.5 | 6,875.7 | 393.1 | 159.2 | 82.2 | 64.2 | 7.7 | 4.4 | 5.4 | 22.6 |
| 10-130 | 0.45 | 336.46 | 1,875.5 | 21,289.9 | 6,437.7 | 368.0 | 149.0 | 76.9 | 60.1 | 7.2 | 4.2 | 5.0 | 21.2 |
| 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 |
| 10-140a,b | 0.58 | 220.65 | 1,567.5 | 17,793.4 | 5,380.4 | 307.6 | 124.6 | 64.3 | 50.2 | 6.0 | 3.5 | 4.2 | 17.7 |
| 10-150 | 0.47 | 157.15 | 909.7 | 10,326.0 | 3,122.4 | 178.5 | 72.3 | 37.3 | 29.2 | 3.5 | 2.0 | 2.4 | 10.3 |
| 10-160 | 0.00 | 17 | 0.5 | 6.0 | 1.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-170 | 0.50 | 176.01 | 1,093.5 | 12,412.6 | 3,753.3 | 214.6 | 86.9 | 44.9 | 35.1 | 4.2 | 2.4 | 2.9 | 12.4 |
| 10-180 | 0.45 | 284.26 | 1,562.8 | 17,739.7 | 5,364.1 | 306.6 | 124.2 | 64.1 | 50.1 | 6.0 | 3.5 | 4.2 | 17.7 |
| 10-190 | 0.59 | 14.58 | 106.5 | 1,209.1 | 365.6 | 20.9 | 8.5 | 4.4 | 3.4 | 0.4 | 0.2 | 0.3 | 1.2 |
| 10-200 | 0.40 | 42.44 | 208.0 | 2,361.4 | 714.0 | 40.8 | 16.5 | 8.5 | 6.7 | 0.8 | 0.5 | 0.6 | 2.4 |
| 10-210 | 0.49 | 98.32 | 596.7 | 6,773.2 | 2,048.1 | 117.1 | 47.4 | 24.5 | 19.1 | 2.3 | 1.3 | 1.6 | 6.7 |
| 10-220 | 0.56 | 18.83 | 130.0 | 1,475.3 | 446.1 | 25.5 | 10.3 | 5.3 | 4.2 | 0.5 | 0.3 | 0.3 | 1.5 |
| 10-230 | 0.47 | 235.02 | 1,371.5 | 15,568.8 | 4,707.7 | 269.1 | 109.0 | 56.3 | 44.0 | 5.3 | 3.0 | 3.7 | 15.5 |
| 10-240 | 0.51 | 103.83 | 658.5 | 7,474.9 | 2,260.3 | 129.2 | 52.3 | 27.0 | 21.1 | 2.5 | 1.5 | 1.8 | 7.4 |
| 10-250 | 0.49 | 242.96 | 1,466.3 | 16,644.7 | 5,033.0 | 287.7 | 116.5 | 60.2 | 47.0 | 5.6 | 3.2 | 3.9 | 16.6 |
| 10-260 | 0.56 | 23.77 | 163.5 | 1,855.9 | 561.2 | 32.1 | 13.0 | 6.7 | 5.2 | 0.6 | 0.4 | 0.4 | 1.8 |
| 10-270 | 0.47 | 72.45 | 423.8 | 4,811.1 | 1,454.8 | 83.2 | 33.7 | 17.4 | 13.6 | 1.6 | 0.9 | 1.1 | 4.8 |
| 10-280 | 0.44 | 55.08 | 301.8 | 3,425.8 | 1,035.9 | 59.2 | 24.0 | 12.4 | 9.7 | 1.2 | 0.7 | 0.8 | 3.4 |
| 10-290 | 0.10 | 6.83 | 8.4 | 95.7 | 28.9 | 1.7 | 0.7 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-300 | 0.36 | 17.74 | 79.0 | 896.5 | 271.1 | 15.5 | 6.3 | 3.2 | 2.5 | 0.3 | 0.2 | 0.2 | 0.9 |
| 10-310 | 0.47 | 60.29 | 351.5 | 3,989.9 | 1,206.5 | 69.0 | 27.9 | 14.4 | 11.3 | 1.3 | 0.8 | 0.9 | 4.0 |
| 10-320 | 0.45 | 341.99 | 1,907.4 | 21,651.7 | 6,547.1 | 374.3 | 151.6 | 78.3 | 61.1 | 7.3 | 4.2 | 5.1 | 21.5 |
| 10-330 | 0.35 | 21.61 | 93.8 | 1,064.7 | 322.0 | 18.4 | 7.5 | 3.8 | 3.0 | 0.4 | 0.2 | 0.3 | 1.1 |
| 10-340 | 0.45 | 20.74 | 115.5 | 1,311.4 | 396.6 | 22.7 | 9.2 | 4.7 | 3.7 | 0.4 | 0.3 | 0.3 | 1.3 |
| 10-350 | 0.60 | 28.16 | 208.2 | 2,363.5 | 714.7 | 40.9 | 16.5 | 8.5 | 6.7 | 0.8 | 0.5 | 0.6 | 2.4 |
| 10-360 | 0.59 | 29.02 | 212.3 | 2,410.3 | 728.8 | 41.7 | 16.9 | 8.7 | 6.8 | 0.8 | 0.5 | 0.6 | 2.4 |
| 10-370 | 0.59 | 14.46 | 105.2 | 1,194.7 | 361.3 | 20.7 | 8.4 | 4.3 | 3.4 | 0.4 | 0.2 | 0.3 | 1.2 |
| 10-380 | 0.45 | 14.38 | 79.0 | 897.1 | 271.3 | 15.5 | 6.3 | 3.2 | 2.5 | 0.3 | 0.2 | 0.2 | 0.9 |
| 10-390 | 0.49 | 41.97 | 255.5 | 2,900.1 | 876.9 | 50.1 | 20.3 | 10.5 | 8.2 | 1.0 | 0.6 | 0.7 | 2.9 |
| 10-400A | 0.10 | 1.07 | 1.3 | 15.0 | 4.5 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-400B | 0.47 | 17.66 | 102.8 | 1,167.1 | 352.9 | 20.2 | 8.2 | 4.2 | 3.3 | 0.4 | 0.2 | 0.3 | 1.2 |
| 10-400C | 0.57 | 50.25 | 351.0 | 3,984.3 | 1,204.8 | 68.9 | 27.9 | 14.4 | 11.3 | 1.3 | 0.8 | 0.9 | 4.0 |
| 10-410A | 0.50 | 46.22 | 284.1 | 3,224.6 | 975.1 | 55.7 | 22.6 | 11.7 | 9.1 | 1.1 | 0.6 | 0.8 | 3.2 |
| 10-410B | 0.32 | 21.29 | 83.2 | 944.0 | 285.4 | 16.3 | 6.6 | 3.4 | 2.7 | 0.3 | 0.2 | 0.2 | 0.9 |
| 10-410C | 0.53 | 22.8 | 148.6 | 1,686.4 | 509.9 | 29.2 | 11.8 | 6.1 | 4.8 | 0.6 | 0.3 | 0.4 | 1.7 |
| 10-410D | 0.60 | 27.34 | 202.6 | 2,299.8 | 695.4 | 39.8 | 16.1 | 8.3 | 6.5 | 0.8 | 0.4 | 0.5 | 2.3 |
| 10-410E | 0.58 | 256.04 | 1,818.9 | 20,647.3 | 6,243.3 | 356.9 | 144.5 | 74.6 | 58.3 | 7.0 | 4.0 | 4.9 | 20.5 |
| 10-410F | 0.59 | 37.92 | 275.4 | 3,125.9 | 945.2 | 54.0 | 21.9 | 11.3 | 8.8 | 1.1 | 0.6 | 0.7 | 3.1 |
| 10-420A | 0.27 | 23.05 | 77.5 | 880.3 | 266.2 | 15.2 | 6.2 | 3.2 | 2.5 | 0.3 | 0.2 | 0.2 | 0.9 |
| 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 |
| 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 |
| 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 |
| 10-420E | 0.59 | 127.89 | 926.5 | 10,517.5 | 3,180.3 | 181.8 | 73.6 | 38.0 | 29.7 | 3.6 | 2.1 | 2.5 | 10.5 |
| 10-430A | 0.00 | 8.14 | 0.3 | 2.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-430B | 0.53 | 54.72 | 361.0 | 4,097.5 | 1,239.0 | 70.8 | 28.7 | 14.8 | 11.6 | 1.4 | 0.8 | 1.0 | 4.1 |
| 10-430C | 0.48 | 44.83 | 265.9 | 3,018.1 | 912.6 | 52.2 | 21.1 | 10.9 | 8.5 | 1.0 | 0.6 | 0.7 | 3.0 |
| 10-430D | 0.49 | 85.79 | 520.7 | 5,910.4 | 1,787.2 | 102.2 | 41.4 | 21.4 | 16.7 | 2.0 | 1.2 | 1.4 | 5.9 |
| 10-430E | 0.56 | 86.66 | 596.6 | 6,771.9 | 2,047.7 | 117.1 | 47.4 | 24.5 | 19.1 | 2.3 | 1.3 | 1.6 | 6.7 |
| 10-430F | 0.10 | 377.97 | 466.6 | 5,296.9 | 1,601.7 | 91.6 | 37.1 | 19.1 | 15.0 | 1.8 | 1.0 | 1.3 | 5.3 |
| 10-430G | 0.50 | 125.89 | 770.2 | 8,743.2 | 2,643.8 | 151.1 | 61.2 | 31.6 | 24.7 | 3.0 | 1.7 | 2.1 | 8.7 |
| 10-430H | 0.49 | 33.18 | 201.3 | 2,284.8 | 690.9 | 39.5 | 16.0 | 8.3 | 6.5 | 0.8 | 0.4 | 0.5 | 2.3 |
| 10-430I | 0.59 | 32.61 | 237.0 | 2,690.0 | 813.4 | 46.5 | 18.8 | 9.7 | 7.6 | 0.9 | 0.5 | 0.6 | 2.7 |
| 10-430J | 0.43 | 532.36 | 2,852.1 | 32,374.9 | 9,789.5 | 559.6 | 226.6 | 117.0 | 91.4 | 10.9 | 6.3 | 7.7 | 32.2 |
| 10-430K | 0.48 | 337.06 | 1,987.6 | 22,562.2 | 6,822.4 | 390.0 | 157.9 | 81.5 | 63.7 | 7.6 | 4.4 | 5.3 | 22.5 |
| 10-430L | 0.45 | 84.4 | 469.7 | 5,331.5 | 1,612.1 | 92.2 | 37.3 | 19.3 | 15.1 | 1.8 | 1.0 | 1.3 | 5.3 |
| 10-430M | 0.54 | 75.94 | 508.5 | 5,772.2 | 1,745.4 | 99.8 | 40.4 | 20.9 | 16.3 | 2.0 | 1.1 | 1.4 | 5.7 |
| 10-430N | 0.44 | 26.43 | 144.8 | 1,644.2 | 497.2 | 28.4 | 11.5 | 5.9 | 4.6 | 0.6 | 0.3 | 0.4 | 1.6 |
| 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 |
| 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 |
| 10-430Q | 0.10 | 8.03 | 9.9 | 112.5 | 34.0 | 1.9 | 0.8 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-430R | 0.47 | 150.32 | 867.5 | 9,847.7 | 2,977.7 | 170.2 | 68.9 | 35.6 | 27.8 | 3.3 | 1.9 | 2.3 | 9.8 |
| 10-430S | 0.10 | 5.15 | 6.4 | 72.2 | 21.8 | 1.2 | 0.5 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-430T | 0.46 | 262.47 | 1,481.2 | 16,814.0 | 5,084.2 | 290.6 | 117.7 | 60.8 | 47.5 | 5.7 | 3.3 | 4.0 | 16.7 |

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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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spring Median Event Mean Concentration | | | 18.5 | 210 | 64 | 3.63 | 1.470 | 0.759 | 0.593 | 0.071 | 0.041 | 0.0497 | 0.209 |
| Precipitation (meters) | 0.194 | | | | | | | | | | | | |
| 10-430U | 0.47 | 431.37 | 2,502.2 | 28,403.8 | 8,588.8 | 491.0 | 198.8 | 102.7 | 80.2 | 9.6 | 5.5 | 6.7 | 28.3 |
| 10-430V | 0.46 | 329.11 | 1,888.7 | 21,438.9 | 6,482.7 | 370.6 | 150.1 | 77.5 | 60.5 | 7.2 | 4.2 | 5.1 | 21.3 |
| 10-440A | 0.46 | 23.18 | 131.1 | 1,488.2 | 450.0 | 25.7 | 10.4 | 5.4 | 4.2 | 0.5 | 0.3 | 0.4 | 1.5 |
| 10-440B | 0.49 | 34.23 | 208.3 | 2,364.0 | 714.8 | 40.9 | 16.5 | 8.5 | 6.7 | 0.8 | 0.5 | 0.6 | 2.4 |
| 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 |
| 10-440E | 0.51 | 831.25 | 5,277.3 | 59,904.0 | 18,113.8 | 1,035.5 | 419.3 | 216.5 | 169.2 | 20.3 | 11.7 | 14.2 | 59.6 |
| 10-440F | 0.46 | 538.85 | 3,061.6 | 34,753.5 | 10,508.8 | 600.7 | 243.3 | 125.6 | 98.1 | 11.7 | 6.8 | 8.2 | 34.6 |
| 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 |
| 10-450B | 0.52 | 3.41 | 21.8 | 246.9 | 74.7 | 4.3 | 1.7 | 0.9 | 0.7 | 0.1 | 0.0 | 0.1 | 0.2 |
| 10-450C | 0.59 | 55.64 | 407.9 | 4,630.4 | 1,400.2 | 80.0 | 32.4 | 16.7 | 13.1 | 1.6 | 0.9 | 1.1 | 4.6 |
| 10-450D | 0.45 | 4.62 | 25.7 | 291.4 | 88.1 | 5.0 | 2.0 | 1.1 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 10-450E | 0.44 | 3.2 | 17.5 | 198.2 | 59.9 | 3.4 | 1.4 | 0.7 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 10-450F | 0.46 | 158.55 | 899.3 | 10,208.1 | 3,086.7 | 176.5 | 71.5 | 36.9 | 28.8 | 3.5 | 2.0 | 2.4 | 10.2 |
| 10-450G/H | 0.48 | 75.02 | 445.0 | 5,051.6 | 1,527.5 | 87.3 | 35.4 | 18.3 | 14.3 | 1.7 | 1.0 | 1.2 | 5.0 |
| 10-450I | 0.49 | 243.64 | 1,477.6 | 16,772.2 | 5,071.6 | 289.9 | 117.4 | 60.6 | 47.4 | 5.7 | 3.3 | 4.0 | 16.7 |
| 10-450J | 0.49 | 17.16 | 102.8 | 1,167.5 | 353.0 | 20.2 | 8.2 | 4.2 | 3.3 | 0.4 | 0.2 | 0.3 | 1.2 |
| 10-450K | 0.58 | 37.01 | 264.7 | 3,004.4 | 908.5 | 51.9 | 21.0 | 10.9 | 8.5 | 1.0 | 0.6 | 0.7 | 3.0 |
| 10-450L | 0.51 | 213.41 | 1,330.7 | 15,105.0 | 4,567.5 | 261.1 | 105.7 | 54.6 | 42.7 | 5.1 | 2.9 | 3.6 | 15.0 |
| 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 |
| 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 |
| 10-460B | 0.52 | 7.29 | 46.5 | 528.0 | 159.6 | 9.1 | 3.7 | 1.9 | 1.5 | 0.2 | 0.1 | 0.1 | 0.5 |
| 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 |
| 10-460E | 0.49 | 231.41 | 1,410.9 | 16,015.3 | 4,842.7 | 276.8 | 112.1 | 57.9 | 45.2 | 5.4 | 3.1 | 3.8 | 15.9 |
| 10-460F | 0.49 | 14.75 | 90.1 | 1,022.6 | 309.2 | 17.7 | 7.2 | 3.7 | 2.9 | 0.3 | 0.2 | 0.2 | 1.0 |
| 10-460G | 0.51 | 79.66 | 502.4 | 5,702.4 | 1,724.3 | 98.6 | 39.9 | 20.6 | 16.1 | 1.9 | 1.1 | 1.3 | 5.7 |
| 10-460H | 0.48 | 12.35 | 73.1 | 829.7 | 250.9 | 14.3 | 5.8 | 3.0 | 2.3 | 0.3 | 0.2 | 0.2 | 0.8 |
| 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 |
| 10-460J | 0.46 | 5.36 | 30.7 | 348.3 | 105.3 | 6.0 | 2.4 | 1.3 | 1.0 | 0.1 | 0.1 | 0.1 | 0.3 |
| 10-460K | 0.36 | 5.48 | 24.3 | 276.2 | 83.5 | 4.8 | 1.9 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 10-460L | 0.46 | 3.5 | 20.0 | 227.3 | 68.7 | 3.9 | 1.6 | 0.8 | 0.6 | 0.1 | 0.0 | 0.1 | 0.2 |
| 10-460M | 0.48 | 9.55 | 56.4 | 640.5 | 193.7 | 11.1 | 4.5 | 2.3 | 1.8 | 0.2 | 0.1 | 0.2 | 0.6 |
| 10-460N | 0.45 | 3.85 | 21.4 | 242.8 | 73.4 | 4.2 | 1.7 | 0.9 | 0.7 | 0.1 | 0.0 | 0.1 | 0.2 |
| 10-460O | 0.45 | 4.15 | 23.2 | 263.9 | 79.8 | 4.6 | 1.8 | 1.0 | 0.7 | 0.1 | 0.1 | 0.1 | 0.3 |
| 10-460P | 0.45 | 4.34 | 24.1 | 273.7 | 82.8 | 4.7 | 1.9 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 10-460Q | 0.56 | 19.73 | 137.4 | 1,559.9 | 471.7 | 27.0 | 10.9 | 5.6 | 4.4 | 0.5 | 0.3 | 0.4 | 1.6 |
| 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 |
| 10-460S | 0.56 | 233.54 | 1,627.0 | 18,468.5 | 5,584.5 | 319.2 | 129.3 | 66.8 | 52.2 | 6.2 | 3.6 | 4.4 | 18.4 |
| 10-465 | 0.10 | 8.56 | 10.6 | 120.0 | 36.3 | 2.1 | 0.8 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-470 | 0.38 | 25.6 | 120.6 | 1,369.2 | 414.0 | 23.7 | 9.6 | 4.9 | 3.9 | 0.5 | 0.3 | 0.3 | 1.4 |
| 10-480 | 0.58 | 39.66 | 284.1 | 3,224.6 | 975.1 | 55.7 | 22.6 | 11.7 | 9.1 | 1.1 | 0.6 | 0.8 | 3.2 |
| 10-485 | 0.00 | 7.27 | 0.2 | 2.5 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-490 | 0.43 | 150.96 | 808.0 | 9,171.4 | 2,773.2 | 158.5 | 64.2 | 33.1 | 25.9 | 3.1 | 1.8 | 2.2 | 9.1 |
| 10-500A | 0.26 | 26.21 | 84.9 | 964.0 | 291.5 | 16.7 | 6.7 | 3.5 | 2.7 | 0.3 | 0.2 | 0.2 | 1.0 |
| 10-500B | 0.46 | 8.48 | 48.2 | 547.0 | 165.4 | 9.5 | 3.8 | 2.0 | 1.5 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-500C | 0.44 | 111.36 | 598.5 | 6,794.2 | 2,054.4 | 117.4 | 47.6 | 24.6 | 19.2 | 2.3 | 1.3 | 1.6 | 6.8 |
| 10-500D | 0.24 | 3.83 | 11.3 | 127.8 | 38.6 | 2.2 | 0.9 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-500E | 0.53 | 23.34 | 153.4 | 1,741.5 | 526.6 | 30.1 | 12.2 | 6.3 | 4.9 | 0.6 | 0.3 | 0.4 | 1.7 |
| 10-500F | 0.49 | 12.04 | 73.4 | 833.2 | 251.9 | 14.4 | 5.8 | 3.0 | 2.4 | 0.3 | 0.2 | 0.2 | 0.8 |
| 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 |
| 10-505 | 0.10 | 7.85 | 9.7 | 110.0 | 33.3 | 1.9 | 0.8 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-510 | 0.51 | 62.36 | 391.6 | 4,445.1 | 1,344.1 | 76.8 | 31.1 | 16.1 | 12.6 | 1.5 | 0.9 | 1.1 | 4.4 |
| 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 |
| 10-530 | 0.45 | 116.15 | 646.4 | 7,337.4 | 2,218.7 | 126.8 | 51.4 | 26.5 | 20.7 | 2.5 | 1.4 | 1.7 | 7.3 |
| 10-540 | 0.12 | 53.9 | 78.8 | 894.5 | 270.5 | 15.5 | 6.3 | 3.2 | 2.5 | 0.3 | 0.2 | 0.2 | 0.9 |
| 10-550 | 0.46 | 25.83 | 146.7 | 1,664.8 | 503.4 | 28.8 | 11.7 | 6.0 | 4.7 | 0.6 | 0.3 | 0.4 | 1.7 |
| 10-560A/B | 0.44 | 600.63 | 3,244.1 | 36,824.7 | 11,135.1 | 636.5 | 257.8 | 133.1 | 104.0 | 12.5 | 7.2 | 8.7 | 36.6 |
| 10-570A | 0.54 | 14.64 | 98.3 | 1,115.6 | 337.4 | 19.3 | 7.8 | 4.0 | 3.2 | 0.4 | 0.2 | 0.3 | 1.1 |
| 10-570B | 0.44 | 228.18 | 1,229.7 | 13,958.5 | 4,220.8 | 241.3 | 97.7 | 50.5 | 39.4 | 4.7 | 2.7 | 3.3 | 13.9 |
| 10-580 | 0.45 | 73.39 | 406.7 | 4,616.2 | 1,395.8 | 79.8 | 32.3 | 16.7 | 13.0 | 1.6 | 0.9 | 1.1 | 4.6 |
| 10-600 | 0.48 | 89.24 | 532.8 | 6,048.0 | 1,828.8 | 104.5 | 42.3 | 21.9 | 17.1 | 2.0 | 1.2 | 1.4 | 6.0 |
| 10-610 | 0.46 | 25.6 | 144.9 | 1,644.4 | 497.2 | 28.4 | 11.5 | 5.9 | 4.6 | 0.6 | 0.3 | 0.4 | 1.6 |
| 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 |
| 10-630A | 0.10 | 6.24 | 7.7 | 87.4 | 26.4 | 1.5 | 0.6 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10-630B | 0.45 | 4.68 | 26.0 | 295.1 | 89.2 | 5.1 | 2.1 | 1.1 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 10-630C | 0.48 | 96.03 | 572.8 | 6,501.9 | 1,966.0 | 112.4 | 45.5 | 23.5 | 18.4 | 2.2 | 1.3 | 1.5 | 6.5 |
| 10-630D | 0.45 | 6.37 | 35.4 | 401.7 | 121.5 | 6.9 | 2.8 | 1.5 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 10-630E | 0.45 | 8.52 | 47.3 | 537.3 | 162.5 | 9.3 | 3.8 | 1.9 | 1.5 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-630F | 0.54 | 17.56 | 117.1 | 1,329.5 | 402.0 | 23.0 | 9.3 | 4.8 | 3.8 | 0.4 | 0.3 | 0.3 | 1.3 |
| 10-630G | 0.45 | 5.9 | 32.8 | 372.1 | 112.5 | 6.4 | 2.6 | 1.3 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 10-630H | 0.30 | 25.63 | 95.8 | 1,087.8 | 328.9 | 18.8 | 7.6 | 3.9 | 3.1 | 0.4 | 0.2 | 0.3 | 1.1 |
| 10-630I | 0.47 | 12.48 | 71.6 | 813.3 | 245.9 | 14.1 | 5.7 | 2.9 | 2.3 | 0.3 | 0.2 | 0.2 | 0.8 |
| 10-630J | 0.55 | 14.69 | 100.4 | 1,139.8 | 344.7 | 19.7 | 8.0 | 4.1 | 3.2 | 0.4 | 0.2 | 0.3 | 1.1 |
| 10-630K | 0.47 | 95.29 | 556.8 | 6,320.3 | 1,911.1 | 109.3 | 44.2 | 22.8 | 17.8 | 2.1 | 1.2 | 1.5 | 6.3 |
| 10-630L | 0.52 | 100.42 | 645.9 | 7,332.0 | 2,217.0 | 126.7 | 51.3 | 26.5 | 20.7 | 2.5 | 1.4 | 1.7 | 7.3 |
| 10-630M | 0.50 | 11.71 | 71.8 | 814.8 | 246.4 | 14.1 | 5.7 | 2.9 | 2.3 | 0.3 | 0.2 | 0.2 | 0.8 |
| 10-630N | 0.45 | 8.45 | 46.9 | 532.9 | 161.1 | 9.2 | 3.7 | 1.9 | 1.5 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-630O | 0.36 | 5.77 | 25.9 | 294.4 | 89.0 | 5.1 | 2.1 | 1.1 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |

# 2006 SPRING POLLUTANT LOADINGS BY OUTFALL

**2006 SPRING POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (04/01/06 - 05/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spring Median Event Mean Concentration | | | 18.5 | 210 | 64 | 3.63 | 1.470 | 0.759 | 0.593 | 0.071 | 0.041 | 0.0497 | 0.209 |
| Precipitation (meters) | 0.194 | | | | | | | | | | | | |
| 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 |
| 10-630R | 0.33 | 83.89 | 345.9 | 3,926.4 | 1,187.3 | 67.9 | 27.5 | 14.2 | 11.1 | 1.3 | 0.8 | 0.9 | 3.9 |
| 10-630S | 0.22 | 37.02 | 99.4 | 1,127.8 | 341.0 | 19.5 | 7.9 | 4.1 | 3.2 | 0.4 | 0.2 | 0.3 | 1.1 |
| 10-630T | 0.56 | 7.72 | 53.6 | 608.6 | 184.0 | 10.5 | 4.3 | 2.2 | 1.7 | 0.2 | 0.1 | 0.1 | 0.6 |
| 10-630U | 0.52 | 115.42 | 745.4 | 8,461.0 | 2,558.4 | 146.3 | 59.2 | 30.6 | 23.9 | 2.9 | 1.7 | 2.0 | 8.4 |
| 10-630V | 0.11 | 33.85 | 44.1 | 500.9 | 151.5 | 8.7 | 3.5 | 1.8 | 1.4 | 0.2 | 0.1 | 0.1 | 0.5 |
| 10-630W | 0.47 | 23.68 | 138.5 | 1,572.0 | 475.3 | 27.2 | 11.0 | 5.7 | 4.4 | 0.5 | 0.3 | 0.4 | 1.6 |
| 10-630X | 0.44 | 14.78 | 80.7 | 916.3 | 277.1 | 15.8 | 6.4 | 3.3 | 2.6 | 0.3 | 0.2 | 0.2 | 0.9 |
| 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 |
| 10-630Z | 0.47 | 45.66 | 265.4 | 3,012.5 | 910.9 | 52.1 | 21.1 | 10.9 | 8.5 | 1.0 | 0.6 | 0.7 | 3.0 |
| 10-640 | 0.46 | 258.18 | 1,457.8 | 16,547.7 | 5,003.7 | 286.0 | 115.8 | 59.8 | 46.7 | 5.6 | 3.2 | 3.9 | 16.5 |
| 10-650 | 0.56 | 19.53 | 134.3 | 1,524.5 | 461.0 | 26.4 | 10.7 | 5.5 | 4.3 | 0.5 | 0.3 | 0.4 | 1.5 |
| 10-660 | 0.46 | 306.37 | 1,752.2 | 19,889.7 | 6,014.3 | 343.8 | 139.2 | 71.9 | 56.2 | 6.7 | 3.9 | 4.7 | 19.8 |
| 10-670 | 0.45 | 137.88 | 764.9 | 8,682.4 | 2,625.4 | 150.1 | 60.8 | 31.4 | 24.5 | 2.9 | 1.7 | 2.1 | 8.6 |
| 10-680 | 0.46 | 707.95 | 4,007.5 | 45,490.2 | 13,755.4 | 786.3 | 318.4 | 164.4 | 128.5 | 15.4 | 8.9 | 10.8 | 45.3 |
| 10-690 | 0.50 | 70.63 | 436.2 | 4,951.8 | 1,497.3 | 85.6 | 34.7 | 17.9 | 14.0 | 1.7 | 1.0 | 1.2 | 4.9 |
| 10-700 | 0.46 | 222.07 | 1,273.1 | 14,451.2 | 4,369.8 | 249.8 | 101.2 | 52.2 | 40.8 | 4.9 | 2.8 | 3.4 | 14.4 |
| 10-710 | 0.33 | 29.95 | 123.2 | 1,398.2 | 422.8 | 24.2 | 9.8 | 5.1 | 3.9 | 0.5 | 0.3 | 0.3 | 1.4 |
| 10-720A | 0.44 | 15.77 | 86.3 | 980.0 | 296.3 | 16.9 | 6.9 | 3.5 | 2.8 | 0.3 | 0.2 | 0.2 | 1.0 |
| 10-720B | 0.48 | 422.18 | 2,511.1 | 28,504.2 | 8,619.1 | 492.7 | 199.5 | 103.0 | 80.5 | 9.6 | 5.6 | 6.7 | 28.4 |
| 10-720C | 0.43 | 26.35 | 139.7 | 1,585.6 | 479.5 | 27.4 | 11.1 | 5.7 | 4.5 | 0.5 | 0.3 | 0.4 | 1.6 |
| 10-720D | 0.46 | 22.95 | 129.0 | 1,464.2 | 442.8 | 25.3 | 10.2 | 5.3 | 4.1 | 0.5 | 0.3 | 0.3 | 1.5 |
| 10-720E | 0.46 | 18.39 | 103.5 | 1,174.5 | 355.1 | 20.3 | 8.2 | 4.2 | 3.3 | 0.4 | 0.2 | 0.3 | 1.2 |
| 10-720F | 0.48 | 317.75 | 1,882.2 | 21,365.7 | 6,460.6 | 369.3 | 149.6 | 77.2 | 60.3 | 7.2 | 4.2 | 5.1 | 21.3 |
| 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 |
| 10-720H | 0.45 | 4.55 | 25.3 | 286.9 | 86.8 | 5.0 | 2.0 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 10-720I | 0.45 | 87.27 | 480.5 | 5,454.0 | 1,649.2 | 94.3 | 38.2 | 19.7 | 15.4 | 1.8 | 1.1 | 1.3 | 5.4 |
| 10-720J | 0.36 | 3.71 | 16.4 | 185.7 | 56.2 | 3.2 | 1.3 | 0.7 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 10-720K | 0.55 | 32.76 | 222.1 | 2,520.9 | 762.3 | 43.6 | 17.6 | 9.1 | 7.1 | 0.9 | 0.5 | 0.6 | 2.5 |
| 10-720L | 0.45 | 4.57 | 25.4 | 288.2 | 87.1 | 5.0 | 2.0 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 20-010 | 0.42 | 93.99 | 487.1 | 5,529.6 | 1,672.0 | 95.6 | 38.7 | 20.0 | 15.6 | 1.9 | 1.1 | 1.3 | 5.5 |
| 20-020 | 0.44 | 15.09 | 81.7 | 927.6 | 280.5 | 16.0 | 6.5 | 3.4 | 2.6 | 0.3 | 0.2 | 0.2 | 0.9 |
| 20-030 | 0.45 | 7.95 | 44.2 | 501.4 | 151.6 | 8.7 | 3.5 | 1.8 | 1.4 | 0.2 | 0.1 | 0.1 | 0.5 |
| 20-040 | 0.37 | 6.79 | 31.3 | 354.8 | 107.3 | 6.1 | 2.5 | 1.3 | 1.0 | 0.1 | 0.1 | 0.1 | 0.4 |
| 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 |
| 20-060 | 0.45 | 5.91 | 32.8 | 372.7 | 112.7 | 6.4 | 2.6 | 1.3 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 20-070 | 0.44 | 39.07 | 213.9 | 2,427.7 | 734.1 | 42.0 | 17.0 | 8.8 | 6.9 | 0.8 | 0.5 | 0.6 | 2.4 |
| 20-080 | 0.45 | 33.72 | 188.7 | 2,142.5 | 647.9 | 37.0 | 15.0 | 7.7 | 6.1 | 0.7 | 0.4 | 0.5 | 2.1 |
| 20-090 | 0.55 | 9.95 | 67.9 | 770.8 | 233.1 | 13.3 | 5.4 | 2.8 | 2.2 | 0.3 | 0.2 | 0.2 | 0.8 |
| 20-100 | 0.10 | 0.99 | 1.2 | 13.9 | 4.2 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-110 | 0.24 | 216.04 | 639.9 | 7,263.8 | 2,196.4 | 125.6 | 50.8 | 26.3 | 20.5 | 2.5 | 1.4 | 1.7 | 7.2 |
| 20-120 | 0.47 | 10.22 | 59.0 | 669.5 | 202.4 | 11.6 | 4.7 | 2.4 | 1.9 | 0.2 | 0.1 | 0.2 | 0.7 |
| 20-130 | 0.45 | 16.12 | 89.6 | 1,016.6 | 307.4 | 17.6 | 7.1 | 3.7 | 2.9 | 0.3 | 0.2 | 0.2 | 1.0 |
| 20-140 | 0.44 | 2.97 | 16.2 | 183.7 | 55.5 | 3.2 | 1.3 | 0.7 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 20-150 | 0.45 | 14.48 | 80.4 | 913.2 | 276.1 | 15.8 | 6.4 | 3.3 | 2.6 | 0.3 | 0.2 | 0.2 | 0.9 |
| 20-160 | 0.54 | 3.21 | 21.4 | 243.1 | 73.5 | 4.2 | 1.7 | 0.9 | 0.7 | 0.1 | 0.0 | 0.1 | 0.2 |
| 20-170 | 0.37 | 4.94 | 22.7 | 257.9 | 78.0 | 4.5 | 1.8 | 0.9 | 0.7 | 0.1 | 0.1 | 0.1 | 0.3 |
| 20-180 | 0.51 | 5.3 | 33.1 | 375.9 | 113.7 | 6.5 | 2.6 | 1.4 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 20-190 | 0.45 | 1.35 | 7.5 | 85.1 | 25.7 | 1.5 | 0.6 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 20-200 | 0.45 | 13.84 | 76.9 | 872.8 | 263.9 | 15.1 | 6.1 | 3.2 | 2.5 | 0.3 | 0.2 | 0.2 | 0.9 |
| 20-210A | 0.44 | 92.9 | 503.8 | 5,718.9 | 1,729.3 | 98.9 | 40.0 | 20.7 | 16.1 | 1.9 | 1.1 | 1.4 | 5.7 |
| 20-210B | 0.50 | 620.78 | 3,866.9 | 43,894.6 | 13,272.9 | 758.7 | 307.3 | 158.6 | 123.9 | 14.8 | 8.6 | 10.4 | 43.7 |
| 20-220 | 0.46 | 26.38 | 150.1 | 1,704.4 | 515.4 | 29.5 | 11.9 | 6.2 | 4.8 | 0.6 | 0.3 | 0.4 | 1.7 |
| 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 |
| 20-240 | 0.48 | 30.06 | 178.8 | 2,029.6 | 613.7 | 35.1 | 14.2 | 7.3 | 5.7 | 0.7 | 0.4 | 0.5 | 2.0 |
| 20-250 | 0.57 | 6.28 | 44.3 | 503.2 | 152.1 | 8.7 | 3.5 | 1.8 | 1.4 | 0.2 | 0.1 | 0.1 | 0.5 |
| 20-260 | 0.60 | 3.5 | 25.9 | 294.3 | 89.0 | 5.1 | 2.1 | 1.1 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 20-270 | 0.48 | 42.81 | 252.0 | 2,860.0 | 864.8 | 49.4 | 20.0 | 10.3 | 8.1 | 1.0 | 0.6 | 0.7 | 2.8 |
| 20-280 | 0.54 | 8.98 | 59.6 | 676.4 | 204.5 | 11.7 | 4.7 | 2.4 | 1.9 | 0.2 | 0.1 | 0.2 | 0.7 |
| 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 |
| 21-010 | 0.45 | 49.49 | 273.9 | 3,108.9 | 940.1 | 53.7 | 21.8 | 11.2 | 8.8 | 1.1 | 0.6 | 0.7 | 3.1 |
| 40-010 | 0.45 | 719.17 | 3,978.7 | 45,163.1 | 13,656.5 | 780.7 | 316.1 | 163.2 | 127.5 | 15.3 | 8.8 | 10.7 | 44.9 |
| 40-020 | 0.45 | 15.36 | 85.3 | 968.6 | 292.9 | 16.7 | 6.8 | 3.5 | 2.7 | 0.3 | 0.2 | 0.2 | 1.0 |
| 40-030 | 0.42 | 51.02 | 263.1 | 2,986.9 | 903.2 | 51.6 | 20.9 | 10.8 | 8.4 | 1.0 | 0.6 | 0.7 | 3.0 |
| 40-040 | 0.43 | 65.39 | 350.5 | 3,978.9 | 1,203.1 | 68.8 | 27.9 | 14.4 | 11.2 | 1.3 | 0.8 | 0.9 | 4.0 |
| 40-050 | 0.45 | 10.28 | 57.1 | 648.3 | 196.0 | 11.2 | 4.5 | 2.3 | 1.8 | 0.2 | 0.1 | 0.2 | 0.6 |
| 40-060 | 0.45 | 3.2 | 17.8 | 201.8 | 61.0 | 3.5 | 1.4 | 0.7 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 40-070 | 0.38 | 7.98 | 37.3 | 423.1 | 127.9 | 7.3 | 3.0 | 1.5 | 1.2 | 0.1 | 0.1 | 0.1 | 0.4 |
| 40-080 | 0.41 | 60.51 | 305.1 | 3,463.1 | 1,047.2 | 59.9 | 24.2 | 12.5 | 9.8 | 1.2 | 0.7 | 0.8 | 3.4 |
| 40-090 | 0.46 | 20.65 | 118.5 | 1,345.3 | 406.8 | 23.3 | 9.4 | 4.9 | 3.8 | 0.5 | 0.3 | 0.3 | 1.3 |
| 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 |
| 40-110 | 0.44 | 2.61 | 14.3 | 162.3 | 49.1 | 2.8 | 1.1 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 40-120 | 0.44 | 65.87 | 356.4 | 4,045.7 | 1,223.4 | 69.9 | 28.3 | 14.6 | 11.4 | 1.4 | 0.8 | 1.0 | 4.0 |
| 40-130 | 0.45 | 35.01 | 195.3 | 2,217.0 | 670.4 | 38.3 | 15.5 | 8.0 | 6.3 | 0.7 | 0.4 | 0.5 | 2.2 |
| 40-140 | 0.35 | 125.46 | 538.6 | 6,113.8 | 1,848.7 | 105.7 | 42.8 | 22.1 | 17.3 | 2.1 | 1.2 | 1.4 | 6.1 |
| 40-150 | 0.47 | 24.31 | 142.2 | 1,613.9 | 488.0 | 27.9 | 11.3 | 5.8 | 4.6 | 0.5 | 0.3 | 0.4 | 1.6 |
| 40-160 | 0.49 | 30.99 | 189.1 | 2,147.0 | 649.2 | 37.1 | 15.0 | 7.8 | 6.1 | 0.7 | 0.4 | 0.5 | 2.1 |

# 2006 SPRING POLLUTANT LOADINGS BY OUTFALL

**2006 SPRING POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (04/01/06 - 05/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spring Median Event Mean Concentration | | | 18.5 | 210 | 64 | 3.63 | 1.470 | 0.759 | 0.593 | 0.071 | 0.041 | 0.0497 | 0.209 |
| Precipitation (meters) | 0.194 | | | | | | | | | | | | |
| 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 |
| 40-180 | 0.54 | 16.8 | 111.7 | 1,267.5 | 383.3 | 21.9 | 8.9 | 4.6 | 3.6 | 0.4 | 0.2 | 0.3 | 1.3 |
| 40-190 | 0.53 | 65.53 | 427.8 | 4,855.9 | 1,468.3 | 83.9 | 34.0 | 17.6 | 13.7 | 1.6 | 0.9 | 1.1 | 4.8 |
| 40-200 | 0.46 | 24.75 | 141.3 | 1,603.5 | 484.9 | 27.7 | 11.2 | 5.8 | 4.5 | 0.5 | 0.3 | 0.4 | 1.6 |
| 40-210 | 0.54 | 17.26 | 116.1 | 1,317.9 | 398.5 | 22.8 | 9.2 | 4.8 | 3.7 | 0.4 | 0.3 | 0.3 | 1.3 |
| 40-220 | 0.47 | 100.58 | 580.5 | 6,589.3 | 1,992.5 | 113.9 | 46.1 | 23.8 | 18.6 | 2.2 | 1.3 | 1.6 | 6.6 |
| 40-230 | 0.44 | 13.78 | 75.7 | 859.0 | 259.8 | 14.8 | 6.0 | 3.1 | 2.4 | 0.3 | 0.2 | 0.2 | 0.9 |
| 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 |
| 40-250 | 0.60 | 1.15 | 8.5 | 96.7 | 29.2 | 1.7 | 0.7 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 40-260 | 0.45 | 3.49 | 19.4 | 220.1 | 66.6 | 3.8 | 1.5 | 0.8 | 0.6 | 0.1 | 0.0 | 0.1 | 0.2 |
| 40-270 | 0.45 | 9.59 | 53.3 | 604.8 | 182.9 | 10.5 | 4.2 | 2.2 | 1.7 | 0.2 | 0.1 | 0.1 | 0.6 |
| 40-280 | 0.53 | 12.76 | 82.8 | 940.4 | 284.4 | 16.3 | 6.6 | 3.4 | 2.7 | 0.3 | 0.2 | 0.2 | 0.9 |
| 40-290 | 0.51 | 13.73 | 86.8 | 985.2 | 297.9 | 17.0 | 6.9 | 3.6 | 2.8 | 0.3 | 0.2 | 0.2 | 1.0 |
| 40-300 | 0.52 | 10.38 | 66.8 | 757.9 | 229.2 | 13.1 | 5.3 | 2.7 | 2.1 | 0.3 | 0.1 | 0.2 | 0.8 |
| 40-310 | 0.45 | 97.86 | 546.9 | 6,207.6 | 1,877.1 | 107.3 | 43.5 | 22.4 | 17.5 | 2.1 | 1.2 | 1.5 | 6.2 |
| 40-320 | 0.60 | 9.43 | 69.9 | 792.9 | 239.8 | 13.7 | 5.6 | 2.9 | 2.2 | 0.3 | 0.2 | 0.2 | 0.8 |
| 40-330 | 0.59 | 15.34 | 112.2 | 1,274.1 | 385.3 | 22.0 | 8.9 | 4.6 | 3.6 | 0.4 | 0.2 | 0.3 | 1.3 |
| 40-340 | 0.53 | 35.27 | 232.1 | 2,634.1 | 796.5 | 45.5 | 18.4 | 9.5 | 7.4 | 0.9 | 0.5 | 0.6 | 2.6 |
| 40-350 | 0.60 | 8.99 | 66.6 | 755.9 | 228.6 | 13.1 | 5.3 | 2.7 | 2.1 | 0.3 | 0.1 | 0.2 | 0.8 |
| 40-360 | 0.60 | 8.09 | 59.9 | 680.2 | 205.7 | 11.8 | 4.8 | 2.5 | 1.9 | 0.2 | 0.1 | 0.2 | 0.7 |
| 40-370 | 0.58 | 12.41 | 88.6 | 1,006.0 | 304.2 | 17.4 | 7.0 | 3.6 | 2.8 | 0.3 | 0.2 | 0.2 | 1.0 |
| 40-380 | 0.39 | 24.92 | 121.0 | 1,374.0 | 415.5 | 23.7 | 9.6 | 5.0 | 3.9 | 0.5 | 0.3 | 0.3 | 1.4 |
| 40-390 | 0.58 | 5.72 | 41.0 | 464.9 | 140.6 | 8.0 | 3.3 | 1.7 | 1.3 | 0.2 | 0.1 | 0.1 | 0.5 |
| 40-400 | 0.10 | 1.07 | 1.3 | 15.0 | 4.5 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 41-010 | 0.38 | 94.73 | 441.4 | 5,010.8 | 1,515.2 | 86.6 | 35.1 | 18.1 | 14.1 | 1.7 | 1.0 | 1.2 | 5.0 |
| 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 |
| 41-030 | 0.50 | 60.47 | 374.8 | 4,253.9 | 1,286.3 | 73.5 | 29.8 | 15.4 | 12.0 | 1.4 | 0.8 | 1.0 | 4.2 |
| 41-040 | 0.57 | 35.59 | 251.8 | 2,857.9 | 864.2 | 49.4 | 20.0 | 10.3 | 8.1 | 1.0 | 0.6 | 0.7 | 2.8 |
| 41-050 | 0.60 | 10.48 | 77.6 | 881.2 | 266.5 | 15.2 | 6.2 | 3.2 | 2.5 | 0.3 | 0.2 | 0.2 | 0.9 |
| 41-060 | 0.60 | 2.95 | 21.9 | 248.0 | 75.0 | 4.3 | 1.7 | 0.9 | 0.7 | 0.1 | 0.0 | 0.1 | 0.2 |
| 51-010 | 0.45 | 29.63 | 165.1 | 1,874.1 | 566.7 | 32.4 | 13.1 | 6.8 | 5.3 | 0.6 | 0.4 | 0.4 | 1.9 |
| 51-020 | 0.45 | 4.55 | 25.3 | 286.9 | 86.8 | 5.0 | 2.0 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 52-010 | 0.28 | 45.29 | 154.5 | 1,754.0 | 530.4 | 30.3 | 12.3 | 6.3 | 5.0 | 0.6 | 0.3 | 0.4 | 1.7 |
| 52-020 | 0.45 | 6.09 | 33.8 | 384.1 | 116.1 | 6.6 | 2.7 | 1.4 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 52-030 | 0.45 | 7.18 | 39.9 | 452.8 | 136.9 | 7.8 | 3.2 | 1.6 | 1.3 | 0.2 | 0.1 | 0.1 | 0.5 |
| 52-040 | 0.41 | 4.54 | 23.2 | 263.0 | 79.5 | 4.5 | 1.8 | 1.0 | 0.7 | 0.1 | 0.1 | 0.1 | 0.3 |
| 52-050 | 0.44 | 15.3 | 82.2 | 932.7 | 282.0 | 16.1 | 6.5 | 3.4 | 2.6 | 0.3 | 0.2 | 0.2 | 0.9 |
| 52-060 | 0.10 | 3.22 | 4.0 | 45.1 | 13.6 | 0.8 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52-070 | 0.42 | 86.94 | 454.2 | 5,155.9 | 1,559.1 | 89.1 | 36.1 | 18.6 | 14.6 | 1.7 | 1.0 | 1.2 | 5.1 |
| 52-080 | 0.24 | 8.08 | 24.1 | 274.1 | 82.9 | 4.7 | 1.9 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 52-090 | 0.45 | 4.89 | 27.2 | 308.4 | 93.2 | 5.3 | 2.2 | 1.1 | 0.9 | 0.1 | 0.1 | 0.1 | 0.3 |
| 52-100A/B | 0.27 | 11.89 | 39.1 | 444.3 | 134.3 | 7.7 | 3.1 | 1.6 | 1.3 | 0.2 | 0.1 | 0.1 | 0.4 |
| 52-110 | 0.45 | 8.84 | 48.7 | 553.0 | 167.2 | 9.6 | 3.9 | 2.0 | 1.6 | 0.2 | 0.1 | 0.1 | 0.6 |
| 52-120 | 0.45 | 14.74 | 81.9 | 929.5 | 281.1 | 16.1 | 6.5 | 3.4 | 2.6 | 0.3 | 0.2 | 0.2 | 0.9 |
| 52-130 | 0.31 | 7.18 | 27.9 | 316.7 | 95.8 | 5.5 | 2.2 | 1.1 | 0.9 | 0.1 | 0.1 | 0.1 | 0.3 |
| 53-010 | 0.45 | 7.03 | 39.1 | 443.3 | 134.1 | 7.7 | 3.1 | 1.6 | 1.3 | 0.1 | 0.1 | 0.1 | 0.4 |
| 53-020 | 0.28 | 12.38 | 42.2 | 479.5 | 145.0 | 8.3 | 3.4 | 1.7 | 1.4 | 0.2 | 0.1 | 0.1 | 0.5 |
| 53-030 | 0.44 | 11.37 | 61.3 | 696.1 | 210.5 | 12.0 | 4.9 | 2.5 | 2.0 | 0.2 | 0.1 | 0.2 | 0.7 |
| 53-040 | 0.45 | 2.78 | 15.4 | 175.3 | 53.0 | 3.0 | 1.2 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 53-050 | 0.45 | 13.66 | 75.9 | 861.4 | 260.5 | 14.9 | 6.0 | 3.1 | 2.4 | 0.3 | 0.2 | 0.2 | 0.9 |
| 53-060 | 0.45 | 20.37 | 113.2 | 1,284.6 | 388.4 | 22.2 | 9.0 | 4.6 | 3.6 | 0.4 | 0.3 | 0.3 | 1.3 |
| 53-070 | 0.45 | 4.89 | 27.2 | 308.4 | 93.2 | 5.3 | 2.2 | 1.1 | 0.9 | 0.1 | 0.1 | 0.1 | 0.3 |
| 53-080 | 0.39 | 5.81 | 28.3 | 321.0 | 97.1 | 5.5 | 2.2 | 1.2 | 0.9 | 0.1 | 0.1 | 0.1 | 0.3 |
| 53-090 | 0.46 | 59.59 | 337.8 | 3,834.5 | 1,159.5 | 66.3 | 26.8 | 13.9 | 10.8 | 1.3 | 0.7 | 0.9 | 3.8 |
| 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 |
| 53-110 | 0.38 | 4.59 | 21.8 | 247.6 | 74.9 | 4.3 | 1.7 | 0.9 | 0.7 | 0.1 | 0.0 | 0.1 | 0.2 |
| 53-120A/B | 0.46 | 129.79 | 730.1 | 8,287.1 | 2,505.9 | 143.2 | 58.0 | 30.0 | 23.4 | 2.8 | 1.6 | 2.0 | 8.2 |
| 53-130 | 0.45 | 5.02 | 27.9 | 316.6 | 95.7 | 5.5 | 2.2 | 1.1 | 0.9 | 0.1 | 0.1 | 0.1 | 0.3 |
| 53-140 | 0.45 | 6.36 | 35.3 | 401.1 | 121.3 | 6.9 | 2.8 | 1.4 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 53-150 | 0.48 | 90.4 | 540.0 | 6,129.3 | 1,853.4 | 105.9 | 42.9 | 22.2 | 17.3 | 2.1 | 1.2 | 1.5 | 6.1 |
| 53-160 | 0.47 | 252.19 | 1,472.0 | 16,708.6 | 5,052.4 | 288.8 | 117.0 | 60.4 | 47.2 | 5.6 | 3.3 | 4.0 | 16.6 |
| 53-170 | 0.36 | 6.39 | 28.5 | 323.1 | 97.7 | 5.6 | 2.3 | 1.2 | 0.9 | 0.1 | 0.1 | 0.1 | 0.3 |
| 53-180 | 0.10 | 8.09 | 10.0 | 113.4 | 34.3 | 2.0 | 0.8 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 53-190 | 0.30 | 11.41 | 42.3 | 480.5 | 145.3 | 8.3 | 3.4 | 1.7 | 1.4 | 0.2 | 0.1 | 0.1 | 0.5 |
| 54-010A/B | 0.44 | 84.93 | 456.2 | 5,178.4 | 1,565.9 | 89.5 | 36.2 | 18.7 | 14.6 | 1.8 | 1.0 | 1.2 | 5.2 |
| 54-040A/B | 0.49 | 255.14 | 1,559.0 | 17,696.8 | 5,351.2 | 305.9 | 123.9 | 64.0 | 50.0 | 6.0 | 3.5 | 4.2 | 17.6 |
| 54-050 | 0.17 | 9.27 | 19.9 | 225.9 | 68.3 | 3.9 | 1.6 | 0.8 | 0.6 | 0.1 | 0.0 | 0.1 | 0.2 |
| 54-060 | 0.44 | 32.13 | 174.2 | 1,977.9 | 598.1 | 34.2 | 13.8 | 7.1 | 5.6 | 0.7 | 0.4 | 0.5 | 2.0 |
| 54-070 | 0.36 | 60.8 | 269.2 | 3,055.3 | 923.9 | 52.8 | 21.4 | 11.0 | 8.6 | 1.0 | 0.6 | 0.7 | 3.0 |
| 54-080A/B/C | 0.46 | 414.26 | 2,337.7 | 26,536.1 | 8,024.0 | 458.7 | 185.8 | 95.9 | 74.9 | 9.0 | 5.2 | 6.3 | 26.4 |
| 54-090 | 0.10 | 3.55 | 4.4 | 49.7 | 15.0 | 0.9 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-100A/B | 0.60 | 114.24 | 840.2 | 9,536.9 | 2,883.8 | 164.9 | 66.8 | 34.5 | 26.9 | 3.2 | 1.9 | 2.3 | 9.5 |
| 54-110 | 0.45 | 24.55 | 136.4 | 1,548.2 | 468.1 | 26.8 | 10.8 | 5.6 | 4.4 | 0.5 | 0.3 | 0.4 | 1.5 |
| 54-120 | 0.46 | 62.08 | 350.2 | 3,975.4 | 1,202.1 | 68.7 | 27.8 | 14.4 | 11.2 | 1.3 | 0.8 | 0.9 | 4.0 |
| 54-130 | 0.10 | 1.07 | 1.3 | 15.0 | 4.5 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-140A/B | 0.41 | 113.01 | 569.1 | 6,460.5 | 1,953.5 | 111.7 | 45.2 | 23.4 | 18.2 | 2.2 | 1.3 | 1.5 | 6.4 |
| 54-150 | 0.45 | 55.34 | 304.3 | 3,453.7 | 1,044.3 | 59.7 | 24.2 | 12.5 | 9.8 | 1.2 | 0.7 | 0.8 | 3.4 |

# 2006 SPRING POLLUTANT LOADINGS BY OUTFALL

**2006 SPRING POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (04/01/06 - 05/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spring Median Event Mean Concentration | | | 18.5 | 210 | 64 | 3.63 | 1.470 | 0.759 | 0.593 | 0.071 | 0.041 | 0.0497 | 0.209 |
| Precipitation (meters) | 0.194 | | | | | | | | | | | | |
| 54-160 | 0.60 | 2.62 | 19.4 | 220.3 | 66.6 | 3.8 | 1.5 | 0.8 | 0.6 | 0.1 | 0.0 | 0.1 | 0.2 |
| 54-170 | 0.59 | 8.08 | 59.3 | 673.3 | 203.6 | 11.6 | 4.7 | 2.4 | 1.9 | 0.2 | 0.1 | 0.2 | 0.7 |
| 54-180 | 0.60 | 2.82 | 20.9 | 237.1 | 71.7 | 4.1 | 1.7 | 0.9 | 0.7 | 0.1 | 0.0 | 0.1 | 0.2 |
| 54-190 | 0.10 | 2.2 | 2.7 | 30.8 | 9.3 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-200 | 0.10 | 2.13 | 2.6 | 29.8 | 9.0 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-210 | 0.10 | 1.14 | 1.4 | 16.0 | 4.8 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 55-010 | 0.60 | 14.98 | 111.0 | 1,259.6 | 380.9 | 21.8 | 8.8 | 4.6 | 3.6 | 0.4 | 0.2 | 0.3 | 1.3 |
| 55-020 | 0.60 | 189.58 | 1,395.2 | 15,837.0 | 4,788.8 | 273.8 | 110.9 | 57.2 | 44.7 | 5.4 | 3.1 | 3.7 | 15.8 |
| 56-010 | 0.60 | 67.62 | 500.9 | 5,685.8 | 1,719.3 | 98.3 | 39.8 | 20.5 | 16.1 | 1.9 | 1.1 | 1.3 | 5.7 |
| 57-010 | 0.53 | 26.1 | 171.9 | 1,951.2 | 590.0 | 33.7 | 13.7 | 7.1 | 5.5 | 0.7 | 0.4 | 0.5 | 1.9 |
| 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 |
| 57-030 | 0.45 | 18.22 | 101.2 | 1,149.0 | 347.4 | 19.9 | 8.0 | 4.2 | 3.2 | 0.4 | 0.2 | 0.3 | 1.1 |
| 57-040 | 0.35 | 39.88 | 171.8 | 1,950.2 | 589.7 | 33.7 | 13.7 | 7.0 | 5.5 | 0.7 | 0.4 | 0.5 | 1.9 |
| 57-050 | 0.45 | 7.9 | 43.9 | 498.2 | 150.6 | 8.6 | 3.5 | 1.8 | 1.4 | 0.2 | 0.1 | 0.1 | 0.5 |
| 57-060 | 0.46 | 26.11 | 149.1 | 1,692.1 | 511.7 | 29.2 | 11.8 | 6.1 | 4.8 | 0.6 | 0.3 | 0.4 | 1.7 |
| 57-070 | 0.45 | 81.33 | 452.9 | 5,141.2 | 1,554.6 | 88.9 | 36.0 | 18.6 | 14.5 | 1.7 | 1.0 | 1.2 | 5.1 |
| 57-080 | 0.42 | 5.54 | 28.9 | 328.2 | 99.2 | 5.7 | 2.3 | 1.2 | 0.9 | 0.1 | 0.1 | 0.1 | 0.3 |
| 57-090 | 0.47 | 77.77 | 450.6 | 5,114.8 | 1,546.6 | 88.4 | 35.8 | 18.5 | 14.4 | 1.7 | 1.0 | 1.2 | 5.1 |
| 57-100A/B | 0.47 | 313.43 | 1,828.0 | 20,750.2 | 6,274.5 | 358.7 | 145.3 | 75.0 | 58.6 | 7.0 | 4.1 | 4.9 | 20.7 |
| 57-110 | 0.54 | 21.6 | 144.2 | 1,637.0 | 495.0 | 28.3 | 11.5 | 5.9 | 4.6 | 0.6 | 0.3 | 0.4 | 1.6 |
| 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 |
| 57-130 | 0.10 | 1.16 | 1.4 | 16.3 | 4.9 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57-140 | 0.10 | 1.55 | 1.9 | 21.7 | 6.6 | 0.4 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57-150 | 0.43 | 35.68 | 190.1 | 2,158.1 | 652.6 | 37.3 | 15.1 | 7.8 | 6.1 | 0.7 | 0.4 | 0.5 | 2.1 |
| 57-160 | 0.10 | 1.89 | 2.3 | 26.5 | 8.0 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 61-010 | 0.55 | 2.86 | 19.5 | 221.1 | 66.9 | 3.8 | 1.5 | 0.8 | 0.6 | 0.1 | 0.0 | 0.1 | 0.2 |
| 62-010 | 0.45 | 27.84 | 155.4 | 1,763.8 | 533.3 | 30.5 | 12.3 | 6.4 | 5.0 | 0.6 | 0.3 | 0.4 | 1.8 |
| 63-010 | 0.45 | 388.79 | 2,170.2 | 24,634.3 | 7,449.0 | 425.8 | 172.4 | 89.0 | 69.6 | 8.3 | 4.8 | 5.8 | 24.5 |
| 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 |
| 64-100 | 0.45 | 24.92 | 138.3 | 1,570.1 | 474.8 | 27.1 | 11.0 | 5.7 | 4.4 | 0.5 | 0.3 | 0.4 | 1.6 |
| 64-110 | 0.45 | 6.01 | 33.4 | 379.0 | 114.6 | 6.6 | 2.7 | 1.4 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 64-120 | 0.45 | 16.04 | 89.1 | 1,011.5 | 305.9 | 17.5 | 7.1 | 3.7 | 2.9 | 0.3 | 0.2 | 0.2 | 1.0 |
| 64-130 | 0.45 | 2.44 | 13.6 | 153.9 | 46.5 | 2.7 | 1.1 | 0.6 | 0.4 | 0.1 | 0.0 | 0.0 | 0.2 |
| 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 |
| 65-020 | 0.53 | 38.46 | 251.3 | 2,852.1 | 862.4 | 49.3 | 20.0 | 10.3 | 8.1 | 1.0 | 0.6 | 0.7 | 2.8 |
| 70-010 | 0.46 | 6.23 | 35.3 | 400.4 | 121.1 | 6.9 | 2.8 | 1.4 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-015 | 0.45 | 11.69 | 64.9 | 737.2 | 222.9 | 12.7 | 5.2 | 2.7 | 2.1 | 0.2 | 0.1 | 0.2 | 0.7 |
| 70-020 | 0.45 | 37.55 | 208.6 | 2,368.0 | 716.0 | 40.9 | 16.6 | 8.6 | 6.7 | 0.8 | 0.5 | 0.6 | 2.4 |
| 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 |
| 70-030 | 0.45 | 13.48 | 74.8 | 849.4 | 256.9 | 14.7 | 5.9 | 3.1 | 2.4 | 0.3 | 0.2 | 0.2 | 0.8 |
| 70-035 | 0.45 | 4.53 | 25.2 | 285.7 | 86.4 | 4.9 | 2.0 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 70-040 | 0.45 | 2.42 | 13.4 | 152.6 | 46.1 | 2.6 | 1.1 | 0.6 | 0.4 | 0.1 | 0.0 | 0.0 | 0.2 |
| 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 |
| 70-050 | 0.45 | 17.41 | 96.7 | 1,097.9 | 332.0 | 19.0 | 7.7 | 4.0 | 3.1 | 0.4 | 0.2 | 0.3 | 1.1 |
| 70-055 | 0.46 | 333.43 | 1,910.5 | 21,686.7 | 6,557.6 | 374.9 | 151.8 | 78.4 | 61.2 | 7.3 | 4.2 | 5.1 | 21.6 |
| 70-060 | 0.45 | 3.53 | 19.6 | 222.6 | 67.3 | 3.8 | 1.6 | 0.8 | 0.6 | 0.1 | 0.0 | 0.1 | 0.2 |
| 70-065 | 0.45 | 1.89 | 10.5 | 119.2 | 36.0 | 2.1 | 0.8 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-070 | 0.45 | 5.8 | 32.2 | 365.8 | 110.6 | 6.3 | 2.6 | 1.3 | 1.0 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-075 | 0.43 | 5 | 26.6 | 302.3 | 91.4 | 5.2 | 2.1 | 1.1 | 0.9 | 0.1 | 0.1 | 0.1 | 0.3 |
| 70-080 | 0.46 | 11.96 | 68.2 | 774.3 | 234.1 | 13.4 | 5.4 | 2.8 | 2.2 | 0.3 | 0.2 | 0.2 | 0.8 |
| 70-085 | 0.45 | 229.48 | 1,267.1 | 14,382.8 | 4,349.1 | 248.6 | 100.7 | 52.0 | 40.6 | 4.9 | 2.8 | 3.4 | 14.3 |
| 70-090 | 0.45 | 18.57 | 103.2 | 1,171.1 | 354.1 | 20.2 | 8.2 | 4.2 | 3.3 | 0.4 | 0.2 | 0.3 | 1.2 |
| 70-095 | 0.45 | 9.99 | 55.5 | 630.0 | 190.5 | 10.9 | 4.4 | 2.3 | 1.8 | 0.2 | 0.1 | 0.1 | 0.6 |
| 70-100 | 0.45 | 9.64 | 53.6 | 607.9 | 183.8 | 10.5 | 4.3 | 2.2 | 1.7 | 0.2 | 0.1 | 0.1 | 0.6 |
| 70-105 | 0.45 | 1.63 | 9.1 | 102.8 | 31.1 | 1.8 | 0.7 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-110 | 0.45 | 18.13 | 100.7 | 1,143.3 | 345.7 | 19.8 | 8.0 | 4.1 | 3.2 | 0.4 | 0.2 | 0.3 | 1.1 |
| 70-115 | 0.45 | 3.71 | 20.6 | 234.0 | 70.7 | 4.0 | 1.6 | 0.8 | 0.7 | 0.1 | 0.0 | 0.1 | 0.2 |
| 70-120 | 0.45 | 4.22 | 23.4 | 266.1 | 80.5 | 4.6 | 1.9 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 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 |
| 70-130 | 0.49 | 34.29 | 209.0 | 2,372.4 | 717.4 | 41.0 | 16.6 | 8.6 | 6.7 | 0.8 | 0.5 | 0.6 | 2.4 |
| 70-135 | 0.45 | 7.46 | 41.4 | 470.5 | 142.3 | 8.1 | 3.3 | 1.7 | 1.3 | 0.2 | 0.1 | 0.1 | 0.5 |
| 70-140 | 0.60 | 0.78 | 5.8 | 65.6 | 19.8 | 1.1 | 0.5 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-145 | 0.60 | 9.19 | 68.1 | 772.7 | 233.7 | 13.4 | 5.4 | 2.8 | 2.2 | 0.3 | 0.2 | 0.2 | 0.8 |
| 70-150 | 0.45 | 4.51 | 25.1 | 284.4 | 86.0 | 4.9 | 2.0 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 70-155 | 0.45 | 2.05 | 11.4 | 129.3 | 39.1 | 2.2 | 0.9 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-160 | 0.45 | 2.95 | 16.4 | 186.0 | 56.3 | 3.2 | 1.3 | 0.7 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-165 | 0.45 | 27.77 | 154.3 | 1,751.3 | 529.5 | 30.3 | 12.3 | 6.3 | 4.9 | 0.6 | 0.3 | 0.4 | 1.7 |
| 70-170 | 0.45 | 23.74 | 131.9 | 1,497.1 | 452.7 | 25.9 | 10.5 | 5.4 | 4.2 | 0.5 | 0.3 | 0.4 | 1.5 |
| 70-175 | 0.46 | 30.89 | 174.4 | 1,979.3 | 598.5 | 34.2 | 13.9 | 7.2 | 5.6 | 0.7 | 0.4 | 0.5 | 2.0 |
| 70-180 | 0.45 | 1.14 | 6.3 | 71.9 | 21.7 | 1.2 | 0.5 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-185 | 0.45 | 1.53 | 8.5 | 96.5 | 29.2 | 1.7 | 0.7 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-190 | 0.17 | 15.04 | 32.0 | 362.7 | 109.7 | 6.3 | 2.5 | 1.3 | 1.0 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-195 | 0.45 | 46.02 | 257.1 | 2,918.0 | 882.3 | 50.4 | 20.4 | 10.5 | 8.2 | 1.0 | 0.6 | 0.7 | 2.9 |
| 70-200 | 0.45 | 31.52 | 175.1 | 1,987.7 | 601.1 | 34.4 | 13.9 | 7.2 | 5.6 | 0.7 | 0.4 | 0.5 | 2.0 |
| 70-205 | 0.45 | 1.39 | 7.7 | 87.7 | 26.5 | 1.5 | 0.6 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-210 | 0.45 | 3.58 | 19.9 | 225.8 | 68.3 | 3.9 | 1.6 | 0.8 | 0.6 | 0.1 | 0.0 | 0.1 | 0.2 |
| 70-215 | 0.45 | 5.93 | 32.9 | 374.0 | 113.1 | 6.5 | 2.6 | 1.4 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |

# 2006 SPRING POLLUTANT LOADINGS BY OUTFALL

**2006 SPRING POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (04/01/06 - 05/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spring Median Event Mean Concentration | | | 18.5 | 210 | 64 | 3.63 | 1.470 | 0.759 | 0.593 | 0.071 | 0.041 | 0.0497 | 0.209 |
| Precipitation (meters) | 0.194 | | | | | | | | | | | | |
| 70-220 | 0.45 | 4.54 | 25.2 | 286.3 | 86.6 | 4.9 | 2.0 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 70-225 | 0.45 | 4.99 | 27.7 | 314.7 | 95.2 | 5.4 | 2.2 | 1.1 | 0.9 | 0.1 | 0.1 | 0.1 | 0.3 |
| 70-230 | 0.45 | 4.72 | 26.2 | 297.7 | 90.0 | 5.1 | 2.1 | 1.1 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 70-235 | 0.45 | 5.04 | 28.0 | 317.8 | 96.1 | 5.5 | 2.2 | 1.1 | 0.9 | 0.1 | 0.1 | 0.1 | 0.3 |
| 70-240 | 0.45 | 4.52 | 25.1 | 285.0 | 86.2 | 4.9 | 2.0 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 70-245 | 0.44 | 9.98 | 54.1 | 613.9 | 185.6 | 10.6 | 4.3 | 2.2 | 1.7 | 0.2 | 0.1 | 0.1 | 0.6 |
| 70-250 | 0.48 | 41.27 | 245.8 | 2,789.7 | 843.6 | 48.2 | 19.5 | 10.1 | 7.9 | 0.9 | 0.5 | 0.7 | 2.8 |
| 70-255 | 0.45 | 45.37 | 252.1 | 2,862.0 | 865.4 | 49.5 | 20.0 | 10.3 | 8.1 | 1.0 | 0.6 | 0.7 | 2.8 |
| 70-260 | 0.46 | 24.9 | 140.7 | 1,597.3 | 483.0 | 27.6 | 11.2 | 5.8 | 4.5 | 0.5 | 0.3 | 0.4 | 1.6 |
| 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 |
| 70-270 | 0.45 | 4.66 | 25.9 | 293.9 | 88.9 | 5.1 | 2.1 | 1.1 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 70-275 | 0.45 | 4.28 | 23.8 | 269.9 | 81.6 | 4.7 | 1.9 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 70-280 | 0.45 | 9.39 | 52.3 | 593.2 | 179.4 | 10.3 | 4.2 | 2.1 | 1.7 | 0.2 | 0.1 | 0.1 | 0.6 |
| 70-285 | 0.45 | 19.03 | 105.6 | 1,198.8 | 362.5 | 20.7 | 8.4 | 4.3 | 3.4 | 0.4 | 0.2 | 0.3 | 1.2 |
| 70-290 | 0.45 | 2.37 | 13.1 | 148.2 | 44.8 | 2.6 | 1.0 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-295 | 0.45 | 7.18 | 39.9 | 452.8 | 136.9 | 7.8 | 3.2 | 1.6 | 1.3 | 0.2 | 0.1 | 0.1 | 0.5 |
| 70-300 | 0.10 | 0.4 | 0.5 | 5.6 | 1.7 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-305 | 0.45 | 12.68 | 69.8 | 792.5 | 239.6 | 13.7 | 5.5 | 2.9 | 2.2 | 0.3 | 0.2 | 0.2 | 0.8 |
| 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 |
| 70-315 | 0.30 | 5.79 | 21.4 | 243.4 | 73.6 | 4.2 | 1.7 | 0.9 | 0.7 | 0.1 | 0.0 | 0.1 | 0.2 |
| 70-320 | 0.44 | 2.32 | 12.6 | 142.8 | 43.2 | 2.5 | 1.0 | 0.5 | 0.4 | 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 |
| 70-330 | 0.47 | 279.41 | 1,624.9 | 18,444.5 | 5,577.3 | 318.8 | 129.1 | 66.7 | 52.1 | 6.2 | 3.6 | 4.4 | 18.4 |
| 70-335 | 0.45 | 1.99 | 11.1 | 125.5 | 37.9 | 2.2 | 0.9 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-340 | 0.39 | 22.25 | 108.1 | 1,226.8 | 370.9 | 21.2 | 8.6 | 4.4 | 3.5 | 0.4 | 0.2 | 0.3 | 1.2 |
| 70-345 | 0.45 | 3.81 | 21.2 | 240.3 | 72.7 | 4.2 | 1.7 | 0.9 | 0.7 | 0.1 | 0.0 | 0.1 | 0.2 |
| 70-350 | 0.49 | 314.4 | 1,917.9 | 21,771.0 | 6,583.1 | 376.3 | 152.4 | 78.7 | 61.5 | 7.4 | 4.3 | 5.2 | 21.7 |
| 70-355 | 0.45 | 1.29 | 7.2 | 81.4 | 24.6 | 1.4 | 0.6 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-360 | 0.45 | 131.96 | 740.5 | 8,405.2 | 2,541.6 | 145.3 | 58.8 | 30.4 | 23.7 | 2.8 | 1.6 | 2.0 | 8.4 |
| 70-365 | 0.45 | 6.7 | 37.2 | 422.5 | 127.8 | 7.3 | 3.0 | 1.5 | 1.2 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-370 | 0.44 | 3.75 | 20.5 | 232.8 | 70.4 | 4.0 | 1.6 | 0.8 | 0.7 | 0.1 | 0.0 | 0.1 | 0.2 |
| 70-375 | 0.47 | 7.1 | 41.4 | 470.3 | 142.2 | 8.1 | 3.3 | 1.7 | 1.3 | 0.2 | 0.1 | 0.1 | 0.5 |
| 70-380 | 0.45 | 14.4 | 80.0 | 908.1 | 274.6 | 15.7 | 6.4 | 3.3 | 2.6 | 0.3 | 0.2 | 0.2 | 0.9 |
| 70-385 | 0.45 | 14.97 | 83.2 | 944.1 | 285.5 | 16.3 | 6.6 | 3.4 | 2.7 | 0.3 | 0.2 | 0.2 | 0.9 |
| 70-390 | 0.46 | 58.11 | 332.3 | 3,772.4 | 1,140.7 | 65.2 | 26.4 | 13.6 | 10.7 | 1.3 | 0.7 | 0.9 | 3.8 |
| 70-395 | 0.43 | 57.19 | 303.3 | 3,442.5 | 1,040.9 | 59.5 | 24.1 | 12.4 | 9.7 | 1.2 | 0.7 | 0.8 | 3.4 |
| 70-400 | 0.44 | 9.67 | 52.4 | 594.7 | 179.8 | 10.3 | 4.2 | 2.1 | 1.7 | 0.2 | 0.1 | 0.1 | 0.6 |
| 70-405 | 0.25 | 7.16 | 22.1 | 250.9 | 75.9 | 4.3 | 1.8 | 0.9 | 0.7 | 0.1 | 0.0 | 0.1 | 0.2 |
| 70-410 | 0.43 | 5.8 | 30.7 | 348.6 | 105.4 | 6.0 | 2.4 | 1.3 | 1.0 | 0.1 | 0.1 | 0.1 | 0.3 |
| 70-415 | 0.45 | 120.75 | 676.7 | 7,681.9 | 2,322.9 | 132.8 | 53.8 | 27.8 | 21.7 | 2.6 | 1.5 | 1.8 | 7.6 |
| 70-420 | 0.45 | 16.99 | 94.4 | 1,071.4 | 324.0 | 18.5 | 7.5 | 3.9 | 3.0 | 0.4 | 0.2 | 0.3 | 1.1 |
| 70-425 | 0.51 | 20.63 | 130.1 | 1,477.3 | 446.7 | 25.5 | 10.3 | 5.3 | 4.2 | 0.5 | 0.3 | 0.3 | 1.5 |
| 70-430 | 0.10 | 6.19 | 7.6 | 86.7 | 26.2 | 1.5 | 0.6 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-435 | 0.10 | 9.16 | 11.3 | 128.4 | 38.8 | 2.2 | 0.9 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-440 | 0.50 | 34.48 | 211.4 | 2,400.1 | 725.7 | 41.5 | 16.8 | 8.7 | 6.8 | 0.8 | 0.5 | 0.6 | 2.4 |
| 70-445 | 0.45 | 5.6 | 31.1 | 353.2 | 106.8 | 6.1 | 2.5 | 1.3 | 1.0 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-450 | 0.45 | 2.65 | 14.7 | 167.1 | 50.5 | 2.9 | 1.2 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 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 |
| 70-460 | 0.45 | 2.67 | 14.8 | 168.4 | 50.9 | 2.9 | 1.2 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-465 | 0.45 | 2.58 | 14.3 | 162.7 | 49.2 | 2.8 | 1.1 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-470 | 0.38 | 8.55 | 40.5 | 460.2 | 139.1 | 8.0 | 3.2 | 1.7 | 1.3 | 0.2 | 0.1 | 0.1 | 0.5 |
| 70-475 | 0.46 | 229.14 | 1,302.2 | 14,782.0 | 4,469.8 | 255.5 | 103.5 | 53.4 | 41.7 | 5.0 | 2.9 | 3.5 | 14.7 |
| 70-480 | 0.60 | 0.31 | 2.3 | 26.1 | 7.9 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-485 | 0.45 | 13.36 | 74.2 | 842.5 | 254.8 | 14.6 | 5.9 | 3.0 | 2.4 | 0.3 | 0.2 | 0.2 | 0.8 |
| 70-490 | 0.47 | 48.75 | 282.5 | 3,206.6 | 969.6 | 55.4 | 22.4 | 11.6 | 9.1 | 1.1 | 0.6 | 0.8 | 3.2 |
| 70-495 | 0.45 | 7.74 | 43.0 | 488.1 | 147.6 | 8.4 | 3.4 | 1.8 | 1.4 | 0.2 | 0.1 | 0.1 | 0.5 |
| 70-500 | 0.45 | 0.56 | 3.1 | 35.3 | 10.7 | 0.6 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-505 | 0.41 | 8.12 | 41.3 | 468.4 | 141.6 | 8.1 | 3.3 | 1.7 | 1.3 | 0.2 | 0.1 | 0.1 | 0.5 |
| 70-510 | 0.45 | 41.82 | 233.1 | 2,645.9 | 800.1 | 45.7 | 18.5 | 9.6 | 7.5 | 0.9 | 0.5 | 0.6 | 2.6 |
| 70-515 | 0.47 | 62.73 | 363.9 | 4,131.1 | 1,249.2 | 71.4 | 28.9 | 14.9 | 11.7 | 1.4 | 0.8 | 1.0 | 4.1 |
| 70-520 | 0.45 | 6.05 | 33.6 | 381.5 | 115.4 | 6.6 | 2.7 | 1.4 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-525 | 0.45 | 6.23 | 34.6 | 392.9 | 118.8 | 6.8 | 2.8 | 1.4 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 70-530 | 0.45 | 1.67 | 9.3 | 105.3 | 31.8 | 1.8 | 0.7 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-535 | 0.45 | 30.24 | 168.4 | 1,911.5 | 578.0 | 33.0 | 13.4 | 6.9 | 5.4 | 0.6 | 0.4 | 0.5 | 1.9 |
| 70-540 | 0.21 | 5.1 | 13.4 | 152.6 | 46.1 | 2.6 | 1.1 | 0.6 | 0.4 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-545 | 0.45 | 1.89 | 10.5 | 119.2 | 36.0 | 2.1 | 0.8 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-550 | 0.26 | 1.3 | 4.2 | 47.2 | 14.3 | 0.8 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-555 | 0.45 | 1.73 | 9.6 | 109.1 | 33.0 | 1.9 | 0.8 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-560 | 0.45 | 3.33 | 18.5 | 210.0 | 63.5 | 3.6 | 1.5 | 0.8 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 70-565 | 0.24 | 16.63 | 49.4 | 560.6 | 169.5 | 9.7 | 3.9 | 2.0 | 1.6 | 0.2 | 0.1 | 0.1 | 0.6 |
| 70-570 | 0.45 | 1.23 | 6.8 | 77.6 | 23.5 | 1.3 | 0.5 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70-575 | 0.45 | 15.39 | 85.4 | 969.6 | 293.2 | 16.8 | 6.8 | 3.5 | 2.7 | 0.3 | 0.2 | 0.2 | 1.0 |
| 70-580 | 0.43 | 119.93 | 642.3 | 7,290.8 | 2,204.6 | 126.0 | 51.0 | 26.4 | 20.6 | 2.5 | 1.4 | 1.7 | 7.3 |
| 71-010 | 0.10 | 1.12 | 1.4 | 15.7 | 4.7 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 71-020 | 0.45 | 14.05 | 78.1 | 886.0 | 267.9 | 15.3 | 6.2 | 3.2 | 2.5 | 0.3 | 0.2 | 0.2 | 0.9 |
| 71-030 | 0.45 | 28.58 | 159.6 | 1,812.2 | 548.0 | 31.3 | 12.7 | 6.5 | 5.1 | 0.6 | 0.4 | 0.4 | 1.8 |
| 71-040 | 0.22 | 20.93 | 56.7 | 643.8 | 194.7 | 11.1 | 4.5 | 2.3 | 1.8 | 0.2 | 0.1 | 0.2 | 0.6 |

# 2006 SPRING POLLUTANT LOADINGS BY OUTFALL

**2006 SPRING POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (04/01/06 - 05/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Spring Median Event Mean Concentration** | | | 18.5 | 210 | 64 | 3.63 | 1.470 | 0.759 | 0.593 | 0.071 | 0.041 | 0.0497 | 0.209 |
| **Precipitation (meters)** | **0.194** | | | | | | | | | | | | |
| 71-050 | 0.46 | 120.42 | 680.9 | 7,729.0 | 2,337.1 | 133.6 | 54.1 | 27.9 | 21.8 | 2.6 | 1.5 | 1.8 | 7.7 |
| 71-060 | 0.45 | 3.11 | 17.3 | 196.1 | 59.3 | 3.4 | 1.4 | 0.7 | 0.6 | 0.1 | 0.0 | 0.0 | 0.2 |
| 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 |
| 71-080 | 0.46 | 101.79 | 573.4 | 6,508.8 | 1,968.1 | 112.5 | 45.6 | 23.5 | 18.4 | 2.2 | 1.3 | 1.5 | 6.5 |
| 71-090 | 0.45 | 6.5 | 35.8 | 405.9 | 122.7 | 7.0 | 2.8 | 1.5 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 71-100 | 0.10 | 1.99 | 2.5 | 27.9 | 8.4 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-010 | 0.18 | 17.32 | 37.4 | 425.0 | 128.5 | 7.3 | 3.0 | 1.5 | 1.2 | 0.1 | 0.1 | 0.1 | 0.4 |
| 72-020 | 0.40 | 24.7 | 120.5 | 1,367.7 | 413.6 | 23.6 | 9.6 | 4.9 | 3.9 | 0.5 | 0.3 | 0.3 | 1.4 |
| 72-030 | 0.10 | 5.25 | 6.5 | 73.6 | 22.2 | 1.3 | 0.5 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 72-040 | 0.42 | 166.54 | 856.4 | 9,721.5 | 2,939.6 | 168.0 | 68.1 | 35.1 | 27.5 | 3.3 | 1.9 | 2.3 | 9.7 |
| 72-050 | 0.10 | 5.16 | 6.4 | 72.3 | 21.9 | 1.2 | 0.5 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 72-060 | 0.36 | 113.04 | 504.8 | 5,730.2 | 1,732.7 | 99.0 | 40.1 | 20.7 | 16.2 | 1.9 | 1.1 | 1.4 | 5.7 |
| 72-070 | 0.10 | 2.21 | 2.7 | 31.0 | 9.4 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-080 | 0.60 | 4.74 | 35.1 | 398.6 | 120.5 | 6.9 | 2.8 | 1.4 | 1.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| 72-090 | 0.45 | 68.71 | 379.3 | 4,305.8 | 1,302.0 | 74.4 | 30.1 | 15.6 | 12.2 | 1.5 | 0.8 | 1.0 | 4.3 |
| 72-100 | 0.46 | 68.32 | 390.5 | 4,433.0 | 1,340.4 | 76.6 | 31.0 | 16.0 | 12.5 | 1.5 | 0.9 | 1.0 | 4.4 |
| 72-110 | 0.10 | 3.22 | 4.0 | 45.1 | 13.6 | 0.8 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-120 | 0.45 | 62.98 | 349.9 | 3,971.7 | 1,201.0 | 68.7 | 27.8 | 14.4 | 11.2 | 1.3 | 0.8 | 0.9 | 4.0 |
| 72-130 | 0.46 | 58.06 | 327.1 | 3,712.9 | 1,122.7 | 64.2 | 26.0 | 13.4 | 10.5 | 1.3 | 0.7 | 0.9 | 3.7 |
| 72-140 | 0.10 | 10.19 | 12.6 | 142.8 | 43.2 | 2.5 | 1.0 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 |
| 72-150 | 0.10 | 4.76 | 5.9 | 66.7 | 20.2 | 1.2 | 0.5 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 72-160 | 0.10 | 4.55 | 5.6 | 63.8 | 19.3 | 1.1 | 0.4 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 73-010 | 0.44 | 20.76 | 112.5 | 1,276.9 | 386.1 | 22.1 | 8.9 | 4.6 | 3.6 | 0.4 | 0.2 | 0.3 | 1.3 |
| 73-020 | 0.44 | 57.47 | 314.0 | 3,564.5 | 1,077.8 | 61.6 | 25.0 | 12.9 | 10.1 | 1.2 | 0.7 | 0.8 | 3.5 |
| 73-030 | 0.10 | 21.56 | 26.6 | 302.1 | 91.4 | 5.2 | 2.1 | 1.1 | 0.9 | 0.1 | 0.1 | 0.1 | 0.3 |
| 74-010 | 0.48 | 44.39 | 262.3 | 2,977.7 | 900.4 | 51.5 | 20.8 | 10.8 | 8.4 | 1.0 | 0.6 | 0.7 | 3.0 |
| 74-020 | 0.45 | 4.41 | 24.5 | 278.1 | 84.1 | 4.8 | 1.9 | 1.0 | 0.8 | 0.1 | 0.1 | 0.1 | 0.3 |
| 75-005 | 0.45 | 12.39 | 68.8 | 780.4 | 236.0 | 13.5 | 5.5 | 2.8 | 2.2 | 0.3 | 0.2 | 0.2 | 0.8 |
| 75-010 | 0.60 | 3.65 | 27.0 | 306.9 | 92.8 | 5.3 | 2.1 | 1.1 | 0.9 | 0.1 | 0.1 | 0.1 | 0.3 |
| 75-020 | 0.45 | 1.53 | 8.5 | 96.5 | 29.2 | 1.7 | 0.7 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| 75-030 | 0.45 | 8.38 | 46.6 | 528.5 | 159.8 | 9.1 | 3.7 | 1.9 | 1.5 | 0.2 | 0.1 | 0.1 | 0.5 |
| 75-040 | 0.45 | 14.74 | 81.9 | 929.5 | 281.1 | 16.1 | 6.5 | 3.4 | 2.6 | 0.3 | 0.2 | 0.2 | 0.9 |
| 76-010 | 0.46 | 907.31 | 5,195.6 | 58,977.5 | 17,833.7 | 1,019.5 | 412.8 | 213.2 | 166.5 | 19.9 | 11.5 | 14.0 | 58.7 |
| 76-020 | 0.46 | 88.62 | 498.5 | 5,659.1 | 1,711.2 | 97.8 | 39.6 | 20.5 | 16.0 | 1.9 | 1.1 | 1.3 | 5.6 |
| 76-030 | 0.45 | 7.55 | 41.9 | 476.1 | 144.0 | 8.2 | 3.3 | 1.7 | 1.3 | 0.2 | 0.1 | 0.1 | 0.5 |
| 76-040 | 0.19 | 4.67 | 10.7 | 121.8 | 36.8 | 2.1 | 0.9 | 0.4 | 0.3 | 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 |
| 81-010 | 0.10 | 31.17 | 38.5 | 436.8 | 132.1 | 7.6 | 3.1 | 1.6 | 1.2 | 0.1 | 0.1 | 0.1 | 0.4 |
| 82-010 | 0.49 | 23.53 | 141.3 | 1,604.5 | 485.2 | 27.7 | 11.2 | 5.8 | 4.5 | 0.5 | 0.3 | 0.4 | 1.6 |
| 82-020 | 0.45 | 73.45 | 412.4 | 4,681.5 | 1,415.6 | 80.9 | 32.8 | 16.9 | 13.2 | 1.6 | 0.9 | 1.1 | 4.7 |
| 82-030 | 0.45 | 90.04 | 505.4 | 5,737.5 | 1,734.9 | 99.2 | 40.2 | 20.7 | 16.2 | 1.9 | 1.1 | 1.4 | 5.7 |
| 82-040 | 0.46 | 98.49 | 564.1 | 6,403.0 | 1,936.1 | 110.7 | 44.8 | 23.1 | 18.1 | 2.2 | 1.3 | 1.5 | 6.4 |
| 83-010 | 0.45 | 6.59 | 36.6 | 415.6 | 125.7 | 7.2 | 2.9 | 1.5 | 1.2 | 0.1 | 0.1 | 0.1 | 0.4 |
| 83-015 | 0.45 | 0.99 | 5.5 | 62.4 | 18.9 | 1.1 | 0.4 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 83-020 | 0.43 | 85.96 | 461.4 | 5,237.5 | 1,583.7 | 90.5 | 36.7 | 18.9 | 14.8 | 1.8 | 1.0 | 1.2 | 5.2 |
| 83-025 | 0.45 | 51.23 | 284.6 | 3,230.7 | 976.9 | 55.8 | 22.6 | 11.7 | 9.1 | 1.1 | 0.6 | 0.8 | 3.2 |
| 83-030 | 0.60 | 0.82 | 6.1 | 68.9 | 20.8 | 1.2 | 0.5 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 |
| 83-040 | 0.10 | 1.08 | 1.3 | 15.1 | 4.6 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-050 | 0.45 | 40.4 | 225.1 | 2,554.7 | 772.5 | 44.2 | 17.9 | 9.2 | 7.2 | 0.9 | 0.5 | 0.6 | 2.5 |
| 83-060 | 0.45 | 10.05 | 55.8 | 633.8 | 191.6 | 11.0 | 4.4 | 2.3 | 1.8 | 0.2 | 0.1 | 0.1 | 0.6 |
| 83-070 | 0.10 | 1.19 | 1.5 | 16.7 | 5.0 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-080 | 0.48 | 178.63 | 1,048.5 | 11,901.8 | 3,598.9 | 205.7 | 83.3 | 43.0 | 33.6 | 4.0 | 2.3 | 2.8 | 11.8 |
| 83-090 | 0.41 | 9.16 | 46.3 | 526.0 | 159.1 | 9.1 | 3.7 | 1.9 | 1.5 | 0.2 | 0.1 | 0.1 | 0.5 |
| 84-010 | 0.47 | 21.56 | 125.2 | 1,421.1 | 429.7 | 24.6 | 9.9 | 5.1 | 4.0 | 0.5 | 0.3 | 0.3 | 1.4 |
| 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 |
| **SPRING SEASONAL SUM (kg)** | | | **166,763.28** | **1,892,988.57** | **572,403.69** | **32,721.66** | **13,250.92** | **6,841.80** | **5,345.44** | **640.01** | **369.58** | **448.01** | **1,883.97** |

# 2006 SUMMER POLLUTANT LOADINGS BY OUTFALL

**2006 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/06 - 08/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Summer Median Event Mean Concentration | | | 7.6 | 112 | 81 | 3.09 | 1.190 | 0.649 | 0.503 | 0.090 | 0.019 | 0.020 | 0.064 |
| Precipitation (meters) | 0.279 | | | | | | | | | | | | |
| 10-010 | 0.43 | 113.55 | 355.9 | 5,265.6 | 3,798.8 | 145.3 | 55.9 | 30.5 | 23.6 | 4.2 | 0.9 | 0.9 | 3.0 |
| 10-020 | 0.45 | 7.81 | 25.5 | 377.8 | 272.5 | 10.4 | 4.0 | 2.2 | 1.7 | 0.3 | 0.1 | 0.1 | 0.2 |
| 10-030 | 0.10 | 4.05 | 2.9 | 43.5 | 31.4 | 1.2 | 0.5 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-040 | 0.45 | 167.42 | 543.5 | 8,041.9 | 5,801.7 | 221.9 | 85.4 | 46.6 | 36.1 | 6.5 | 1.4 | 1.4 | 4.6 |
| 10-050 | 0.46 | 114.18 | 377.6 | 5,586.8 | 4,030.5 | 154.1 | 59.4 | 32.4 | 25.1 | 4.5 | 1.0 | 1.0 | 3.2 |
| 10-060 | 0.60 | 10.5 | 45.8 | 677.2 | 488.5 | 18.7 | 7.2 | 3.9 | 3.0 | 0.5 | 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 |
| 10-080 | 0.38 | 30.66 | 85.1 | 1,259.4 | 908.6 | 34.7 | 13.4 | 7.3 | 5.7 | 1.0 | 0.2 | 0.2 | 0.7 |
| 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 |
| 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 |
| 10-090C | 0.54 | 12.77 | 50.2 | 743.3 | 536.2 | 20.5 | 7.9 | 4.3 | 3.3 | 0.6 | 0.1 | 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 |
| 10-100 | 0.36 | 1392.1 | 3,668.5 | 54,275.9 | 39,156.2 | 1,497.4 | 576.7 | 314.5 | 243.8 | 43.6 | 9.4 | 9.6 | 31.0 |
| 10-110 | 0.47 | 300.11 | 1,017.2 | 15,049.7 | 10,857.3 | 415.2 | 159.9 | 87.2 | 67.6 | 12.1 | 2.6 | 2.7 | 8.6 |
| 10-120A/B | 0.44 | 372.78 | 1,178.8 | 17,440.7 | 12,582.2 | 481.2 | 185.3 | 101.1 | 78.3 | 14.0 | 3.0 | 3.1 | 10.0 |
| 10-130 | 0.45 | 336.46 | 1,103.7 | 16,329.6 | 11,780.6 | 450.5 | 173.5 | 94.6 | 73.3 | 13.1 | 2.8 | 2.9 | 9.3 |
| 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 |
| 10-140a,b | 0.58 | 220.65 | 922.4 | 13,647.7 | 9,845.9 | 376.5 | 145.0 | 79.1 | 61.3 | 11.0 | 2.4 | 2.4 | 7.8 |
| 10-150 | 0.47 | 157.15 | 535.3 | 7,920.2 | 5,713.8 | 218.5 | 84.2 | 45.9 | 35.6 | 6.4 | 1.4 | 1.4 | 4.5 |
| 10-160 | 0.00 | 17 | 0.3 | 4.6 | 3.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-170 | 0.50 | 176.01 | 643.5 | 9,520.6 | 6,868.4 | 262.7 | 101.2 | 55.2 | 42.8 | 7.7 | 1.6 | 1.7 | 5.4 |
| 10-180 | 0.45 | 284.26 | 919.7 | 13,606.5 | 9,816.1 | 375.4 | 144.6 | 78.8 | 61.1 | 10.9 | 2.4 | 2.4 | 7.8 |
| 10-190 | 0.59 | 14.58 | 62.7 | 927.4 | 669.0 | 25.6 | 9.9 | 5.4 | 4.2 | 0.7 | 0.2 | 0.2 | 0.5 |
| 10-200 | 0.40 | 42.44 | 122.4 | 1,811.2 | 1,306.7 | 50.0 | 19.2 | 10.5 | 8.1 | 1.5 | 0.3 | 0.3 | 1.0 |
| 10-210 | 0.49 | 98.32 | 351.1 | 5,195.1 | 3,747.9 | 143.3 | 55.2 | 30.1 | 23.3 | 4.2 | 0.9 | 0.9 | 3.0 |
| 10-220 | 0.56 | 18.83 | 76.5 | 1,131.6 | 816.4 | 31.2 | 12.0 | 6.6 | 5.1 | 0.9 | 0.2 | 0.2 | 0.6 |
| 10-230 | 0.47 | 235.02 | 807.1 | 11,941.4 | 8,614.9 | 329.5 | 126.9 | 69.2 | 53.6 | 9.6 | 2.1 | 2.1 | 6.8 |
| 10-240 | 0.51 | 103.83 | 387.5 | 5,733.3 | 4,136.2 | 158.2 | 60.9 | 33.2 | 25.7 | 4.6 | 1.0 | 1.0 | 3.3 |
| 10-250 | 0.49 | 242.96 | 862.9 | 12,766.6 | 9,210.2 | 352.2 | 135.6 | 74.0 | 57.3 | 10.3 | 2.2 | 2.3 | 7.3 |
| 10-260 | 0.56 | 23.77 | 96.2 | 1,423.5 | 1,027.0 | 39.3 | 15.1 | 8.2 | 6.4 | 1.1 | 0.2 | 0.3 | 0.8 |
| 10-270 | 0.47 | 72.45 | 249.4 | 3,690.2 | 2,662.2 | 101.8 | 39.2 | 21.4 | 16.6 | 3.0 | 0.6 | 0.7 | 2.1 |
| 10-280 | 0.44 | 55.08 | 177.6 | 2,627.6 | 1,895.7 | 72.5 | 27.9 | 15.2 | 11.8 | 2.1 | 0.5 | 0.5 | 1.5 |
| 10-290 | 0.10 | 6.83 | 5.0 | 73.4 | 53.0 | 2.0 | 0.8 | 0.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 10-300 | 0.36 | 17.74 | 46.5 | 687.6 | 496.0 | 19.0 | 7.3 | 4.0 | 3.1 | 0.6 | 0.1 | 0.1 | 0.4 |
| 10-310 | 0.47 | 60.29 | 206.8 | 3,060.3 | 2,207.8 | 84.4 | 32.5 | 17.7 | 13.7 | 2.5 | 0.5 | 0.5 | 1.7 |
| 10-320 | 0.45 | 341.99 | 1,122.5 | 16,607.1 | 11,980.8 | 458.2 | 176.5 | 96.2 | 74.6 | 13.3 | 2.9 | 3.0 | 9.5 |
| 10-330 | 0.35 | 21.61 | 55.2 | 816.7 | 589.2 | 22.5 | 8.7 | 4.7 | 3.7 | 0.7 | 0.1 | 0.1 | 0.5 |
| 10-340 | 0.45 | 20.74 | 68.0 | 1,005.9 | 725.7 | 27.8 | 10.7 | 5.8 | 4.5 | 0.8 | 0.2 | 0.2 | 0.6 |
| 10-350 | 0.60 | 28.16 | 122.5 | 1,812.8 | 1,307.8 | 50.0 | 19.3 | 10.5 | 8.1 | 1.5 | 0.3 | 0.3 | 1.0 |
| 10-360 | 0.59 | 29.02 | 125.0 | 1,848.7 | 1,333.7 | 51.0 | 19.6 | 10.7 | 8.3 | 1.5 | 0.3 | 0.3 | 1.1 |
| 10-370 | 0.59 | 14.46 | 61.9 | 916.4 | 661.1 | 25.3 | 9.7 | 5.3 | 4.1 | 0.7 | 0.2 | 0.2 | 0.5 |
| 10-380 | 0.45 | 14.38 | 46.5 | 688.1 | 496.4 | 19.0 | 7.3 | 4.0 | 3.1 | 0.6 | 0.1 | 0.1 | 0.4 |
| 10-390 | 0.49 | 41.97 | 150.3 | 2,224.4 | 1,604.7 | 61.4 | 23.6 | 12.9 | 10.0 | 1.8 | 0.4 | 0.4 | 1.3 |
| 10-400A | 0.10 | 1.07 | 0.8 | 11.5 | 8.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-400B | 0.47 | 17.66 | 60.5 | 895.2 | 645.8 | 24.7 | 9.5 | 5.2 | 4.0 | 0.7 | 0.2 | 0.2 | 0.5 |
| 10-400C | 0.57 | 50.25 | 206.6 | 3,056.0 | 2,204.7 | 84.3 | 32.5 | 17.7 | 13.7 | 2.5 | 0.5 | 0.5 | 1.7 |
| 10-410A | 0.50 | 46.22 | 167.2 | 2,473.3 | 1,784.3 | 68.2 | 26.3 | 14.3 | 11.1 | 2.0 | 0.4 | 0.4 | 1.4 |
| 10-410B | 0.32 | 21.29 | 48.9 | 724.1 | 522.4 | 20.0 | 7.7 | 4.2 | 3.3 | 0.6 | 0.1 | 0.1 | 0.4 |
| 10-410C | 0.53 | 22.8 | 87.4 | 1,293.5 | 933.2 | 35.7 | 13.7 | 7.5 | 5.8 | 1.0 | 0.2 | 0.2 | 0.7 |
| 10-410D | 0.60 | 27.34 | 119.2 | 1,764.0 | 1,272.6 | 48.7 | 18.7 | 10.2 | 7.9 | 1.4 | 0.3 | 0.3 | 1.0 |
| 10-410E | 0.58 | 256.04 | 1,070.4 | 15,836.7 | 11,425.0 | 436.9 | 168.3 | 91.8 | 71.1 | 12.7 | 2.7 | 2.8 | 9.0 |
| 10-410F | 0.59 | 37.92 | 162.1 | 2,397.6 | 1,729.7 | 66.1 | 25.5 | 13.9 | 10.8 | 1.9 | 0.4 | 0.4 | 1.4 |
| 10-420A | 0.27 | 23.05 | 45.6 | 675.2 | 487.1 | 18.6 | 7.2 | 3.9 | 3.0 | 0.5 | 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 |
| 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 |
| 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 |
| 10-420E | 0.59 | 127.89 | 545.2 | 8,067.0 | 5,819.8 | 222.6 | 85.7 | 46.7 | 36.2 | 6.5 | 1.4 | 1.4 | 4.6 |
| 10-430A | 0.00 | 8.14 | 0.1 | 2.2 | 1.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-430B | 0.53 | 54.72 | 212.4 | 3,142.9 | 2,267.4 | 86.7 | 33.4 | 18.2 | 14.1 | 2.5 | 0.5 | 0.6 | 1.8 |
| 10-430C | 0.48 | 44.83 | 156.5 | 2,314.9 | 1,670.0 | 63.9 | 24.6 | 13.4 | 10.4 | 1.9 | 0.4 | 0.4 | 1.3 |
| 10-430D | 0.49 | 85.79 | 306.4 | 4,533.3 | 3,270.5 | 125.1 | 48.2 | 26.3 | 20.4 | 3.6 | 0.8 | 0.8 | 2.6 |
| 10-430E | 0.56 | 86.66 | 351.1 | 5,194.1 | 3,747.2 | 143.3 | 55.2 | 30.1 | 23.3 | 4.2 | 0.9 | 0.9 | 3.0 |
| 10-430F | 0.10 | 377.97 | 274.6 | 4,062.8 | 2,931.0 | 112.1 | 43.2 | 23.5 | 18.2 | 3.3 | 0.7 | 0.7 | 2.3 |
| 10-430G | 0.50 | 125.89 | 453.3 | 6,706.1 | 4,838.0 | 185.0 | 71.3 | 38.9 | 30.1 | 5.4 | 1.2 | 1.2 | 3.8 |
| 10-430H | 0.49 | 33.18 | 118.5 | 1,752.5 | 1,264.3 | 48.4 | 18.6 | 10.2 | 7.9 | 1.4 | 0.3 | 0.3 | 1.0 |
| 10-430I | 0.59 | 32.61 | 139.5 | 2,063.2 | 1,488.5 | 56.9 | 21.9 | 12.0 | 9.3 | 1.7 | 0.4 | 0.4 | 1.2 |
| 10-430J | 0.43 | 532.36 | 1,678.4 | 24,831.9 | 17,914.4 | 685.1 | 263.8 | 143.9 | 111.5 | 20.0 | 4.3 | 4.4 | 14.2 |
| 10-430K | 0.48 | 337.06 | 1,169.7 | 17,305.5 | 12,484.7 | 477.4 | 183.9 | 100.3 | 77.7 | 13.9 | 3.0 | 3.1 | 9.9 |
| 10-430L | 0.45 | 84.4 | 276.4 | 4,089.3 | 2,950.1 | 112.8 | 43.4 | 23.7 | 18.4 | 3.3 | 0.7 | 0.7 | 2.3 |
| 10-430M | 0.54 | 75.94 | 299.2 | 4,427.3 | 3,194.0 | 122.1 | 47.0 | 25.7 | 19.9 | 3.6 | 0.8 | 0.8 | 2.5 |
| 10-430N | 0.44 | 26.43 | 85.2 | 1,261.1 | 909.8 | 34.8 | 13.4 | 7.3 | 5.7 | 1.0 | 0.2 | 0.2 | 0.7 |
| 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 |
| 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 |
| 10-430Q | 0.10 | 8.03 | 5.8 | 86.3 | 62.3 | 2.4 | 0.9 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 10-430R | 0.47 | 150.32 | 510.5 | 7,553.3 | 5,449.1 | 208.4 | 80.3 | 43.8 | 33.9 | 6.1 | 1.3 | 1.3 | 4.3 |
| 10-430S | 0.10 | 5.15 | 3.7 | 55.4 | 39.9 | 1.5 | 0.6 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-430T | 0.46 | 262.47 | 871.7 | 12,896.5 | 9,303.9 | 355.8 | 137.0 | 74.7 | 57.9 | 10.4 | 2.2 | 2.3 | 7.4 |

# 2006 SUMMER POLLUTANT LOADINGS BY OUTFALL

**2006 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/06 - 08/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Summer Median Event Mean Concentration | | | 7.6 | 112 | 81 | 3.09 | 1.190 | 0.649 | 0.503 | 0.090 | 0.019 | 0.020 | 0.064 |
| Precipitation (meters) | 0.279 | | | | | | | | | | | | |
| 10-430U | 0.47 | 431.37 | 1,472.5 | 21,786.0 | 15,717.0 | 601.1 | 231.5 | 126.2 | 97.8 | 17.5 | 3.8 | 3.9 | 12.4 |
| 10-430V | 0.46 | 329.11 | 1,111.4 | 16,443.9 | 11,863.1 | 453.7 | 174.7 | 95.3 | 73.9 | 13.2 | 2.8 | 2.9 | 9.4 |
| 10-440A | 0.46 | 23.18 | 77.2 | 1,141.5 | 823.5 | 31.5 | 12.1 | 6.6 | 5.1 | 0.9 | 0.2 | 0.2 | 0.7 |
| 10-440B | 0.49 | 34.23 | 122.6 | 1,813.2 | 1,308.1 | 50.0 | 19.3 | 10.5 | 8.1 | 1.5 | 0.3 | 0.3 | 1.0 |
| 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 |
| 10-440E | 0.51 | 831.25 | 3,105.5 | 45,947.0 | 33,147.5 | 1,267.6 | 488.2 | 266.2 | 206.4 | 36.9 | 8.0 | 8.2 | 26.3 |
| 10-440F | 0.46 | 538.85 | 1,801.7 | 26,656.3 | 19,230.6 | 735.4 | 283.2 | 154.5 | 119.7 | 21.4 | 4.6 | 4.7 | 15.2 |
| 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 |
| 10-450B | 0.52 | 3.41 | 12.8 | 189.4 | 136.6 | 5.2 | 2.0 | 1.1 | 0.9 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-450C | 0.59 | 55.64 | 240.0 | 3,551.6 | 2,562.2 | 98.0 | 37.7 | 20.6 | 16.0 | 2.9 | 0.6 | 0.6 | 2.0 |
| 10-450D | 0.45 | 4.62 | 15.1 | 223.5 | 161.2 | 6.2 | 2.4 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-450E | 0.44 | 3.2 | 10.3 | 152.0 | 109.7 | 4.2 | 1.6 | 0.9 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-450F | 0.46 | 158.55 | 529.2 | 7,829.7 | 5,648.6 | 216.0 | 83.2 | 45.4 | 35.2 | 6.3 | 1.4 | 1.4 | 4.5 |
| 10-450G/H | 0.48 | 75.02 | 261.9 | 3,874.6 | 2,795.2 | 106.9 | 41.2 | 22.5 | 17.4 | 3.1 | 0.7 | 0.7 | 2.2 |
| 10-450I | 0.49 | 243.64 | 869.5 | 12,864.5 | 9,280.8 | 354.9 | 136.7 | 74.5 | 57.8 | 10.3 | 2.2 | 2.3 | 7.4 |
| 10-450J | 0.49 | 17.16 | 60.5 | 895.5 | 646.0 | 24.7 | 9.5 | 5.2 | 4.0 | 0.7 | 0.2 | 0.2 | 0.5 |
| 10-450K | 0.58 | 37.01 | 155.8 | 2,304.4 | 1,662.5 | 63.6 | 24.5 | 13.4 | 10.3 | 1.9 | 0.4 | 0.4 | 1.3 |
| 10-450L | 0.51 | 213.41 | 783.1 | 11,585.7 | 8,358.3 | 319.6 | 123.1 | 67.1 | 52.0 | 9.3 | 2.0 | 2.1 | 6.6 |
| 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 |
| 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 |
| 10-460B | 0.52 | 7.29 | 27.4 | 405.0 | 292.1 | 11.2 | 4.3 | 2.3 | 1.8 | 0.3 | 0.1 | 0.1 | 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 |
| 10-460E | 0.49 | 231.41 | 830.3 | 12,283.9 | 8,861.9 | 338.9 | 130.5 | 71.2 | 55.2 | 9.9 | 2.1 | 2.2 | 7.0 |
| 10-460F | 0.49 | 14.75 | 53.0 | 784.4 | 565.9 | 21.6 | 8.3 | 4.5 | 3.5 | 0.6 | 0.1 | 0.1 | 0.4 |
| 10-460G | 0.51 | 79.66 | 295.6 | 4,373.8 | 3,155.4 | 120.7 | 46.5 | 25.3 | 19.6 | 3.5 | 0.8 | 0.8 | 2.5 |
| 10-460H | 0.48 | 12.35 | 43.0 | 636.4 | 459.1 | 17.6 | 6.8 | 3.7 | 2.9 | 0.5 | 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 |
| 10-460J | 0.46 | 5.36 | 18.1 | 267.1 | 192.7 | 7.4 | 2.8 | 1.5 | 1.2 | 0.2 | 0.0 | 0.0 | 0.2 |
| 10-460K | 0.36 | 5.48 | 14.3 | 211.9 | 152.9 | 5.8 | 2.3 | 1.2 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-460L | 0.46 | 3.5 | 11.8 | 174.3 | 125.8 | 4.8 | 1.9 | 1.0 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-460M | 0.48 | 9.55 | 33.2 | 491.3 | 354.4 | 13.6 | 5.2 | 2.8 | 2.2 | 0.4 | 0.1 | 0.1 | 0.3 |
| 10-460N | 0.45 | 3.85 | 12.6 | 186.2 | 134.3 | 5.1 | 2.0 | 1.1 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-460O | 0.45 | 4.15 | 13.7 | 202.4 | 146.0 | 5.6 | 2.2 | 1.2 | 0.9 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-460P | 0.45 | 4.34 | 14.2 | 209.9 | 151.4 | 5.8 | 2.2 | 1.2 | 0.9 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-460Q | 0.56 | 19.73 | 80.9 | 1,196.5 | 863.2 | 33.0 | 12.7 | 6.9 | 5.4 | 1.0 | 0.2 | 0.2 | 0.7 |
| 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 |
| 10-460S | 0.56 | 233.54 | 957.4 | 14,165.5 | 10,219.4 | 390.8 | 150.5 | 82.1 | 63.6 | 11.4 | 2.5 | 2.5 | 8.1 |
| 10-465 | 0.10 | 8.56 | 6.2 | 92.0 | 66.4 | 2.5 | 1.0 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-470 | 0.38 | 25.6 | 71.0 | 1,050.2 | 757.6 | 29.0 | 11.2 | 6.1 | 4.7 | 0.8 | 0.2 | 0.2 | 0.6 |
| 10-480 | 0.58 | 39.66 | 167.2 | 2,473.3 | 1,784.3 | 68.2 | 26.3 | 14.3 | 11.1 | 2.0 | 0.4 | 0.4 | 1.4 |
| 10-485 | 0.00 | 7.27 | 0.1 | 2.0 | 1.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-490 | 0.43 | 150.96 | 475.5 | 7,034.5 | 5,074.9 | 194.1 | 74.7 | 40.8 | 31.6 | 5.7 | 1.2 | 1.2 | 4.0 |
| 10-500A | 0.26 | 26.21 | 50.0 | 739.4 | 533.4 | 20.4 | 7.9 | 4.3 | 3.3 | 0.6 | 0.1 | 0.1 | 0.4 |
| 10-500B | 0.46 | 8.48 | 28.4 | 419.5 | 302.7 | 11.6 | 4.5 | 2.4 | 1.9 | 0.3 | 0.1 | 0.1 | 0.2 |
| 10-500C | 0.44 | 111.36 | 352.2 | 5,211.2 | 3,759.5 | 143.8 | 55.4 | 30.2 | 23.4 | 4.2 | 0.9 | 0.9 | 3.0 |
| 10-500D | 0.24 | 3.83 | 6.6 | 98.0 | 70.7 | 2.7 | 1.0 | 0.6 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-500E | 0.53 | 23.34 | 90.3 | 1,335.8 | 963.7 | 36.9 | 14.2 | 7.7 | 6.0 | 1.1 | 0.2 | 0.2 | 0.8 |
| 10-500F | 0.49 | 12.04 | 43.2 | 639.0 | 461.0 | 17.6 | 6.8 | 3.7 | 2.9 | 0.5 | 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 |
| 10-505 | 0.10 | 7.85 | 5.7 | 84.4 | 60.9 | 2.3 | 0.9 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 10-510 | 0.51 | 62.36 | 230.4 | 3,409.4 | 2,459.7 | 94.1 | 36.2 | 19.8 | 15.3 | 2.7 | 0.6 | 0.6 | 1.9 |
| 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 |
| 10-530 | 0.45 | 116.15 | 380.4 | 5,627.9 | 4,060.1 | 155.3 | 59.8 | 32.6 | 25.3 | 4.5 | 1.0 | 1.0 | 3.2 |
| 10-540 | 0.12 | 53.9 | 46.4 | 686.1 | 495.0 | 18.9 | 7.3 | 4.0 | 3.1 | 0.6 | 0.1 | 0.1 | 0.4 |
| 10-550 | 0.46 | 25.83 | 86.3 | 1,276.9 | 921.2 | 35.2 | 13.6 | 7.4 | 5.7 | 1.0 | 0.2 | 0.2 | 0.7 |
| 10-560A/B | 0.44 | 600.63 | 1,909.1 | 28,244.9 | 20,376.7 | 779.3 | 300.1 | 163.7 | 126.8 | 22.7 | 4.9 | 5.0 | 16.1 |
| 10-570A | 0.54 | 14.64 | 57.8 | 855.7 | 617.3 | 23.6 | 9.1 | 5.0 | 3.8 | 0.7 | 0.1 | 0.2 | 0.5 |
| 10-570B | 0.44 | 228.18 | 723.6 | 10,706.3 | 7,723.8 | 295.4 | 113.8 | 62.0 | 48.1 | 8.6 | 1.9 | 1.9 | 6.1 |
| 10-580 | 0.45 | 73.39 | 239.3 | 3,540.6 | 2,554.3 | 97.7 | 37.6 | 20.5 | 15.9 | 2.8 | 0.6 | 0.6 | 2.0 |
| 10-600 | 0.48 | 89.24 | 313.5 | 4,638.9 | 3,346.6 | 128.0 | 49.3 | 26.9 | 20.8 | 3.7 | 0.8 | 0.8 | 2.7 |
| 10-610 | 0.46 | 25.6 | 85.2 | 1,261.3 | 909.9 | 34.8 | 13.4 | 7.3 | 5.7 | 1.0 | 0.2 | 0.2 | 0.7 |
| 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 |
| 10-630A | 0.10 | 6.24 | 4.5 | 67.1 | 48.4 | 1.9 | 0.7 | 0.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 10-630B | 0.45 | 4.68 | 15.3 | 226.4 | 163.3 | 6.2 | 2.4 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-630C | 0.48 | 96.03 | 337.1 | 4,987.0 | 3,597.8 | 137.6 | 53.0 | 28.9 | 22.4 | 4.0 | 0.9 | 0.9 | 2.8 |
| 10-630D | 0.45 | 6.37 | 20.8 | 308.1 | 222.3 | 8.5 | 3.3 | 1.8 | 1.4 | 0.2 | 0.1 | 0.1 | 0.2 |
| 10-630E | 0.45 | 8.52 | 27.9 | 412.1 | 297.3 | 11.4 | 4.4 | 2.4 | 1.9 | 0.3 | 0.1 | 0.1 | 0.2 |
| 10-630F | 0.54 | 17.56 | 68.9 | 1,019.7 | 735.6 | 28.1 | 10.8 | 5.9 | 4.6 | 0.8 | 0.2 | 0.2 | 0.6 |
| 10-630G | 0.45 | 5.9 | 19.3 | 285.4 | 205.9 | 7.9 | 3.0 | 1.7 | 1.3 | 0.2 | 0.0 | 0.1 | 0.2 |
| 10-630H | 0.30 | 25.63 | 56.4 | 834.4 | 602.0 | 23.0 | 8.9 | 4.8 | 3.7 | 0.7 | 0.1 | 0.1 | 0.5 |
| 10-630I | 0.47 | 12.48 | 42.2 | 623.8 | 450.0 | 17.2 | 6.6 | 3.6 | 2.8 | 0.5 | 0.1 | 0.1 | 0.4 |
| 10-630J | 0.55 | 14.69 | 59.1 | 874.2 | 630.7 | 24.1 | 9.3 | 5.1 | 3.9 | 0.7 | 0.2 | 0.2 | 0.5 |
| 10-630K | 0.47 | 95.29 | 327.7 | 4,847.7 | 3,497.3 | 133.7 | 51.5 | 28.1 | 21.8 | 3.9 | 0.8 | 0.9 | 2.8 |
| 10-630L | 0.52 | 100.42 | 380.1 | 5,623.7 | 4,057.1 | 155.2 | 59.8 | 32.6 | 25.3 | 4.5 | 1.0 | 1.0 | 3.2 |
| 10-630M | 0.50 | 11.71 | 42.2 | 625.0 | 450.9 | 17.2 | 6.6 | 3.6 | 2.8 | 0.5 | 0.1 | 0.1 | 0.4 |
| 10-630N | 0.45 | 8.45 | 27.6 | 408.7 | 294.9 | 11.3 | 4.3 | 2.4 | 1.8 | 0.3 | 0.1 | 0.1 | 0.2 |
| 10-630O | 0.36 | 5.77 | 15.3 | 225.8 | 162.9 | 6.2 | 2.4 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |

# 2006 SUMMER POLLUTANT LOADINGS BY OUTFALL

**2006 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/06 - 08/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Summer Median Event Mean Concentration** | | | 7.6 | 112 | 81 | 3.09 | 1.190 | 0.649 | 0.503 | 0.090 | 0.019 | 0.020 | 0.064 |
| **Precipitation (meters)** | **0.279** | | | | | | | | | | | | |
| 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 |
| 10-630R | 0.33 | 83.89 | 203.6 | 3,011.6 | 2,172.7 | 83.1 | 32.0 | 17.5 | 13.5 | 2.4 | 0.5 | 0.5 | 1.7 |
| 10-630S | 0.22 | 37.02 | 58.5 | 865.0 | 624.0 | 23.9 | 9.2 | 5.0 | 3.9 | 0.7 | 0.1 | 0.2 | 0.5 |
| 10-630T | 0.56 | 7.72 | 31.5 | 466.8 | 336.7 | 12.9 | 5.0 | 2.7 | 2.1 | 0.4 | 0.1 | 0.1 | 0.3 |
| 10-630U | 0.52 | 115.42 | 438.6 | 6,489.6 | 4,681.8 | 179.0 | 69.0 | 37.6 | 29.1 | 5.2 | 1.1 | 1.2 | 3.7 |
| 10-630V | 0.11 | 33.85 | 26.0 | 384.2 | 277.2 | 10.6 | 4.1 | 2.2 | 1.7 | 0.3 | 0.1 | 0.1 | 0.2 |
| 10-630W | 0.47 | 23.68 | 81.5 | 1,205.7 | 869.8 | 33.3 | 12.8 | 7.0 | 5.4 | 1.0 | 0.2 | 0.2 | 0.7 |
| 10-630X | 0.44 | 14.78 | 47.5 | 702.8 | 507.0 | 19.4 | 7.5 | 4.1 | 3.2 | 0.6 | 0.1 | 0.1 | 0.4 |
| 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 |
| 10-630Z | 0.47 | 45.66 | 156.2 | 2,310.6 | 1,666.9 | 63.7 | 24.6 | 13.4 | 10.4 | 1.9 | 0.4 | 0.4 | 1.3 |
| 10-640 | 0.46 | 258.18 | 857.9 | 12,692.3 | 9,156.6 | 350.2 | 134.9 | 73.5 | 57.0 | 10.2 | 2.2 | 2.3 | 7.3 |
| 10-650 | 0.56 | 19.53 | 79.0 | 1,169.3 | 843.6 | 32.3 | 12.4 | 6.8 | 5.3 | 0.9 | 0.2 | 0.2 | 0.7 |
| 10-660 | 0.46 | 306.37 | 1,031.1 | 15,255.6 | 11,005.8 | 420.9 | 162.1 | 88.4 | 68.5 | 12.3 | 2.6 | 2.7 | 8.7 |
| 10-670 | 0.45 | 137.88 | 450.1 | 6,659.5 | 4,804.3 | 183.7 | 70.8 | 38.6 | 29.9 | 5.4 | 1.2 | 1.2 | 3.8 |
| 10-680 | 0.46 | 707.95 | 2,358.3 | 34,891.5 | 25,171.7 | 962.6 | 370.7 | 202.2 | 156.7 | 28.0 | 6.0 | 6.2 | 19.9 |
| 10-690 | 0.50 | 70.63 | 256.7 | 3,798.1 | 2,740.1 | 104.8 | 40.4 | 22.0 | 17.1 | 3.1 | 0.7 | 0.7 | 2.2 |
| 10-700 | 0.46 | 222.07 | 749.2 | 11,084.2 | 7,996.4 | 305.8 | 117.8 | 64.2 | 49.8 | 8.9 | 1.9 | 2.0 | 6.3 |
| 10-710 | 0.33 | 29.95 | 72.5 | 1,072.4 | 773.7 | 29.6 | 11.4 | 6.2 | 4.8 | 0.9 | 0.2 | 0.2 | 0.6 |
| 10-720A | 0.44 | 15.77 | 50.8 | 751.6 | 542.3 | 20.7 | 8.0 | 4.4 | 3.4 | 0.6 | 0.1 | 0.1 | 0.4 |
| 10-720B | 0.48 | 422.18 | 1,477.7 | 21,863.0 | 15,772.6 | 603.2 | 232.3 | 126.7 | 98.2 | 17.6 | 3.8 | 3.9 | 12.5 |
| 10-720C | 0.43 | 26.35 | 82.2 | 1,216.2 | 877.4 | 33.6 | 12.9 | 7.0 | 5.5 | 1.0 | 0.2 | 0.2 | 0.7 |
| 10-720D | 0.46 | 22.95 | 75.9 | 1,123.1 | 810.2 | 31.0 | 11.9 | 6.5 | 5.0 | 0.9 | 0.2 | 0.2 | 0.6 |
| 10-720E | 0.46 | 18.39 | 60.9 | 900.9 | 649.9 | 24.9 | 9.6 | 5.2 | 4.0 | 0.7 | 0.2 | 0.2 | 0.5 |
| 10-720F | 0.48 | 317.75 | 1,107.6 | 16,387.7 | 11,822.6 | 452.1 | 174.1 | 95.0 | 73.6 | 13.2 | 2.8 | 2.9 | 9.4 |
| 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 |
| 10-720H | 0.45 | 4.55 | 14.9 | 220.1 | 158.8 | 6.1 | 2.3 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-720I | 0.45 | 87.27 | 282.7 | 4,183.3 | 3,018.0 | 115.4 | 44.4 | 24.2 | 18.8 | 3.4 | 0.7 | 0.7 | 2.4 |
| 10-720J | 0.36 | 3.71 | 9.6 | 142.5 | 102.8 | 3.9 | 1.5 | 0.8 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-720K | 0.55 | 32.76 | 130.7 | 1,933.5 | 1,394.9 | 53.3 | 20.5 | 11.2 | 8.7 | 1.6 | 0.3 | 0.3 | 1.1 |
| 10-720L | 0.45 | 4.57 | 14.9 | 221.1 | 159.5 | 6.1 | 2.3 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 20-010 | 0.42 | 93.99 | 286.7 | 4,241.2 | 3,059.8 | 117.0 | 45.1 | 24.6 | 19.0 | 3.4 | 0.7 | 0.8 | 2.4 |
| 20-020 | 0.44 | 15.09 | 48.1 | 711.5 | 513.3 | 19.6 | 7.6 | 4.1 | 3.2 | 0.6 | 0.1 | 0.1 | 0.4 |
| 20-030 | 0.45 | 7.95 | 26.0 | 384.5 | 277.4 | 10.6 | 4.1 | 2.2 | 1.7 | 0.3 | 0.1 | 0.1 | 0.2 |
| 20-040 | 0.37 | 6.79 | 18.4 | 272.1 | 196.3 | 7.5 | 2.9 | 1.6 | 1.2 | 0.2 | 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 |
| 20-060 | 0.45 | 5.91 | 19.3 | 285.9 | 206.2 | 7.9 | 3.0 | 1.7 | 1.3 | 0.2 | 0.0 | 0.1 | 0.2 |
| 20-070 | 0.44 | 39.07 | 125.9 | 1,862.0 | 1,343.3 | 51.4 | 19.8 | 10.8 | 8.4 | 1.5 | 0.3 | 0.3 | 1.1 |
| 20-080 | 0.45 | 33.72 | 111.1 | 1,643.3 | 1,185.5 | 45.3 | 17.5 | 9.5 | 7.4 | 1.3 | 0.3 | 0.3 | 0.9 |
| 20-090 | 0.55 | 9.95 | 40.0 | 591.2 | 426.5 | 16.3 | 6.3 | 3.4 | 2.7 | 0.5 | 0.1 | 0.1 | 0.3 |
| 20-100 | 0.10 | 0.99 | 0.7 | 10.6 | 7.7 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-110 | 0.24 | 216.04 | 376.6 | 5,571.4 | 4,019.4 | 153.7 | 59.2 | 32.3 | 25.0 | 4.5 | 1.0 | 1.0 | 3.2 |
| 20-120 | 0.47 | 10.22 | 34.7 | 513.5 | 370.5 | 14.2 | 5.5 | 3.0 | 2.3 | 0.4 | 0.1 | 0.1 | 0.3 |
| 20-130 | 0.45 | 16.12 | 52.7 | 779.7 | 562.5 | 21.5 | 8.3 | 4.5 | 3.5 | 0.6 | 0.1 | 0.1 | 0.4 |
| 20-140 | 0.44 | 2.97 | 9.5 | 140.9 | 101.6 | 3.9 | 1.5 | 0.8 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 20-150 | 0.45 | 14.48 | 47.3 | 700.4 | 505.3 | 19.3 | 7.4 | 4.1 | 3.1 | 0.6 | 0.1 | 0.1 | 0.4 |
| 20-160 | 0.54 | 3.21 | 12.6 | 186.4 | 134.5 | 5.1 | 2.0 | 1.1 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 20-170 | 0.37 | 4.94 | 13.4 | 197.8 | 142.7 | 5.5 | 2.1 | 1.1 | 0.9 | 0.2 | 0.0 | 0.0 | 0.1 |
| 20-180 | 0.51 | 5.3 | 19.5 | 288.3 | 208.0 | 8.0 | 3.1 | 1.7 | 1.3 | 0.2 | 0.0 | 0.1 | 0.2 |
| 20-190 | 0.45 | 1.35 | 4.4 | 65.3 | 47.1 | 1.8 | 0.7 | 0.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 20-200 | 0.45 | 13.84 | 45.2 | 669.4 | 483.0 | 18.5 | 7.1 | 3.9 | 3.0 | 0.5 | 0.1 | 0.1 | 0.4 |
| 20-210A | 0.44 | 92.9 | 296.5 | 4,386.4 | 3,164.5 | 121.0 | 46.6 | 25.4 | 19.7 | 3.5 | 0.8 | 0.8 | 2.5 |
| 20-210B | 0.50 | 620.78 | 2,275.6 | 33,667.6 | 24,288.8 | 928.9 | 357.7 | 195.1 | 151.2 | 27.1 | 5.8 | 6.0 | 19.2 |
| 20-220 | 0.46 | 26.38 | 88.4 | 1,307.3 | 943.1 | 36.1 | 13.9 | 7.6 | 5.9 | 1.1 | 0.2 | 0.2 | 0.7 |
| 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 |
| 20-240 | 0.48 | 30.06 | 105.2 | 1,556.8 | 1,123.1 | 42.9 | 16.5 | 9.0 | 7.0 | 1.3 | 0.3 | 0.3 | 0.9 |
| 20-250 | 0.57 | 6.28 | 26.1 | 385.9 | 278.4 | 10.6 | 4.1 | 2.2 | 1.7 | 0.3 | 0.1 | 0.1 | 0.2 |
| 20-260 | 0.60 | 3.5 | 15.3 | 225.7 | 162.8 | 6.2 | 2.4 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 20-270 | 0.48 | 42.81 | 148.3 | 2,193.7 | 1,582.6 | 60.5 | 23.3 | 12.7 | 9.9 | 1.8 | 0.4 | 0.4 | 1.3 |
| 20-280 | 0.54 | 8.98 | 35.1 | 518.8 | 374.3 | 14.3 | 5.5 | 3.0 | 2.3 | 0.4 | 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 |
| 21-010 | 0.45 | 49.49 | 161.2 | 2,384.5 | 1,720.3 | 65.8 | 25.3 | 13.8 | 10.7 | 1.9 | 0.4 | 0.4 | 1.4 |
| 40-010 | 0.45 | 719.17 | 2,341.3 | 34,640.5 | 24,990.7 | 955.7 | 368.1 | 200.7 | 155.6 | 27.8 | 6.0 | 6.2 | 19.8 |
| 40-020 | 0.45 | 15.36 | 50.2 | 743.0 | 536.0 | 20.5 | 7.9 | 4.3 | 3.3 | 0.6 | 0.1 | 0.1 | 0.4 |
| 40-030 | 0.42 | 51.02 | 154.8 | 2,290.9 | 1,652.8 | 63.2 | 24.3 | 13.3 | 10.3 | 1.8 | 0.4 | 0.4 | 1.3 |
| 40-040 | 0.43 | 65.39 | 206.3 | 3,051.8 | 2,201.7 | 84.2 | 32.4 | 17.7 | 13.7 | 2.5 | 0.5 | 0.5 | 1.7 |
| 40-050 | 0.45 | 10.28 | 33.6 | 497.2 | 358.7 | 13.7 | 5.3 | 2.9 | 2.2 | 0.4 | 0.1 | 0.1 | 0.3 |
| 40-060 | 0.45 | 3.2 | 10.5 | 154.8 | 111.7 | 4.3 | 1.6 | 0.9 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-070 | 0.38 | 7.98 | 21.9 | 324.5 | 234.1 | 9.0 | 3.4 | 1.9 | 1.5 | 0.3 | 0.1 | 0.1 | 0.2 |
| 40-080 | 0.41 | 60.51 | 179.5 | 2,656.2 | 1,916.3 | 73.3 | 28.2 | 15.4 | 11.9 | 2.1 | 0.5 | 0.5 | 1.5 |
| 40-090 | 0.46 | 20.65 | 69.7 | 1,031.9 | 744.4 | 28.5 | 11.0 | 6.0 | 4.6 | 0.8 | 0.2 | 0.2 | 0.6 |
| 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 |
| 40-110 | 0.44 | 2.61 | 8.4 | 124.5 | 89.8 | 3.4 | 1.3 | 0.7 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-120 | 0.44 | 65.87 | 209.7 | 3,103.1 | 2,238.7 | 85.6 | 33.0 | 18.0 | 13.9 | 2.5 | 0.5 | 0.6 | 1.8 |
| 40-130 | 0.45 | 35.01 | 114.9 | 1,700.5 | 1,226.8 | 46.9 | 18.1 | 9.9 | 7.6 | 1.4 | 0.3 | 0.3 | 1.0 |
| 40-140 | 0.35 | 125.46 | 317.0 | 4,689.4 | 3,383.0 | 129.4 | 49.8 | 27.2 | 21.1 | 3.8 | 0.8 | 0.8 | 2.7 |
| 40-150 | 0.47 | 24.31 | 83.7 | 1,237.9 | 893.1 | 34.2 | 13.2 | 7.2 | 5.6 | 1.0 | 0.2 | 0.2 | 0.7 |
| 40-160 | 0.49 | 30.99 | 111.3 | 1,646.7 | 1,188.0 | 45.4 | 17.5 | 9.5 | 7.4 | 1.3 | 0.3 | 0.3 | 0.9 |

# 2006 SUMMER POLLUTANT LOADINGS BY OUTFALL

**2006 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/06 - 08/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Summer Median Event Mean Concentration | | | 7.6 | 112 | 81 | 3.09 | 1.190 | 0.649 | 0.503 | 0.090 | 0.019 | 0.020 | 0.064 |
| Precipitation (meters) | 0.279 | | | | | | | | | | | | |
| 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 |
| 40-180 | 0.54 | 16.8 | 65.7 | 972.2 | 701.3 | 26.8 | 10.3 | 5.6 | 4.4 | 0.8 | 0.2 | 0.2 | 0.6 |
| 40-190 | 0.53 | 65.53 | 251.7 | 3,724.5 | 2,687.0 | 102.8 | 39.6 | 21.6 | 16.7 | 3.0 | 0.6 | 0.7 | 2.1 |
| 40-200 | 0.46 | 24.75 | 83.1 | 1,229.9 | 887.3 | 33.9 | 13.1 | 7.1 | 5.5 | 1.0 | 0.2 | 0.2 | 0.7 |
| 40-210 | 0.54 | 17.26 | 68.3 | 1,010.8 | 729.2 | 27.9 | 10.7 | 5.9 | 4.5 | 0.8 | 0.2 | 0.2 | 0.6 |
| 40-220 | 0.47 | 100.58 | 341.6 | 5,054.1 | 3,646.2 | 139.4 | 53.7 | 29.3 | 22.7 | 4.1 | 0.9 | 0.9 | 2.9 |
| 40-230 | 0.44 | 13.78 | 44.5 | 658.9 | 475.3 | 18.2 | 7.0 | 3.8 | 3.0 | 0.5 | 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 |
| 40-250 | 0.60 | 1.15 | 5.0 | 74.2 | 53.5 | 2.0 | 0.8 | 0.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 40-260 | 0.45 | 3.49 | 11.4 | 168.8 | 121.8 | 4.7 | 1.8 | 1.0 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-270 | 0.45 | 9.59 | 31.4 | 463.9 | 334.6 | 12.8 | 4.9 | 2.7 | 2.1 | 0.4 | 0.1 | 0.1 | 0.3 |
| 40-280 | 0.53 | 12.76 | 48.8 | 721.3 | 520.3 | 19.9 | 7.7 | 4.2 | 3.2 | 0.6 | 0.1 | 0.1 | 0.4 |
| 40-290 | 0.51 | 13.73 | 51.1 | 755.7 | 545.2 | 20.8 | 8.0 | 4.4 | 3.4 | 0.6 | 0.1 | 0.1 | 0.4 |
| 40-300 | 0.52 | 10.38 | 39.3 | 581.3 | 419.4 | 16.0 | 6.2 | 3.4 | 2.6 | 0.5 | 0.1 | 0.1 | 0.3 |
| 40-310 | 0.45 | 97.86 | 321.8 | 4,761.3 | 3,434.9 | 131.4 | 50.6 | 27.6 | 21.4 | 3.8 | 0.8 | 0.8 | 2.7 |
| 40-320 | 0.60 | 9.43 | 41.1 | 608.2 | 438.8 | 16.8 | 6.5 | 3.5 | 2.7 | 0.5 | 0.1 | 0.1 | 0.3 |
| 40-330 | 0.59 | 15.34 | 66.1 | 977.3 | 705.0 | 27.0 | 10.4 | 5.7 | 4.4 | 0.8 | 0.2 | 0.2 | 0.6 |
| 40-340 | 0.53 | 35.27 | 136.6 | 2,020.4 | 1,457.6 | 55.7 | 21.5 | 11.7 | 9.1 | 1.6 | 0.3 | 0.4 | 1.2 |
| 40-350 | 0.60 | 8.99 | 39.2 | 579.8 | 418.3 | 16.0 | 6.2 | 3.4 | 2.6 | 0.5 | 0.1 | 0.1 | 0.3 |
| 40-360 | 0.60 | 8.09 | 35.3 | 521.8 | 376.4 | 14.4 | 5.5 | 3.0 | 2.3 | 0.4 | 0.1 | 0.1 | 0.3 |
| 40-370 | 0.58 | 12.41 | 52.2 | 771.6 | 556.7 | 21.3 | 8.2 | 4.5 | 3.5 | 0.6 | 0.1 | 0.1 | 0.4 |
| 40-380 | 0.39 | 24.92 | 71.2 | 1,053.8 | 760.3 | 29.1 | 11.2 | 6.1 | 4.7 | 0.8 | 0.2 | 0.2 | 0.6 |
| 40-390 | 0.58 | 5.72 | 24.1 | 356.6 | 257.2 | 9.8 | 3.8 | 2.1 | 1.6 | 0.3 | 0.1 | 0.1 | 0.2 |
| 40-400 | 0.10 | 1.07 | 0.8 | 11.5 | 8.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 41-010 | 0.38 | 94.73 | 259.8 | 3,843.3 | 2,772.7 | 106.0 | 40.8 | 22.3 | 17.3 | 3.1 | 0.7 | 0.7 | 2.2 |
| 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 |
| 41-030 | 0.50 | 60.47 | 220.5 | 3,262.8 | 2,353.9 | 90.0 | 34.7 | 18.9 | 14.7 | 2.6 | 0.6 | 0.6 | 1.9 |
| 41-040 | 0.57 | 35.59 | 148.2 | 2,192.0 | 1,581.4 | 60.5 | 23.3 | 12.7 | 9.8 | 1.8 | 0.4 | 0.4 | 1.3 |
| 41-050 | 0.60 | 10.48 | 45.7 | 675.9 | 487.6 | 18.6 | 7.2 | 3.9 | 3.0 | 0.5 | 0.1 | 0.1 | 0.4 |
| 41-060 | 0.60 | 2.95 | 12.9 | 190.3 | 137.3 | 5.2 | 2.0 | 1.1 | 0.9 | 0.2 | 0.0 | 0.0 | 0.1 |
| 51-010 | 0.45 | 29.63 | 97.2 | 1,437.5 | 1,037.0 | 39.7 | 15.3 | 8.3 | 6.5 | 1.2 | 0.2 | 0.3 | 0.8 |
| 51-020 | 0.45 | 4.55 | 14.9 | 220.1 | 158.8 | 6.1 | 2.3 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 52-010 | 0.28 | 45.29 | 90.9 | 1,345.3 | 970.6 | 37.1 | 14.3 | 7.8 | 6.0 | 1.1 | 0.2 | 0.2 | 0.8 |
| 52-020 | 0.45 | 6.09 | 19.9 | 294.6 | 212.5 | 8.1 | 3.1 | 1.7 | 1.3 | 0.2 | 0.1 | 0.1 | 0.2 |
| 52-030 | 0.45 | 7.18 | 23.5 | 347.3 | 250.5 | 9.6 | 3.7 | 2.0 | 1.6 | 0.3 | 0.1 | 0.1 | 0.2 |
| 52-040 | 0.41 | 4.54 | 13.6 | 201.7 | 145.5 | 5.6 | 2.1 | 1.2 | 0.9 | 0.2 | 0.0 | 0.0 | 0.1 |
| 52-050 | 0.44 | 15.3 | 48.4 | 715.4 | 516.1 | 19.7 | 7.6 | 4.1 | 3.2 | 0.6 | 0.1 | 0.1 | 0.4 |
| 52-060 | 0.10 | 3.22 | 2.3 | 34.6 | 25.0 | 1.0 | 0.4 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52-070 | 0.42 | 86.94 | 267.3 | 3,954.7 | 2,853.0 | 109.1 | 42.0 | 22.9 | 17.8 | 3.2 | 0.7 | 0.7 | 2.3 |
| 52-080 | 0.24 | 8.08 | 14.2 | 210.2 | 151.6 | 5.8 | 2.2 | 1.2 | 0.9 | 0.2 | 0.0 | 0.0 | 0.1 |
| 52-090 | 0.45 | 4.89 | 16.0 | 236.5 | 170.6 | 6.5 | 2.5 | 1.4 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 52-100A/B | 0.27 | 11.89 | 23.0 | 340.8 | 245.8 | 9.4 | 3.6 | 2.0 | 1.5 | 0.3 | 0.1 | 0.1 | 0.2 |
| 52-110 | 0.45 | 8.84 | 28.7 | 424.2 | 306.0 | 11.7 | 4.5 | 2.5 | 1.9 | 0.3 | 0.1 | 0.1 | 0.2 |
| 52-120 | 0.45 | 14.74 | 48.2 | 713.0 | 514.4 | 19.7 | 7.6 | 4.1 | 3.2 | 0.6 | 0.1 | 0.1 | 0.4 |
| 52-130 | 0.31 | 7.18 | 16.4 | 242.9 | 175.3 | 6.7 | 2.6 | 1.4 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 53-010 | 0.45 | 7.03 | 23.0 | 340.0 | 245.3 | 9.4 | 3.6 | 2.0 | 1.5 | 0.3 | 0.1 | 0.1 | 0.2 |
| 53-020 | 0.28 | 12.38 | 24.9 | 367.8 | 265.3 | 10.1 | 3.9 | 2.1 | 1.7 | 0.3 | 0.1 | 0.1 | 0.2 |
| 53-030 | 0.44 | 11.37 | 36.1 | 533.9 | 385.2 | 14.7 | 5.7 | 3.1 | 2.4 | 0.4 | 0.1 | 0.1 | 0.3 |
| 53-040 | 0.45 | 2.78 | 9.1 | 134.5 | 97.0 | 3.7 | 1.4 | 0.8 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 53-050 | 0.45 | 13.66 | 44.7 | 660.7 | 476.7 | 18.2 | 7.0 | 3.8 | 3.0 | 0.5 | 0.1 | 0.1 | 0.4 |
| 53-060 | 0.45 | 20.37 | 66.6 | 985.3 | 710.8 | 27.2 | 10.5 | 5.7 | 4.4 | 0.8 | 0.2 | 0.2 | 0.6 |
| 53-070 | 0.45 | 4.89 | 16.0 | 236.5 | 170.6 | 6.5 | 2.5 | 1.4 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 53-080 | 0.39 | 5.81 | 16.6 | 246.2 | 177.6 | 6.8 | 2.6 | 1.4 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 53-090 | 0.46 | 59.59 | 198.8 | 2,941.1 | 2,121.8 | 81.1 | 31.2 | 17.0 | 13.2 | 2.4 | 0.5 | 0.5 | 1.7 |
| 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 |
| 53-110 | 0.38 | 4.59 | 12.8 | 189.9 | 137.0 | 5.2 | 2.0 | 1.1 | 0.9 | 0.2 | 0.0 | 0.0 | 0.1 |
| 53-120A/B | 0.46 | 129.79 | 429.6 | 6,356.3 | 4,585.6 | 175.4 | 67.5 | 36.8 | 28.5 | 5.1 | 1.1 | 1.1 | 3.6 |
| 53-130 | 0.45 | 5.02 | 16.4 | 242.8 | 175.2 | 6.7 | 2.6 | 1.4 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 53-140 | 0.45 | 6.36 | 20.8 | 307.6 | 221.9 | 8.5 | 3.3 | 1.8 | 1.4 | 0.2 | 0.1 | 0.1 | 0.2 |
| 53-150 | 0.48 | 90.4 | 317.8 | 4,701.2 | 3,391.6 | 129.7 | 50.0 | 27.2 | 21.1 | 3.8 | 0.8 | 0.8 | 2.7 |
| 53-160 | 0.47 | 252.19 | 866.2 | 12,815.7 | 9,245.6 | 353.6 | 136.2 | 74.3 | 57.6 | 10.3 | 2.2 | 2.3 | 7.3 |
| 53-170 | 0.36 | 6.39 | 16.8 | 247.9 | 178.8 | 6.8 | 2.6 | 1.4 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 53-180 | 0.10 | 8.09 | 5.9 | 87.0 | 62.7 | 2.4 | 0.9 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 53-190 | 0.30 | 11.41 | 24.9 | 368.6 | 265.9 | 10.2 | 3.9 | 2.1 | 1.7 | 0.3 | 0.1 | 0.1 | 0.2 |
| 54-010A/B | 0.44 | 84.93 | 268.5 | 3,971.9 | 2,865.4 | 109.6 | 42.2 | 23.0 | 17.8 | 3.2 | 0.7 | 0.7 | 2.3 |
| 54-040A/B | 0.49 | 255.14 | 917.4 | 13,573.6 | 9,792.4 | 374.5 | 144.2 | 78.7 | 61.0 | 10.9 | 2.4 | 2.4 | 7.8 |
| 54-050 | 0.17 | 9.27 | 11.7 | 173.3 | 125.0 | 4.8 | 1.8 | 1.0 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 54-060 | 0.44 | 32.13 | 102.5 | 1,517.0 | 1,094.4 | 41.9 | 16.1 | 8.8 | 6.8 | 1.2 | 0.3 | 0.3 | 0.9 |
| 54-070 | 0.36 | 60.8 | 158.4 | 2,343.4 | 1,690.6 | 64.7 | 24.9 | 13.6 | 10.5 | 1.9 | 0.4 | 0.4 | 1.3 |
| 54-080A/B/C | 0.46 | 414.26 | 1,375.7 | 20,353.5 | 14,683.6 | 561.5 | 216.3 | 117.9 | 91.4 | 16.4 | 3.5 | 3.6 | 11.6 |
| 54-090 | 0.10 | 3.55 | 2.6 | 38.2 | 27.5 | 1.1 | 0.4 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-100A/B | 0.60 | 114.24 | 494.4 | 7,314.9 | 5,277.2 | 201.8 | 77.7 | 42.4 | 32.9 | 5.9 | 1.3 | 1.3 | 4.2 |
| 54-110 | 0.45 | 24.55 | 80.3 | 1,187.5 | 856.7 | 32.8 | 12.6 | 6.9 | 5.3 | 1.0 | 0.2 | 0.2 | 0.7 |
| 54-120 | 0.46 | 62.08 | 206.1 | 3,049.2 | 2,199.7 | 84.1 | 32.4 | 17.7 | 13.7 | 2.5 | 0.5 | 0.5 | 1.7 |
| 54-130 | 0.10 | 1.07 | 0.8 | 11.5 | 8.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-140A/B | 0.41 | 113.01 | 334.9 | 4,955.3 | 3,574.9 | 136.7 | 52.6 | 28.7 | 22.3 | 4.0 | 0.9 | 0.9 | 2.8 |
| 54-150 | 0.45 | 55.34 | 179.0 | 2,649.0 | 1,911.1 | 73.1 | 28.1 | 15.4 | 11.9 | 2.1 | 0.5 | 0.5 | 1.5 |

# 2006 SUMMER POLLUTANT LOADINGS BY OUTFALL

**2006 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/06 - 08/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Summer Median Event Mean Concentration | | | 7.6 | 112 | 81 | 3.09 | 1.190 | 0.649 | 0.503 | 0.090 | 0.019 | 0.020 | 0.064 |
| Precipitation (meters) | 0.279 | | | | | | | | | | | | |
| 54-160 | 0.60 | 2.62 | 11.4 | 169.0 | 121.9 | 4.7 | 1.8 | 1.0 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 54-170 | 0.59 | 8.08 | 34.9 | 516.4 | 372.6 | 14.2 | 5.5 | 3.0 | 2.3 | 0.4 | 0.1 | 0.1 | 0.3 |
| 54-180 | 0.60 | 2.82 | 12.3 | 181.9 | 131.2 | 5.0 | 1.9 | 1.1 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 54-190 | 0.10 | 2.2 | 1.6 | 23.6 | 17.1 | 0.7 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-200 | 0.10 | 2.13 | 1.5 | 22.9 | 16.5 | 0.6 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-210 | 0.10 | 1.14 | 0.8 | 12.3 | 8.8 | 0.3 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 55-010 | 0.60 | 14.98 | 65.3 | 966.1 | 697.0 | 26.7 | 10.3 | 5.6 | 4.3 | 0.8 | 0.2 | 0.2 | 0.6 |
| 55-020 | 0.60 | 189.58 | 821.0 | 12,147.2 | 8,763.3 | 335.1 | 129.1 | 70.4 | 54.6 | 9.8 | 2.1 | 2.2 | 6.9 |
| 56-010 | 0.60 | 67.62 | 294.8 | 4,361.0 | 3,146.2 | 120.3 | 46.3 | 25.3 | 19.6 | 3.5 | 0.8 | 0.8 | 2.5 |
| 57-010 | 0.53 | 26.1 | 101.2 | 1,496.6 | 1,079.7 | 41.3 | 15.9 | 8.7 | 6.7 | 1.2 | 0.3 | 0.3 | 0.9 |
| 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 |
| 57-030 | 0.45 | 18.22 | 59.6 | 881.3 | 635.8 | 24.3 | 9.4 | 5.1 | 4.0 | 0.7 | 0.2 | 0.2 | 0.5 |
| 57-040 | 0.35 | 39.88 | 101.1 | 1,495.9 | 1,079.1 | 41.3 | 15.9 | 8.7 | 6.7 | 1.2 | 0.3 | 0.3 | 0.9 |
| 57-050 | 0.45 | 7.9 | 25.8 | 382.1 | 275.7 | 10.5 | 4.1 | 2.2 | 1.7 | 0.3 | 0.1 | 0.1 | 0.2 |
| 57-060 | 0.46 | 26.11 | 87.7 | 1,297.9 | 936.3 | 35.8 | 13.8 | 7.5 | 5.8 | 1.0 | 0.2 | 0.2 | 0.7 |
| 57-070 | 0.45 | 81.33 | 266.5 | 3,943.3 | 2,844.8 | 108.8 | 41.9 | 22.9 | 17.7 | 3.2 | 0.7 | 0.7 | 2.3 |
| 57-080 | 0.42 | 5.54 | 17.0 | 251.7 | 181.6 | 6.9 | 2.7 | 1.5 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 57-090 | 0.47 | 77.77 | 265.2 | 3,923.1 | 2,830.2 | 108.2 | 41.7 | 22.7 | 17.6 | 3.2 | 0.7 | 0.7 | 2.2 |
| 57-100A/B | 0.47 | 313.43 | 1,075.7 | 15,915.6 | 11,482.0 | 439.1 | 169.1 | 92.2 | 71.5 | 12.8 | 2.8 | 2.8 | 9.1 |
| 57-110 | 0.54 | 21.6 | 84.9 | 1,255.6 | 905.8 | 34.6 | 13.3 | 7.3 | 5.6 | 1.0 | 0.2 | 0.2 | 0.7 |
| 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 |
| 57-130 | 0.10 | 1.16 | 0.8 | 12.5 | 9.0 | 0.3 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57-140 | 0.10 | 1.55 | 1.1 | 16.7 | 12.0 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57-150 | 0.43 | 35.68 | 111.9 | 1,655.3 | 1,194.2 | 45.7 | 17.6 | 9.6 | 7.4 | 1.3 | 0.3 | 0.3 | 0.9 |
| 57-160 | 0.10 | 1.89 | 1.4 | 20.3 | 14.7 | 0.6 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 61-010 | 0.55 | 2.86 | 11.5 | 169.6 | 122.4 | 4.7 | 1.8 | 1.0 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 62-010 | 0.45 | 27.84 | 91.4 | 1,352.8 | 976.0 | 37.3 | 14.4 | 7.8 | 6.1 | 1.1 | 0.2 | 0.2 | 0.8 |
| 63-010 | 0.45 | 388.79 | 1,277.1 | 18,894.8 | 13,631.2 | 521.3 | 200.8 | 109.5 | 84.9 | 15.2 | 3.3 | 3.4 | 10.8 |
| 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 |
| 64-100 | 0.45 | 24.92 | 81.4 | 1,204.3 | 868.8 | 33.2 | 12.8 | 7.0 | 5.4 | 1.0 | 0.2 | 0.2 | 0.7 |
| 64-110 | 0.45 | 6.01 | 19.6 | 290.7 | 209.7 | 8.0 | 3.1 | 1.7 | 1.3 | 0.2 | 0.1 | 0.1 | 0.2 |
| 64-120 | 0.45 | 16.04 | 52.4 | 775.9 | 559.7 | 21.4 | 8.2 | 4.5 | 3.5 | 0.6 | 0.1 | 0.1 | 0.4 |
| 64-130 | 0.45 | 2.44 | 8.0 | 118.0 | 85.1 | 3.3 | 1.3 | 0.7 | 0.5 | 0.1 | 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 |
| 65-020 | 0.53 | 38.46 | 147.9 | 2,187.6 | 1,578.2 | 60.4 | 23.2 | 12.7 | 9.8 | 1.8 | 0.4 | 0.4 | 1.3 |
| 70-010 | 0.46 | 6.23 | 20.8 | 307.1 | 221.6 | 8.5 | 3.3 | 1.8 | 1.4 | 0.2 | 0.1 | 0.1 | 0.2 |
| 70-015 | 0.45 | 11.69 | 38.2 | 565.4 | 407.9 | 15.6 | 6.0 | 3.3 | 2.5 | 0.5 | 0.1 | 0.1 | 0.3 |
| 70-020 | 0.45 | 37.55 | 122.8 | 1,816.3 | 1,310.3 | 50.1 | 19.3 | 10.5 | 8.2 | 1.5 | 0.3 | 0.3 | 1.0 |
| 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 |
| 70-030 | 0.45 | 13.48 | 44.0 | 651.5 | 470.0 | 18.0 | 6.9 | 3.8 | 2.9 | 0.5 | 0.1 | 0.1 | 0.4 |
| 70-035 | 0.45 | 4.53 | 14.8 | 219.1 | 158.1 | 6.0 | 2.3 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-040 | 0.45 | 2.42 | 7.9 | 117.1 | 84.4 | 3.2 | 1.2 | 0.7 | 0.5 | 0.1 | 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 |
| 70-050 | 0.45 | 17.41 | 56.9 | 842.1 | 607.5 | 23.2 | 8.9 | 4.9 | 3.8 | 0.7 | 0.1 | 0.1 | 0.5 |
| 70-055 | 0.46 | 333.43 | 1,124.3 | 16,633.9 | 12,000.2 | 458.9 | 176.7 | 96.4 | 74.7 | 13.4 | 2.9 | 3.0 | 9.5 |
| 70-060 | 0.45 | 3.53 | 11.5 | 170.7 | 123.2 | 4.7 | 1.8 | 1.0 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-065 | 0.45 | 1.89 | 6.2 | 91.4 | 66.0 | 2.5 | 1.0 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-070 | 0.45 | 5.8 | 19.0 | 280.5 | 202.4 | 7.7 | 3.0 | 1.6 | 1.3 | 0.2 | 0.0 | 0.0 | 0.2 |
| 70-075 | 0.43 | 5 | 15.7 | 231.8 | 167.3 | 6.4 | 2.5 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-080 | 0.46 | 11.96 | 40.1 | 593.9 | 428.5 | 16.4 | 6.3 | 3.4 | 2.7 | 0.5 | 0.1 | 0.1 | 0.3 |
| 70-085 | 0.45 | 229.48 | 745.6 | 11,031.7 | 7,958.6 | 304.4 | 117.2 | 63.9 | 49.5 | 8.9 | 1.9 | 2.0 | 6.3 |
| 70-090 | 0.45 | 18.57 | 60.7 | 898.2 | 648.0 | 24.8 | 9.5 | 5.2 | 4.0 | 0.7 | 0.2 | 0.2 | 0.5 |
| 70-095 | 0.45 | 9.99 | 32.7 | 483.2 | 348.6 | 13.3 | 5.1 | 2.8 | 2.2 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-100 | 0.45 | 9.64 | 31.5 | 466.3 | 336.4 | 12.9 | 5.0 | 2.7 | 2.1 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-105 | 0.45 | 1.63 | 5.3 | 78.8 | 56.9 | 2.2 | 0.8 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-110 | 0.45 | 18.13 | 59.3 | 876.9 | 632.7 | 24.2 | 9.3 | 5.1 | 3.9 | 0.7 | 0.2 | 0.2 | 0.5 |
| 70-115 | 0.45 | 3.71 | 12.1 | 179.5 | 129.5 | 5.0 | 1.9 | 1.0 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-120 | 0.45 | 4.22 | 13.8 | 204.1 | 147.3 | 5.6 | 2.2 | 1.2 | 0.9 | 0.2 | 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 |
| 70-130 | 0.49 | 34.29 | 123.0 | 1,819.7 | 1,312.8 | 50.2 | 19.3 | 10.5 | 8.2 | 1.5 | 0.3 | 0.3 | 1.0 |
| 70-135 | 0.45 | 7.46 | 24.4 | 360.8 | 260.3 | 10.0 | 3.8 | 2.1 | 1.6 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-140 | 0.60 | 0.78 | 3.4 | 50.3 | 36.3 | 1.4 | 0.5 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-145 | 0.60 | 9.19 | 40.1 | 592.7 | 427.6 | 16.4 | 6.3 | 3.4 | 2.7 | 0.5 | 0.1 | 0.1 | 0.3 |
| 70-150 | 0.45 | 4.51 | 14.7 | 218.1 | 157.4 | 6.0 | 2.3 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-155 | 0.45 | 2.05 | 6.7 | 99.2 | 71.5 | 2.7 | 1.1 | 0.6 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-160 | 0.45 | 2.95 | 9.6 | 142.7 | 102.9 | 3.9 | 1.5 | 0.8 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-165 | 0.45 | 27.77 | 90.8 | 1,343.2 | 969.0 | 37.1 | 14.3 | 7.8 | 6.0 | 1.1 | 0.2 | 0.2 | 0.8 |
| 70-170 | 0.45 | 23.74 | 77.6 | 1,148.3 | 828.4 | 31.7 | 12.2 | 6.7 | 5.2 | 0.9 | 0.2 | 0.2 | 0.7 |
| 70-175 | 0.46 | 30.89 | 102.6 | 1,518.1 | 1,095.2 | 41.9 | 16.1 | 8.8 | 6.8 | 1.2 | 0.3 | 0.3 | 0.9 |
| 70-180 | 0.45 | 1.14 | 3.7 | 55.1 | 39.8 | 1.5 | 0.6 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-185 | 0.45 | 1.53 | 5.0 | 74.0 | 53.4 | 2.0 | 0.8 | 0.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-190 | 0.17 | 15.04 | 18.8 | 278.2 | 200.7 | 7.7 | 3.0 | 1.6 | 1.2 | 0.2 | 0.0 | 0.0 | 0.2 |
| 70-195 | 0.45 | 46.02 | 151.3 | 2,238.1 | 1,614.7 | 61.7 | 23.8 | 13.0 | 10.1 | 1.8 | 0.4 | 0.4 | 1.3 |
| 70-200 | 0.45 | 31.52 | 103.0 | 1,524.6 | 1,099.9 | 42.1 | 16.2 | 8.8 | 6.8 | 1.2 | 0.3 | 0.3 | 0.9 |
| 70-205 | 0.45 | 1.39 | 4.5 | 67.2 | 48.5 | 1.9 | 0.7 | 0.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-210 | 0.45 | 3.58 | 11.7 | 173.2 | 124.9 | 4.8 | 1.8 | 1.0 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-215 | 0.45 | 5.93 | 19.4 | 286.8 | 206.9 | 7.9 | 3.0 | 1.7 | 1.3 | 0.2 | 0.0 | 0.1 | 0.2 |

# 2006 SUMMER POLLUTANT LOADINGS BY OUTFALL

**2006 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/06 - 08/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Summer Median Event Mean Concentration** | | | 7.6 | 112 | 81 | 3.09 | 1.190 | 0.649 | 0.503 | 0.090 | 0.019 | 0.020 | 0.064 |
| **Precipitation (meters)** | **0.279** | | | | | | | | | | | | |
| 70-220 | 0.45 | 4.54 | 14.8 | 219.6 | 158.4 | 6.1 | 2.3 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-225 | 0.45 | 4.99 | 16.3 | 241.4 | 174.1 | 6.7 | 2.6 | 1.4 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-230 | 0.45 | 4.72 | 15.4 | 228.3 | 164.7 | 6.3 | 2.4 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-235 | 0.45 | 5.04 | 16.5 | 243.8 | 175.9 | 6.7 | 2.6 | 1.4 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-240 | 0.45 | 4.52 | 14.8 | 218.6 | 157.7 | 6.0 | 2.3 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-245 | 0.44 | 9.98 | 31.8 | 470.9 | 339.7 | 13.0 | 5.0 | 2.7 | 2.1 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-250 | 0.48 | 41.27 | 144.6 | 2,139.8 | 1,543.7 | 59.0 | 22.7 | 12.4 | 9.6 | 1.7 | 0.4 | 0.4 | 1.2 |
| 70-255 | 0.45 | 45.37 | 148.4 | 2,195.2 | 1,583.7 | 60.6 | 23.3 | 12.7 | 9.9 | 1.8 | 0.4 | 0.4 | 1.3 |
| 70-260 | 0.46 | 24.9 | 82.8 | 1,225.2 | 883.9 | 33.8 | 13.0 | 7.1 | 5.5 | 1.0 | 0.2 | 0.2 | 0.7 |
| 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 |
| 70-270 | 0.45 | 4.66 | 15.2 | 225.4 | 162.6 | 6.2 | 2.4 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-275 | 0.45 | 4.28 | 14.0 | 207.0 | 149.4 | 5.7 | 2.2 | 1.2 | 0.9 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-280 | 0.45 | 9.39 | 30.8 | 455.0 | 328.2 | 12.6 | 4.8 | 2.6 | 2.0 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-285 | 0.45 | 19.03 | 62.1 | 919.5 | 663.3 | 25.4 | 9.8 | 5.3 | 4.1 | 0.7 | 0.2 | 0.2 | 0.5 |
| 70-290 | 0.45 | 2.37 | 7.7 | 113.7 | 82.0 | 3.1 | 1.2 | 0.7 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-295 | 0.45 | 7.18 | 23.5 | 347.3 | 250.5 | 9.6 | 3.7 | 2.0 | 1.6 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-300 | 0.10 | 0.4 | 0.3 | 4.3 | 3.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-305 | 0.45 | 12.68 | 41.1 | 607.8 | 438.5 | 16.8 | 6.5 | 3.5 | 2.7 | 0.5 | 0.1 | 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 |
| 70-315 | 0.30 | 5.79 | 12.6 | 186.7 | 134.7 | 5.2 | 2.0 | 1.1 | 0.8 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-320 | 0.44 | 2.32 | 7.4 | 109.5 | 79.0 | 3.0 | 1.2 | 0.6 | 0.5 | 0.1 | 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 |
| 70-330 | 0.47 | 279.41 | 956.2 | 14,147.1 | 10,206.1 | 390.3 | 150.3 | 82.0 | 63.5 | 11.4 | 2.5 | 2.5 | 8.1 |
| 70-335 | 0.45 | 1.99 | 6.5 | 96.3 | 69.4 | 2.7 | 1.0 | 0.6 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-340 | 0.39 | 22.25 | 63.6 | 940.9 | 678.8 | 26.0 | 10.0 | 5.5 | 4.2 | 0.8 | 0.2 | 0.2 | 0.5 |
| 70-345 | 0.45 | 3.81 | 12.5 | 184.3 | 133.0 | 5.1 | 2.0 | 1.1 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-350 | 0.49 | 314.4 | 1,128.6 | 16,698.5 | 12,046.8 | 460.7 | 177.4 | 96.8 | 75.0 | 13.4 | 2.9 | 3.0 | 9.5 |
| 70-355 | 0.45 | 1.29 | 4.2 | 62.4 | 45.0 | 1.7 | 0.7 | 0.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-360 | 0.45 | 131.96 | 435.7 | 6,446.9 | 4,651.0 | 177.9 | 68.5 | 37.4 | 29.0 | 5.2 | 1.1 | 1.1 | 3.7 |
| 70-365 | 0.45 | 6.7 | 21.9 | 324.1 | 233.8 | 8.9 | 3.4 | 1.9 | 1.5 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-370 | 0.44 | 3.75 | 12.1 | 178.6 | 128.8 | 4.9 | 1.9 | 1.0 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-375 | 0.47 | 7.1 | 24.4 | 360.7 | 260.2 | 10.0 | 3.8 | 2.1 | 1.6 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-380 | 0.45 | 14.4 | 47.1 | 696.5 | 502.5 | 19.2 | 7.4 | 4.0 | 3.1 | 0.6 | 0.1 | 0.1 | 0.4 |
| 70-385 | 0.45 | 14.97 | 48.9 | 724.1 | 522.4 | 20.0 | 7.7 | 4.2 | 3.3 | 0.6 | 0.1 | 0.1 | 0.4 |
| 70-390 | 0.46 | 58.11 | 195.6 | 2,893.4 | 2,087.4 | 79.8 | 30.7 | 16.8 | 13.0 | 2.3 | 0.5 | 0.5 | 1.7 |
| 70-395 | 0.43 | 57.19 | 178.5 | 2,640.4 | 1,904.9 | 72.8 | 28.1 | 15.3 | 11.9 | 2.1 | 0.5 | 0.5 | 1.5 |
| 70-400 | 0.44 | 9.67 | 30.8 | 456.1 | 329.1 | 12.6 | 4.8 | 2.6 | 2.0 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-405 | 0.25 | 7.16 | 13.0 | 192.5 | 138.9 | 5.3 | 2.0 | 1.1 | 0.9 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-410 | 0.43 | 5.8 | 18.1 | 267.4 | 192.9 | 7.4 | 2.8 | 1.5 | 1.2 | 0.2 | 0.0 | 0.0 | 0.2 |
| 70-415 | 0.45 | 120.75 | 398.2 | 5,892.1 | 4,250.7 | 162.6 | 62.6 | 34.1 | 26.5 | 4.7 | 1.0 | 1.0 | 3.4 |
| 70-420 | 0.45 | 16.99 | 55.5 | 821.8 | 592.9 | 22.7 | 8.7 | 4.8 | 3.7 | 0.7 | 0.1 | 0.1 | 0.5 |
| 70-425 | 0.51 | 20.63 | 76.6 | 1,133.1 | 817.5 | 31.3 | 12.0 | 6.6 | 5.1 | 0.9 | 0.2 | 0.2 | 0.6 |
| 70-430 | 0.10 | 6.19 | 4.5 | 66.5 | 48.0 | 1.8 | 0.7 | 0.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-435 | 0.10 | 9.16 | 6.7 | 98.5 | 71.0 | 2.7 | 1.0 | 0.6 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-440 | 0.50 | 34.48 | 124.4 | 1,840.9 | 1,328.1 | 50.8 | 19.6 | 10.7 | 8.3 | 1.5 | 0.3 | 0.3 | 1.1 |
| 70-445 | 0.45 | 5.6 | 18.3 | 270.9 | 195.4 | 7.5 | 2.9 | 1.6 | 1.2 | 0.2 | 0.0 | 0.0 | 0.2 |
| 70-450 | 0.45 | 2.65 | 8.7 | 128.2 | 92.5 | 3.5 | 1.4 | 0.7 | 0.6 | 0.1 | 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 |
| 70-460 | 0.45 | 2.67 | 8.7 | 129.1 | 93.2 | 3.6 | 1.4 | 0.7 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-465 | 0.45 | 2.58 | 8.4 | 124.8 | 90.0 | 3.4 | 1.3 | 0.7 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-470 | 0.38 | 8.55 | 23.9 | 353.0 | 254.6 | 9.7 | 3.8 | 2.0 | 1.6 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-475 | 0.46 | 229.14 | 766.3 | 11,337.9 | 8,179.5 | 312.8 | 120.5 | 65.7 | 50.9 | 9.1 | 2.0 | 2.0 | 6.5 |
| 70-480 | 0.60 | 0.31 | 1.4 | 20.0 | 14.4 | 0.6 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-485 | 0.45 | 13.36 | 43.7 | 646.2 | 466.2 | 17.8 | 6.9 | 3.7 | 2.9 | 0.5 | 0.1 | 0.1 | 0.4 |
| 70-490 | 0.47 | 48.75 | 166.2 | 2,459.5 | 1,774.4 | 67.9 | 26.1 | 14.3 | 11.0 | 2.0 | 0.4 | 0.4 | 1.4 |
| 70-495 | 0.45 | 7.74 | 25.3 | 374.4 | 270.1 | 10.3 | 4.0 | 2.2 | 1.7 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-500 | 0.45 | 0.56 | 1.8 | 27.1 | 19.5 | 0.7 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-505 | 0.41 | 8.12 | 24.3 | 359.3 | 259.2 | 9.9 | 3.8 | 2.1 | 1.6 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-510 | 0.45 | 41.82 | 137.2 | 2,029.4 | 1,464.1 | 56.0 | 21.6 | 11.8 | 9.1 | 1.6 | 0.4 | 0.4 | 1.2 |
| 70-515 | 0.47 | 62.73 | 214.2 | 3,168.6 | 2,285.9 | 87.4 | 33.7 | 18.4 | 14.2 | 2.5 | 0.5 | 0.6 | 1.8 |
| 70-520 | 0.45 | 6.05 | 19.8 | 292.6 | 211.1 | 8.1 | 3.1 | 1.7 | 1.3 | 0.2 | 0.1 | 0.1 | 0.2 |
| 70-525 | 0.45 | 6.23 | 20.4 | 301.3 | 217.4 | 8.3 | 3.2 | 1.7 | 1.4 | 0.2 | 0.1 | 0.1 | 0.2 |
| 70-530 | 0.45 | 1.67 | 5.5 | 80.8 | 58.3 | 2.2 | 0.9 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-535 | 0.45 | 30.24 | 99.1 | 1,466.1 | 1,057.7 | 40.4 | 15.6 | 8.5 | 6.6 | 1.2 | 0.3 | 0.3 | 0.8 |
| 70-540 | 0.21 | 5.1 | 7.9 | 117.0 | 84.4 | 3.2 | 1.2 | 0.7 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-545 | 0.45 | 1.89 | 6.2 | 91.4 | 66.0 | 2.5 | 1.0 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-550 | 0.26 | 1.3 | 2.4 | 36.2 | 26.1 | 1.0 | 0.4 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-555 | 0.45 | 1.73 | 5.7 | 83.7 | 60.4 | 2.3 | 0.9 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-560 | 0.45 | 3.33 | 10.9 | 161.1 | 116.2 | 4.4 | 1.7 | 0.9 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-565 | 0.24 | 16.63 | 29.1 | 430.0 | 310.2 | 11.9 | 4.6 | 2.5 | 1.9 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-570 | 0.45 | 1.23 | 4.0 | 59.5 | 42.9 | 1.6 | 0.6 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-575 | 0.45 | 15.39 | 50.3 | 743.7 | 536.5 | 20.5 | 7.9 | 4.3 | 3.3 | 0.6 | 0.1 | 0.1 | 0.4 |
| 70-580 | 0.43 | 119.93 | 378.0 | 5,592.1 | 4,034.3 | 154.3 | 59.4 | 32.4 | 25.1 | 4.5 | 1.0 | 1.0 | 3.2 |
| 71-010 | 0.10 | 1.12 | 0.8 | 12.0 | 8.7 | 0.3 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 71-020 | 0.45 | 14.05 | 45.9 | 679.6 | 490.3 | 18.7 | 7.2 | 3.9 | 3.1 | 0.5 | 0.1 | 0.1 | 0.4 |
| 71-030 | 0.45 | 28.58 | 93.9 | 1,390.0 | 1,002.8 | 38.3 | 14.8 | 8.1 | 6.2 | 1.1 | 0.2 | 0.2 | 0.8 |
| 71-040 | 0.22 | 20.93 | 33.4 | 493.8 | 356.2 | 13.6 | 5.2 | 2.9 | 2.2 | 0.4 | 0.1 | 0.1 | 0.3 |

# 2006 SUMMER POLLUTANT LOADINGS BY OUTFALL

**2006 SUMMER POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (06/01/06 - 08/31/06)**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Summer Median Event Mean Concentration** | | | 7.6 | 112 | 81 | 3.09 | 1.190 | 0.649 | 0.503 | 0.090 | 0.019 | 0.020 | 0.064 |
| **Precipitation (meters)** | **0.279** | | | | | | | | | | | | |
| 71-050 | 0.46 | 120.42 | 400.7 | 5,928.2 | 4,276.8 | 163.6 | 63.0 | 34.4 | 26.6 | 4.8 | 1.0 | 1.1 | 3.4 |
| 71-060 | 0.45 | 3.11 | 10.2 | 150.4 | 108.5 | 4.2 | 1.6 | 0.9 | 0.7 | 0.1 | 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 |
| 71-080 | 0.46 | 101.79 | 337.4 | 4,992.3 | 3,601.6 | 137.7 | 53.0 | 28.9 | 22.4 | 4.0 | 0.9 | 0.9 | 2.9 |
| 71-090 | 0.45 | 6.5 | 21.0 | 311.3 | 224.6 | 8.6 | 3.3 | 1.8 | 1.4 | 0.3 | 0.1 | 0.1 | 0.2 |
| 71-100 | 0.10 | 1.99 | 1.4 | 21.4 | 15.4 | 0.6 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-010 | 0.18 | 17.32 | 22.0 | 326.0 | 235.2 | 9.0 | 3.5 | 1.9 | 1.5 | 0.3 | 0.1 | 0.1 | 0.2 |
| 72-020 | 0.40 | 24.7 | 70.9 | 1,049.1 | 756.8 | 28.9 | 11.1 | 6.1 | 4.7 | 0.8 | 0.2 | 0.2 | 0.6 |
| 72-030 | 0.10 | 5.25 | 3.8 | 56.4 | 40.7 | 1.6 | 0.6 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-040 | 0.42 | 166.54 | 504.0 | 7,456.5 | 5,379.3 | 205.7 | 79.2 | 43.2 | 33.5 | 6.0 | 1.3 | 1.3 | 4.3 |
| 72-050 | 0.10 | 5.16 | 3.7 | 55.5 | 40.0 | 1.5 | 0.6 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-060 | 0.36 | 113.04 | 297.1 | 4,395.1 | 3,170.7 | 121.3 | 46.7 | 25.5 | 19.7 | 3.5 | 0.8 | 0.8 | 2.5 |
| 72-070 | 0.10 | 2.21 | 1.6 | 23.8 | 17.1 | 0.7 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-080 | 0.60 | 4.74 | 20.7 | 305.7 | 220.5 | 8.4 | 3.2 | 1.8 | 1.4 | 0.2 | 0.1 | 0.1 | 0.2 |
| 72-090 | 0.45 | 68.71 | 223.2 | 3,302.6 | 2,382.6 | 91.1 | 35.1 | 19.1 | 14.8 | 2.7 | 0.6 | 0.6 | 1.9 |
| 72-100 | 0.46 | 68.32 | 229.8 | 3,400.1 | 2,453.0 | 93.8 | 36.1 | 19.7 | 15.3 | 2.7 | 0.6 | 0.6 | 1.9 |
| 72-110 | 0.10 | 3.22 | 2.3 | 34.6 | 25.0 | 1.0 | 0.4 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-120 | 0.45 | 62.98 | 205.9 | 3,046.3 | 2,197.7 | 84.0 | 32.4 | 17.7 | 13.7 | 2.4 | 0.5 | 0.5 | 1.7 |
| 72-130 | 0.46 | 58.06 | 192.5 | 2,847.9 | 2,054.5 | 78.6 | 30.3 | 16.5 | 12.8 | 2.3 | 0.5 | 0.5 | 1.6 |
| 72-140 | 0.10 | 10.19 | 7.4 | 109.5 | 79.0 | 3.0 | 1.2 | 0.6 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 72-150 | 0.10 | 4.76 | 3.5 | 51.2 | 36.9 | 1.4 | 0.5 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-160 | 0.10 | 4.55 | 3.3 | 48.9 | 35.3 | 1.3 | 0.5 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 73-010 | 0.44 | 20.76 | 66.2 | 979.4 | 706.5 | 27.0 | 10.4 | 5.7 | 4.4 | 0.8 | 0.2 | 0.2 | 0.6 |
| 73-020 | 0.44 | 57.47 | 184.8 | 2,734.0 | 1,972.4 | 75.4 | 29.0 | 15.8 | 12.3 | 2.2 | 0.5 | 0.5 | 1.6 |
| 73-030 | 0.10 | 21.56 | 15.7 | 231.7 | 167.2 | 6.4 | 2.5 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 74-010 | 0.48 | 44.39 | 154.4 | 2,283.9 | 1,647.7 | 63.0 | 24.3 | 13.2 | 10.3 | 1.8 | 0.4 | 0.4 | 1.3 |
| 74-020 | 0.45 | 4.41 | 14.4 | 213.3 | 153.9 | 5.9 | 2.3 | 1.2 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 75-005 | 0.45 | 12.39 | 40.5 | 598.6 | 431.8 | 16.5 | 6.4 | 3.5 | 2.7 | 0.5 | 0.1 | 0.1 | 0.3 |
| 75-010 | 0.60 | 3.65 | 15.9 | 235.4 | 169.8 | 6.5 | 2.5 | 1.4 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 75-020 | 0.45 | 1.53 | 5.0 | 74.0 | 53.4 | 2.0 | 0.8 | 0.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 75-030 | 0.45 | 8.38 | 27.4 | 405.3 | 292.4 | 11.2 | 4.3 | 2.3 | 1.8 | 0.3 | 0.1 | 0.1 | 0.2 |
| 75-040 | 0.45 | 14.74 | 48.2 | 713.0 | 514.4 | 19.7 | 7.6 | 4.1 | 3.2 | 0.6 | 0.1 | 0.1 | 0.4 |
| 76-010 | 0.46 | 907.31 | 3,057.5 | 45,236.3 | 32,634.8 | 1,248.0 | 480.6 | 262.1 | 203.2 | 36.4 | 7.8 | 8.0 | 25.8 |
| 76-020 | 0.46 | 88.62 | 293.4 | 4,340.6 | 3,131.4 | 119.8 | 46.1 | 25.2 | 19.5 | 3.5 | 0.8 | 0.8 | 2.5 |
| 76-030 | 0.45 | 7.55 | 24.7 | 365.2 | 263.5 | 10.1 | 3.9 | 2.1 | 1.6 | 0.3 | 0.1 | 0.1 | 0.2 |
| 76-040 | 0.19 | 4.67 | 6.3 | 93.4 | 67.4 | 2.6 | 1.0 | 0.5 | 0.4 | 0.1 | 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 |
| 81-010 | 0.10 | 31.17 | 22.6 | 335.0 | 241.7 | 9.2 | 3.6 | 1.9 | 1.5 | 0.3 | 0.1 | 0.1 | 0.2 |
| 82-010 | 0.49 | 23.53 | 83.2 | 1,230.7 | 887.8 | 34.0 | 13.1 | 7.1 | 5.5 | 1.0 | 0.2 | 0.2 | 0.7 |
| 82-020 | 0.45 | 73.45 | 242.7 | 3,590.8 | 2,590.5 | 99.1 | 38.2 | 20.8 | 16.1 | 2.9 | 0.6 | 0.6 | 2.1 |
| 82-030 | 0.45 | 90.04 | 297.4 | 4,400.7 | 3,174.8 | 121.4 | 46.8 | 25.5 | 19.8 | 3.5 | 0.8 | 0.8 | 2.5 |
| 82-040 | 0.46 | 98.49 | 331.9 | 4,911.2 | 3,543.1 | 135.5 | 52.2 | 28.5 | 22.1 | 3.9 | 0.9 | 0.9 | 2.8 |
| 83-010 | 0.45 | 6.59 | 21.5 | 318.8 | 230.0 | 8.8 | 3.4 | 1.8 | 1.4 | 0.3 | 0.1 | 0.1 | 0.2 |
| 83-015 | 0.45 | 0.99 | 3.2 | 47.9 | 34.5 | 1.3 | 0.5 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-020 | 0.43 | 85.96 | 271.5 | 4,017.2 | 2,898.1 | 110.8 | 42.7 | 23.3 | 18.0 | 3.2 | 0.7 | 0.7 | 2.3 |
| 83-025 | 0.45 | 51.23 | 167.5 | 2,478.0 | 1,787.7 | 68.4 | 26.3 | 14.4 | 11.1 | 2.0 | 0.4 | 0.4 | 1.4 |
| 83-030 | 0.60 | 0.82 | 3.6 | 52.9 | 38.2 | 1.5 | 0.6 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-040 | 0.10 | 1.08 | 0.8 | 11.6 | 8.4 | 0.3 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-050 | 0.45 | 40.4 | 132.4 | 1,959.5 | 1,413.6 | 54.1 | 20.8 | 11.4 | 8.8 | 1.6 | 0.3 | 0.3 | 1.1 |
| 83-060 | 0.45 | 10.05 | 32.9 | 486.1 | 350.7 | 13.4 | 5.2 | 2.8 | 2.2 | 0.4 | 0.1 | 0.1 | 0.3 |
| 83-070 | 0.10 | 1.19 | 0.9 | 12.8 | 9.2 | 0.4 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-080 | 0.48 | 178.63 | 617.0 | 9,128.8 | 6,585.8 | 251.9 | 97.0 | 52.9 | 41.0 | 7.3 | 1.6 | 1.6 | 5.2 |
| 83-090 | 0.41 | 9.16 | 27.3 | 403.5 | 291.1 | 11.1 | 4.3 | 2.3 | 1.8 | 0.3 | 0.1 | 0.1 | 0.2 |
| 84-010 | 0.47 | 21.56 | 73.7 | 1,090.0 | 786.4 | 30.1 | 11.6 | 6.3 | 4.9 | 0.9 | 0.2 | 0.2 | 0.6 |
| 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 |
| **SUMMER SEASONAL SUM (kg)** | | | **98,135.71** | **1,451,941.75** | **1,047,472.26** | **40,058.04** | **15,426.88** | **8,413.48** | **6,520.77** | **1,166.74** | **251.50** | **257.98** | **829.68** |

# 2006 FALL POLLUTANT LOADINGS BY OUTFALL

**2006 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/06 - 12/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fall Median Event Mean Concentration** | | | 10.6 | 94 | 92 | 2.33 | 0.250 | 0.438 | 0.483 | 0.074 | 0.018 | 0.014 | 0.060 |
| **Precipitation (meters)** | **0.150** | | | | | | | | | | | | |
| 10-010 | 0.43 | 113.55 | 137.5 | 1,224.9 | 1,193.7 | 30.2 | 3.2 | 5.7 | 6.3 | 1.0 | 0.2 | 0.2 | 0.8 |
| 10-020 | 0.45 | 7.81 | 9.9 | 87.9 | 85.6 | 2.2 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-030 | 0.10 | 4.05 | 1.1 | 10.1 | 9.9 | 0.2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-040 | 0.45 | 167.42 | 210.1 | 1,870.7 | 1,823.1 | 46.2 | 5.0 | 8.7 | 9.6 | 1.5 | 0.3 | 0.3 | 1.2 |
| 10-050 | 0.46 | 114.18 | 145.9 | 1,299.6 | 1,266.5 | 32.1 | 3.4 | 6.0 | 6.6 | 1.0 | 0.2 | 0.2 | 0.8 |
| 10-060 | 0.60 | 10.5 | 17.7 | 157.5 | 153.5 | 3.9 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 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 |
| 10-080 | 0.38 | 30.66 | 32.9 | 293.0 | 285.5 | 7.2 | 0.8 | 1.4 | 1.5 | 0.2 | 0.1 | 0.0 | 0.2 |
| 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 |
| 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 |
| 10-090C | 0.54 | 12.77 | 19.4 | 172.9 | 168.5 | 4.3 | 0.5 | 0.8 | 0.9 | 0.1 | 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 |
| 10-100 | 0.36 | 1392.1 | 1,417.7 | 12,625.5 | 12,304.5 | 311.6 | 33.4 | 58.6 | 64.6 | 9.9 | 2.3 | 1.8 | 8.0 |
| 10-110 | 0.47 | 300.11 | 393.1 | 3,500.8 | 3,411.8 | 86.4 | 9.3 | 16.2 | 17.9 | 2.7 | 0.6 | 0.5 | 2.2 |
| 10-120A/B | 0.44 | 372.78 | 455.6 | 4,057.0 | 3,953.8 | 100.1 | 10.7 | 18.8 | 20.8 | 3.2 | 0.8 | 0.6 | 2.6 |
| 10-130 | 0.45 | 336.46 | 426.5 | 3,798.5 | 3,702.0 | 93.8 | 10.1 | 17.6 | 19.4 | 3.0 | 0.7 | 0.6 | 2.4 |
| 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 |
| 10-140a,b | 0.58 | 220.65 | 356.5 | 3,174.7 | 3,094.0 | 78.4 | 8.4 | 14.7 | 16.2 | 2.5 | 0.6 | 0.5 | 2.0 |
| 10-150 | 0.47 | 157.15 | 206.9 | 1,842.4 | 1,795.5 | 45.5 | 4.9 | 8.5 | 9.4 | 1.4 | 0.3 | 0.3 | 1.2 |
| 10-160 | 0.00 | 17 | 0.1 | 1.1 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-170 | 0.50 | 176.01 | 248.7 | 2,214.6 | 2,158.3 | 54.7 | 5.9 | 10.3 | 11.3 | 1.7 | 0.4 | 0.3 | 1.4 |
| 10-180 | 0.45 | 284.26 | 355.4 | 3,165.1 | 3,084.6 | 78.1 | 8.4 | 14.7 | 16.2 | 2.5 | 0.6 | 0.5 | 2.0 |
| 10-190 | 0.59 | 14.58 | 24.2 | 215.7 | 210.2 | 5.3 | 0.6 | 1.0 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-200 | 0.40 | 42.44 | 47.3 | 421.3 | 410.6 | 10.4 | 1.1 | 2.0 | 2.2 | 0.3 | 0.1 | 0.1 | 0.3 |
| 10-210 | 0.49 | 98.32 | 135.7 | 1,208.5 | 1,177.7 | 29.8 | 3.2 | 5.6 | 6.2 | 0.9 | 0.2 | 0.2 | 0.8 |
| 10-220 | 0.56 | 18.83 | 29.6 | 263.2 | 256.5 | 6.5 | 0.7 | 1.2 | 1.3 | 0.2 | 0.0 | 0.0 | 0.2 |
| 10-230 | 0.47 | 235.02 | 311.9 | 2,777.8 | 2,707.1 | 68.6 | 7.4 | 12.9 | 14.2 | 2.2 | 0.5 | 0.4 | 1.8 |
| 10-240 | 0.51 | 103.83 | 149.8 | 1,333.7 | 1,299.8 | 32.9 | 3.5 | 6.2 | 6.8 | 1.0 | 0.2 | 0.2 | 0.8 |
| 10-250 | 0.49 | 242.96 | 333.5 | 2,969.7 | 2,894.2 | 73.3 | 7.9 | 13.8 | 15.2 | 2.3 | 0.6 | 0.4 | 1.9 |
| 10-260 | 0.56 | 23.77 | 37.2 | 331.1 | 322.7 | 8.2 | 0.9 | 1.5 | 1.7 | 0.3 | 0.1 | 0.0 | 0.2 |
| 10-270 | 0.47 | 72.45 | 96.4 | 858.4 | 836.6 | 21.2 | 2.3 | 4.0 | 4.4 | 0.7 | 0.2 | 0.1 | 0.5 |
| 10-280 | 0.44 | 55.08 | 68.6 | 611.2 | 595.7 | 15.1 | 1.6 | 2.8 | 3.1 | 0.5 | 0.1 | 0.1 | 0.4 |
| 10-290 | 0.10 | 6.83 | 1.9 | 17.1 | 16.6 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-300 | 0.36 | 17.74 | 18.0 | 159.9 | 155.9 | 3.9 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-310 | 0.47 | 60.29 | 79.9 | 711.9 | 693.8 | 17.6 | 1.9 | 3.3 | 3.6 | 0.6 | 0.1 | 0.1 | 0.5 |
| 10-320 | 0.45 | 341.99 | 433.8 | 3,863.1 | 3,764.9 | 95.3 | 10.2 | 17.9 | 19.8 | 3.0 | 0.7 | 0.6 | 2.5 |
| 10-330 | 0.35 | 21.61 | 21.3 | 190.0 | 185.1 | 4.7 | 0.5 | 0.9 | 1.0 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-340 | 0.45 | 20.74 | 26.3 | 234.0 | 228.0 | 5.8 | 0.6 | 1.1 | 1.2 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-350 | 0.60 | 28.16 | 47.4 | 421.7 | 411.0 | 10.4 | 1.1 | 2.0 | 2.2 | 0.3 | 0.1 | 0.1 | 0.3 |
| 10-360 | 0.59 | 29.02 | 48.3 | 430.0 | 419.1 | 10.6 | 1.1 | 2.0 | 2.2 | 0.3 | 0.1 | 0.1 | 0.3 |
| 10-370 | 0.59 | 14.46 | 23.9 | 213.2 | 207.7 | 5.3 | 0.6 | 1.0 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-380 | 0.45 | 14.38 | 18.0 | 160.1 | 156.0 | 4.0 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-390 | 0.49 | 41.97 | 58.1 | 517.4 | 504.3 | 12.8 | 1.4 | 2.4 | 2.6 | 0.4 | 0.1 | 0.1 | 0.3 |
| 10-400A | 0.10 | 1.07 | 0.3 | 2.7 | 2.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-400B | 0.47 | 17.66 | 23.4 | 208.2 | 202.9 | 5.1 | 0.6 | 1.0 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-400C | 0.57 | 50.25 | 79.8 | 710.9 | 692.8 | 17.5 | 1.9 | 3.3 | 3.6 | 0.6 | 0.1 | 0.1 | 0.5 |
| 10-410A | 0.50 | 46.22 | 64.6 | 575.3 | 560.7 | 14.2 | 1.5 | 2.7 | 2.9 | 0.5 | 0.1 | 0.1 | 0.4 |
| 10-410B | 0.32 | 21.29 | 18.9 | 168.4 | 164.1 | 4.2 | 0.4 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-410C | 0.53 | 22.8 | 33.8 | 300.9 | 293.2 | 7.4 | 0.8 | 1.4 | 1.5 | 0.2 | 0.1 | 0.0 | 0.2 |
| 10-410D | 0.60 | 27.34 | 46.1 | 410.3 | 399.9 | 10.1 | 1.1 | 1.9 | 2.1 | 0.3 | 0.1 | 0.1 | 0.3 |
| 10-410E | 0.58 | 256.04 | 413.7 | 3,683.9 | 3,590.2 | 90.9 | 9.8 | 17.1 | 18.8 | 2.9 | 0.7 | 0.5 | 2.3 |
| 10-410F | 0.59 | 37.92 | 62.6 | 557.7 | 543.5 | 13.8 | 1.5 | 2.6 | 2.9 | 0.4 | 0.1 | 0.1 | 0.4 |
| 10-420A | 0.27 | 23.05 | 17.6 | 157.1 | 153.1 | 3.9 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 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 |
| 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 |
| 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 |
| 10-420E | 0.59 | 127.89 | 210.7 | 1,876.5 | 1,828.8 | 46.3 | 5.0 | 8.7 | 9.6 | 1.5 | 0.3 | 0.3 | 1.2 |
| 10-430A | 0.00 | 8.14 | 0.1 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-430B | 0.53 | 54.72 | 82.1 | 731.1 | 712.5 | 18.0 | 1.9 | 3.4 | 3.7 | 0.6 | 0.1 | 0.1 | 0.5 |
| 10-430C | 0.48 | 44.83 | 60.5 | 538.5 | 524.8 | 13.3 | 1.4 | 2.5 | 2.8 | 0.4 | 0.1 | 0.1 | 0.3 |
| 10-430D | 0.49 | 85.79 | 118.4 | 1,054.5 | 1,027.7 | 26.0 | 2.8 | 4.9 | 5.4 | 0.8 | 0.2 | 0.2 | 0.7 |
| 10-430E | 0.56 | 86.66 | 135.7 | 1,208.2 | 1,177.5 | 29.8 | 3.2 | 5.6 | 6.2 | 0.9 | 0.2 | 0.2 | 0.8 |
| 10-430F | 0.10 | 377.97 | 106.1 | 945.1 | 921.0 | 23.3 | 2.5 | 4.4 | 4.8 | 0.7 | 0.2 | 0.1 | 0.6 |
| 10-430G | 0.50 | 125.89 | 175.2 | 1,560.0 | 1,520.3 | 38.5 | 4.1 | 7.2 | 8.0 | 1.2 | 0.3 | 0.2 | 1.0 |
| 10-430H | 0.49 | 33.18 | 45.8 | 407.7 | 397.3 | 10.1 | 1.1 | 1.9 | 2.1 | 0.3 | 0.1 | 0.1 | 0.3 |
| 10-430I | 0.59 | 32.61 | 53.9 | 479.9 | 467.7 | 11.8 | 1.3 | 2.2 | 2.5 | 0.4 | 0.1 | 0.1 | 0.3 |
| 10-430J | 0.43 | 532.36 | 648.6 | 5,776.3 | 5,629.4 | 142.6 | 15.3 | 26.8 | 29.6 | 4.5 | 1.1 | 0.8 | 3.7 |
| 10-430K | 0.48 | 337.06 | 452.0 | 4,025.5 | 3,923.2 | 99.4 | 10.7 | 18.7 | 20.6 | 3.2 | 0.7 | 0.6 | 2.6 |
| 10-430L | 0.45 | 84.4 | 106.8 | 951.2 | 927.0 | 23.5 | 2.5 | 4.4 | 4.9 | 0.7 | 0.2 | 0.1 | 0.6 |
| 10-430M | 0.54 | 75.94 | 115.6 | 1,029.9 | 1,003.7 | 25.4 | 2.7 | 4.8 | 5.3 | 0.8 | 0.2 | 0.2 | 0.7 |
| 10-430N | 0.44 | 26.43 | 32.9 | 293.4 | 285.9 | 7.2 | 0.8 | 1.4 | 1.5 | 0.2 | 0.1 | 0.0 | 0.2 |
| 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 |
| 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 |
| 10-430Q | 0.10 | 8.03 | 2.3 | 20.1 | 19.6 | 0.5 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-430R | 0.47 | 150.32 | 197.3 | 1,757.0 | 1,712.3 | 43.4 | 4.7 | 8.2 | 9.0 | 1.4 | 0.3 | 0.3 | 1.1 |
| 10-430S | 0.10 | 5.15 | 1.4 | 12.9 | 12.5 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-430T | 0.46 | 262.47 | 336.9 | 2,999.9 | 2,923.7 | 74.0 | 7.9 | 13.9 | 15.3 | 2.4 | 0.6 | 0.4 | 1.9 |

# 2006 FALL POLLUTANT LOADINGS BY OUTFALL

**2006 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/06 - 12/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fall Median Event Mean Concentration** | | | 10.6 | 94 | 92 | 2.33 | 0.250 | 0.438 | 0.483 | 0.074 | 0.018 | 0.014 | 0.060 |
| **Precipitation (meters)** | **0.150** | | | | | | | | | | | | |
| 10-430U | 0.47 | 431.37 | 569.1 | 5,067.8 | 4,938.9 | 125.1 | 13.4 | 23.5 | 25.9 | 4.0 | 0.9 | 0.7 | 3.2 |
| 10-430V | 0.46 | 329.11 | 429.5 | 3,825.1 | 3,727.9 | 94.4 | 10.1 | 17.7 | 19.6 | 3.0 | 0.7 | 0.6 | 2.4 |
| 10-440A | 0.46 | 23.18 | 29.8 | 265.5 | 258.8 | 6.6 | 0.7 | 1.2 | 1.4 | 0.2 | 0.0 | 0.0 | 0.2 |
| 10-440B | 0.49 | 34.23 | 47.4 | 421.8 | 411.1 | 10.4 | 1.1 | 2.0 | 2.2 | 0.3 | 0.1 | 0.1 | 0.3 |
| 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 |
| 10-440E | 0.51 | 831.25 | 1,200.1 | 10,688.0 | 10,416.3 | 263.8 | 28.3 | 49.6 | 54.7 | 8.4 | 2.0 | 1.6 | 6.8 |
| 10-440F | 0.46 | 538.85 | 696.3 | 6,200.7 | 6,043.0 | 153.0 | 16.4 | 28.8 | 31.7 | 4.9 | 1.1 | 0.9 | 3.9 |
| 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 |
| 10-450B | 0.52 | 3.41 | 4.9 | 44.1 | 42.9 | 1.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-450C | 0.59 | 55.64 | 92.8 | 826.2 | 805.2 | 20.4 | 2.2 | 3.8 | 4.2 | 0.6 | 0.2 | 0.1 | 0.5 |
| 10-450D | 0.45 | 4.62 | 5.8 | 52.0 | 50.7 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-450E | 0.44 | 3.2 | 4.0 | 35.4 | 34.5 | 0.9 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-450F | 0.46 | 158.55 | 204.5 | 1,821.3 | 1,775.0 | 45.0 | 4.8 | 8.5 | 9.3 | 1.4 | 0.3 | 0.3 | 1.2 |
| 10-450G/H | 0.48 | 75.02 | 101.2 | 901.3 | 878.4 | 22.2 | 2.4 | 4.2 | 4.6 | 0.7 | 0.2 | 0.1 | 0.6 |
| 10-450I | 0.49 | 243.64 | 336.0 | 2,992.5 | 2,916.4 | 73.9 | 7.9 | 13.9 | 15.3 | 2.3 | 0.6 | 0.4 | 1.9 |
| 10-450J | 0.49 | 17.16 | 23.4 | 208.3 | 203.0 | 5.1 | 0.6 | 1.0 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-450K | 0.58 | 37.01 | 60.2 | 536.0 | 522.4 | 13.2 | 1.4 | 2.5 | 2.7 | 0.4 | 0.1 | 0.1 | 0.3 |
| 10-450L | 0.51 | 213.41 | 302.6 | 2,695.0 | 2,626.5 | 66.5 | 7.1 | 12.5 | 13.8 | 2.1 | 0.5 | 0.4 | 1.7 |
| 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 |
| 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 |
| 10-460B | 0.52 | 7.29 | 10.6 | 94.2 | 91.8 | 2.3 | 0.2 | 0.4 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 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 |
| 10-460E | 0.49 | 231.41 | 320.9 | 2,857.4 | 2,784.8 | 70.5 | 7.6 | 13.3 | 14.6 | 2.2 | 0.5 | 0.4 | 1.8 |
| 10-460F | 0.49 | 14.75 | 20.5 | 182.5 | 177.8 | 4.5 | 0.5 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-460G | 0.51 | 79.66 | 114.2 | 1,017.4 | 991.5 | 25.1 | 2.7 | 4.7 | 5.2 | 0.8 | 0.2 | 0.1 | 0.6 |
| 10-460H | 0.48 | 12.35 | 16.6 | 148.0 | 144.3 | 3.7 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 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 |
| 10-460J | 0.46 | 5.36 | 7.0 | 62.1 | 60.6 | 1.5 | 0.2 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-460K | 0.36 | 5.48 | 5.5 | 49.3 | 48.0 | 1.2 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-460L | 0.46 | 3.5 | 4.6 | 40.6 | 39.5 | 1.0 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-460M | 0.48 | 9.55 | 12.8 | 114.3 | 111.4 | 2.8 | 0.3 | 0.5 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-460N | 0.45 | 3.85 | 4.9 | 43.3 | 42.2 | 1.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-460O | 0.45 | 4.15 | 5.3 | 47.1 | 45.9 | 1.2 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-460P | 0.45 | 4.34 | 5.5 | 48.8 | 47.6 | 1.2 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-460Q | 0.56 | 19.73 | 31.3 | 278.3 | 271.2 | 6.9 | 0.7 | 1.3 | 1.4 | 0.2 | 0.1 | 0.0 | 0.2 |
| 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 |
| 10-460S | 0.56 | 233.54 | 370.0 | 3,295.1 | 3,211.4 | 81.3 | 8.7 | 15.3 | 16.9 | 2.6 | 0.6 | 0.5 | 2.1 |
| 10-465 | 0.10 | 8.56 | 2.4 | 21.4 | 20.9 | 0.5 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-470 | 0.38 | 25.6 | 27.4 | 244.3 | 238.1 | 6.0 | 0.6 | 1.1 | 1.2 | 0.2 | 0.0 | 0.0 | 0.2 |
| 10-480 | 0.58 | 39.66 | 64.6 | 575.3 | 560.7 | 14.2 | 1.5 | 2.7 | 2.9 | 0.5 | 0.1 | 0.1 | 0.4 |
| 10-485 | 0.00 | 7.27 | 0.1 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-490 | 0.43 | 150.96 | 183.7 | 1,636.3 | 1,594.7 | 40.4 | 4.3 | 7.6 | 8.4 | 1.3 | 0.3 | 0.2 | 1.0 |
| 10-500A | 0.26 | 26.21 | 19.3 | 172.0 | 167.6 | 4.2 | 0.5 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-500B | 0.46 | 8.48 | 11.0 | 97.6 | 95.1 | 2.4 | 0.3 | 0.5 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-500C | 0.44 | 111.36 | 136.1 | 1,212.2 | 1,181.4 | 29.9 | 3.2 | 5.6 | 6.2 | 1.0 | 0.2 | 0.2 | 0.8 |
| 10-500D | 0.24 | 3.83 | 2.6 | 22.8 | 22.2 | 0.6 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-500E | 0.53 | 23.34 | 34.9 | 310.7 | 302.8 | 7.7 | 0.8 | 1.4 | 1.6 | 0.2 | 0.1 | 0.0 | 0.2 |
| 10-500F | 0.49 | 12.04 | 16.7 | 148.7 | 144.9 | 3.7 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 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 |
| 10-505 | 0.10 | 7.85 | 2.2 | 19.6 | 19.1 | 0.5 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-510 | 0.51 | 62.36 | 89.1 | 793.1 | 772.9 | 19.6 | 2.1 | 3.7 | 4.1 | 0.6 | 0.1 | 0.1 | 0.5 |
| 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 |
| 10-530 | 0.45 | 116.15 | 147.0 | 1,309.1 | 1,275.9 | 32.3 | 3.5 | 6.1 | 6.7 | 1.0 | 0.2 | 0.2 | 0.8 |
| 10-540 | 0.12 | 53.9 | 17.9 | 159.6 | 155.5 | 3.9 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-550 | 0.46 | 25.83 | 33.4 | 297.0 | 289.5 | 7.3 | 0.8 | 1.4 | 1.5 | 0.2 | 0.1 | 0.0 | 0.2 |
| 10-560A/B | 0.44 | 600.63 | 737.8 | 6,570.2 | 6,403.2 | 162.2 | 17.4 | 30.5 | 33.6 | 5.2 | 1.2 | 1.0 | 4.2 |
| 10-570A | 0.54 | 14.64 | 22.4 | 199.1 | 194.0 | 4.9 | 0.5 | 0.9 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-570B | 0.44 | 228.18 | 279.6 | 2,490.5 | 2,427.2 | 61.5 | 6.6 | 11.6 | 12.7 | 2.0 | 0.5 | 0.4 | 1.6 |
| 10-580 | 0.45 | 73.39 | 92.5 | 823.6 | 802.7 | 20.3 | 2.2 | 3.8 | 4.2 | 0.6 | 0.2 | 0.1 | 0.5 |
| 10-600 | 0.48 | 89.24 | 121.2 | 1,079.1 | 1,051.6 | 26.6 | 2.9 | 5.0 | 5.5 | 0.8 | 0.2 | 0.2 | 0.7 |
| 10-610 | 0.46 | 25.6 | 32.9 | 293.4 | 285.9 | 7.2 | 0.8 | 1.4 | 1.5 | 0.2 | 0.1 | 0.0 | 0.2 |
| 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 |
| 10-630A | 0.10 | 6.24 | 1.8 | 15.6 | 15.2 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-630B | 0.45 | 4.68 | 5.9 | 52.7 | 51.3 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-630C | 0.48 | 96.03 | 130.3 | 1,160.1 | 1,130.6 | 28.6 | 3.1 | 5.4 | 5.9 | 0.9 | 0.2 | 0.2 | 0.7 |
| 10-630D | 0.45 | 6.37 | 8.0 | 71.7 | 69.9 | 1.8 | 0.2 | 0.3 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 10-630E | 0.45 | 8.52 | 10.8 | 95.9 | 93.4 | 2.4 | 0.3 | 0.4 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-630F | 0.54 | 17.56 | 26.6 | 237.2 | 231.2 | 5.9 | 0.6 | 1.1 | 1.2 | 0.2 | 0.0 | 0.0 | 0.2 |
| 10-630G | 0.45 | 5.9 | 7.5 | 66.4 | 64.7 | 1.6 | 0.2 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 10-630H | 0.30 | 25.63 | 21.8 | 194.1 | 189.2 | 4.8 | 0.5 | 0.9 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-630I | 0.47 | 12.48 | 16.3 | 145.1 | 141.4 | 3.6 | 0.4 | 0.7 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-630J | 0.55 | 14.69 | 22.8 | 203.4 | 198.2 | 5.0 | 0.5 | 0.9 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-630K | 0.47 | 95.29 | 126.6 | 1,127.7 | 1,099.0 | 27.8 | 3.0 | 5.2 | 5.8 | 0.9 | 0.2 | 0.2 | 0.7 |
| 10-630L | 0.52 | 100.42 | 146.9 | 1,308.2 | 1,274.9 | 32.3 | 3.5 | 6.1 | 6.7 | 1.0 | 0.2 | 0.2 | 0.8 |
| 10-630M | 0.50 | 11.71 | 16.3 | 145.4 | 141.7 | 3.6 | 0.4 | 0.7 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-630N | 0.45 | 8.45 | 10.7 | 95.1 | 92.7 | 2.3 | 0.3 | 0.4 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-630O | 0.36 | 5.77 | 5.9 | 52.5 | 51.2 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |

# 2006 FALL POLLUTANT LOADINGS BY OUTFALL

**2006 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/06 - 12/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fall Median Event Mean Concentration | | | 10.6 | 94 | 92 | 2.33 | 0.250 | 0.438 | 0.483 | 0.074 | 0.018 | 0.014 | 0.060 |
| Precipitation (meters) | 0.150 | | | | | | | | | | | | |
| 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 |
| 10-630R | 0.33 | 83.89 | 78.7 | 700.6 | 682.7 | 17.3 | 1.9 | 3.3 | 3.6 | 0.5 | 0.1 | 0.1 | 0.4 |
| 10-630S | 0.22 | 37.02 | 22.6 | 201.2 | 196.1 | 5.0 | 0.5 | 0.9 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-630T | 0.56 | 7.72 | 12.2 | 108.6 | 105.8 | 2.7 | 0.3 | 0.5 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-630U | 0.52 | 115.42 | 169.5 | 1,509.6 | 1,471.2 | 37.3 | 4.0 | 7.0 | 7.7 | 1.2 | 0.3 | 0.2 | 1.0 |
| 10-630V | 0.11 | 33.85 | 10.0 | 89.4 | 87.1 | 2.2 | 0.2 | 0.4 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-630W | 0.47 | 23.68 | 31.5 | 280.5 | 273.3 | 6.9 | 0.7 | 1.3 | 1.4 | 0.2 | 0.1 | 0.0 | 0.2 |
| 10-630X | 0.44 | 14.78 | 18.4 | 163.5 | 159.3 | 4.0 | 0.4 | 0.8 | 0.8 | 0.1 | 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 |
| 10-630Z | 0.47 | 45.66 | 60.4 | 537.5 | 523.8 | 13.3 | 1.4 | 2.5 | 2.8 | 0.4 | 0.1 | 0.1 | 0.3 |
| 10-640 | 0.46 | 258.18 | 331.5 | 2,952.4 | 2,877.4 | 72.9 | 7.8 | 13.7 | 15.1 | 2.3 | 0.5 | 0.4 | 1.9 |
| 10-650 | 0.56 | 19.53 | 30.5 | 272.0 | 265.1 | 6.7 | 0.7 | 1.3 | 1.4 | 0.2 | 0.1 | 0.0 | 0.2 |
| 10-660 | 0.46 | 306.37 | 398.5 | 3,548.7 | 3,458.5 | 87.6 | 9.4 | 16.5 | 18.2 | 2.8 | 0.7 | 0.5 | 2.3 |
| 10-670 | 0.45 | 137.88 | 173.9 | 1,549.1 | 1,509.7 | 38.2 | 4.1 | 7.2 | 7.9 | 1.2 | 0.3 | 0.2 | 1.0 |
| 10-680 | 0.46 | 707.95 | 911.4 | 8,116.3 | 7,910.0 | 200.3 | 21.5 | 37.7 | 41.5 | 6.4 | 1.5 | 1.2 | 5.2 |
| 10-690 | 0.50 | 70.63 | 99.2 | 883.5 | 861.0 | 21.8 | 2.3 | 4.1 | 4.5 | 0.7 | 0.2 | 0.1 | 0.6 |
| 10-700 | 0.46 | 222.07 | 289.5 | 2,578.4 | 2,512.8 | 63.6 | 6.8 | 12.0 | 13.2 | 2.0 | 0.5 | 0.4 | 1.6 |
| 10-710 | 0.33 | 29.95 | 28.0 | 249.5 | 243.1 | 6.2 | 0.7 | 1.2 | 1.3 | 0.2 | 0.0 | 0.0 | 0.2 |
| 10-720A | 0.44 | 15.77 | 19.6 | 174.8 | 170.4 | 4.3 | 0.5 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 10-720B | 0.48 | 422.18 | 571.1 | 5,085.7 | 4,956.4 | 125.5 | 13.5 | 23.6 | 26.0 | 4.0 | 0.9 | 0.7 | 3.2 |
| 10-720C | 0.43 | 26.35 | 31.8 | 282.9 | 275.7 | 7.0 | 0.7 | 1.3 | 1.4 | 0.2 | 0.1 | 0.0 | 0.2 |
| 10-720D | 0.46 | 22.95 | 29.3 | 261.2 | 254.6 | 6.4 | 0.7 | 1.2 | 1.3 | 0.2 | 0.0 | 0.0 | 0.2 |
| 10-720E | 0.46 | 18.39 | 23.5 | 209.6 | 204.2 | 5.2 | 0.6 | 1.0 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 10-720F | 0.48 | 317.75 | 428.0 | 3,812.1 | 3,715.1 | 94.1 | 10.1 | 17.7 | 19.5 | 3.0 | 0.7 | 0.6 | 2.4 |
| 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 |
| 10-720H | 0.45 | 4.55 | 5.7 | 51.2 | 49.9 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-720I | 0.45 | 87.27 | 109.3 | 973.1 | 948.4 | 24.0 | 2.6 | 4.5 | 5.0 | 0.8 | 0.2 | 0.1 | 0.6 |
| 10-720J | 0.36 | 3.71 | 3.7 | 33.1 | 32.3 | 0.8 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-720K | 0.55 | 32.76 | 50.5 | 449.8 | 438.3 | 11.1 | 1.2 | 2.1 | 2.3 | 0.4 | 0.1 | 0.1 | 0.3 |
| 10-720L | 0.45 | 4.57 | 5.8 | 51.4 | 50.1 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-010 | 0.42 | 93.99 | 110.8 | 986.6 | 961.5 | 24.4 | 2.6 | 4.6 | 5.0 | 0.8 | 0.2 | 0.1 | 0.6 |
| 20-020 | 0.44 | 15.09 | 18.6 | 165.5 | 161.3 | 4.1 | 0.4 | 0.8 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 20-030 | 0.45 | 7.95 | 10.0 | 89.5 | 87.2 | 2.2 | 0.2 | 0.4 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 20-040 | 0.37 | 6.79 | 7.1 | 63.3 | 61.7 | 1.6 | 0.2 | 0.3 | 0.3 | 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 |
| 20-060 | 0.45 | 5.91 | 7.5 | 66.5 | 64.8 | 1.6 | 0.2 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 20-070 | 0.44 | 39.07 | 48.6 | 433.1 | 422.1 | 10.7 | 1.1 | 2.0 | 2.2 | 0.3 | 0.1 | 0.1 | 0.3 |
| 20-080 | 0.45 | 33.72 | 42.9 | 382.3 | 372.5 | 9.4 | 1.0 | 1.8 | 2.0 | 0.3 | 0.1 | 0.1 | 0.2 |
| 20-090 | 0.55 | 9.95 | 15.4 | 137.5 | 134.0 | 3.4 | 0.4 | 0.6 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 20-100 | 0.10 | 0.99 | 0.3 | 2.5 | 2.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-110 | 0.24 | 216.04 | 145.5 | 1,296.0 | 1,263.0 | 32.0 | 3.4 | 6.0 | 6.6 | 1.0 | 0.2 | 0.2 | 0.8 |
| 20-120 | 0.47 | 10.22 | 13.4 | 119.4 | 116.4 | 2.9 | 0.3 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 20-130 | 0.45 | 16.12 | 20.4 | 181.4 | 176.8 | 4.5 | 0.5 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 20-140 | 0.44 | 2.97 | 3.7 | 32.8 | 31.9 | 0.8 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-150 | 0.45 | 14.48 | 18.3 | 162.9 | 158.8 | 4.0 | 0.4 | 0.8 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 20-160 | 0.54 | 3.21 | 4.9 | 43.4 | 42.3 | 1.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-170 | 0.37 | 4.94 | 5.2 | 46.0 | 44.9 | 1.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-180 | 0.51 | 5.3 | 7.5 | 67.1 | 65.4 | 1.7 | 0.2 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 20-190 | 0.45 | 1.35 | 1.7 | 15.2 | 14.8 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-200 | 0.45 | 13.84 | 17.5 | 155.7 | 151.8 | 3.8 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 20-210A | 0.44 | 92.9 | 114.6 | 1,020.4 | 994.4 | 25.2 | 2.7 | 4.7 | 5.2 | 0.8 | 0.2 | 0.1 | 0.6 |
| 20-210B | 0.50 | 620.78 | 879.4 | 7,831.6 | 7,632.5 | 193.3 | 20.7 | 36.3 | 40.1 | 6.1 | 1.5 | 1.1 | 5.0 |
| 20-220 | 0.46 | 26.38 | 34.1 | 304.1 | 296.4 | 7.5 | 0.8 | 1.4 | 1.6 | 0.2 | 0.1 | 0.0 | 0.2 |
| 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 |
| 20-240 | 0.48 | 30.06 | 40.7 | 362.1 | 352.9 | 8.9 | 1.0 | 1.7 | 1.9 | 0.3 | 0.1 | 0.1 | 0.2 |
| 20-250 | 0.57 | 6.28 | 10.1 | 89.8 | 87.5 | 2.2 | 0.2 | 0.4 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 20-260 | 0.60 | 3.5 | 5.9 | 52.5 | 51.2 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-270 | 0.48 | 42.81 | 57.3 | 510.3 | 497.3 | 12.6 | 1.4 | 2.4 | 2.6 | 0.4 | 0.1 | 0.1 | 0.3 |
| 20-280 | 0.54 | 8.98 | 13.6 | 120.7 | 117.6 | 3.0 | 0.3 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 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 |
| 21-010 | 0.45 | 49.49 | 62.3 | 554.7 | 540.6 | 13.7 | 1.5 | 2.6 | 2.8 | 0.4 | 0.1 | 0.1 | 0.4 |
| 40-010 | 0.45 | 719.17 | 904.8 | 8,058.0 | 7,853.1 | 198.9 | 21.3 | 37.4 | 41.2 | 6.3 | 1.5 | 1.2 | 5.1 |
| 40-020 | 0.45 | 15.36 | 19.4 | 172.8 | 168.4 | 4.3 | 0.5 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-030 | 0.42 | 51.02 | 59.8 | 532.9 | 519.4 | 13.2 | 1.4 | 2.5 | 2.7 | 0.4 | 0.1 | 0.1 | 0.3 |
| 40-040 | 0.43 | 65.39 | 79.7 | 709.9 | 691.9 | 17.5 | 1.9 | 3.3 | 3.6 | 0.6 | 0.1 | 0.1 | 0.5 |
| 40-050 | 0.45 | 10.28 | 13.0 | 115.7 | 112.7 | 2.9 | 0.3 | 0.5 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-060 | 0.45 | 3.2 | 4.0 | 36.0 | 35.1 | 0.9 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40-070 | 0.38 | 7.98 | 8.5 | 75.5 | 73.6 | 1.9 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 40-080 | 0.41 | 60.51 | 69.4 | 617.9 | 602.2 | 15.3 | 1.6 | 2.9 | 3.2 | 0.5 | 0.1 | 0.1 | 0.4 |
| 40-090 | 0.46 | 20.65 | 27.0 | 240.0 | 233.9 | 5.9 | 0.6 | 1.1 | 1.2 | 0.2 | 0.0 | 0.0 | 0.2 |
| 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 |
| 40-110 | 0.44 | 2.61 | 3.3 | 29.0 | 28.2 | 0.7 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40-120 | 0.44 | 65.87 | 81.1 | 721.8 | 703.5 | 17.8 | 1.9 | 3.3 | 3.7 | 0.6 | 0.1 | 0.1 | 0.5 |
| 40-130 | 0.45 | 35.01 | 44.4 | 395.6 | 385.5 | 9.8 | 1.0 | 1.8 | 2.0 | 0.3 | 0.1 | 0.1 | 0.3 |
| 40-140 | 0.35 | 125.46 | 122.5 | 1,090.8 | 1,063.1 | 26.9 | 2.9 | 5.1 | 5.6 | 0.9 | 0.2 | 0.2 | 0.7 |
| 40-150 | 0.47 | 24.31 | 32.3 | 288.0 | 280.6 | 7.1 | 0.8 | 1.3 | 1.5 | 0.2 | 0.1 | 0.0 | 0.2 |
| 40-160 | 0.49 | 30.99 | 43.0 | 383.1 | 373.3 | 9.5 | 1.0 | 1.8 | 2.0 | 0.3 | 0.1 | 0.1 | 0.2 |

# 2006 FALL POLLUTANT LOADINGS BY OUTFALL

**2006 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/06 - 12/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fall Median Event Mean Concentration** | | | 10.6 | 94 | 92 | 2.33 | 0.250 | 0.438 | 0.483 | 0.074 | 0.018 | 0.014 | 0.060 |
| **Precipitation (meters)** | **0.150** | | | | | | | | | | | | |
| 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 |
| 40-180 | 0.54 | 16.8 | 25.4 | 226.1 | 220.4 | 5.6 | 0.6 | 1.0 | 1.2 | 0.2 | 0.0 | 0.0 | 0.1 |
| 40-190 | 0.53 | 65.53 | 97.3 | 866.4 | 844.4 | 21.4 | 2.3 | 4.0 | 4.4 | 0.7 | 0.2 | 0.1 | 0.6 |
| 40-200 | 0.46 | 24.75 | 32.1 | 286.1 | 278.8 | 7.1 | 0.8 | 1.3 | 1.5 | 0.2 | 0.1 | 0.0 | 0.2 |
| 40-210 | 0.54 | 17.26 | 26.4 | 235.1 | 229.2 | 5.8 | 0.6 | 1.1 | 1.2 | 0.2 | 0.0 | 0.0 | 0.1 |
| 40-220 | 0.47 | 100.58 | 132.0 | 1,175.7 | 1,145.8 | 29.0 | 3.1 | 5.5 | 6.0 | 0.9 | 0.2 | 0.2 | 0.7 |
| 40-230 | 0.44 | 13.78 | 17.2 | 153.3 | 149.4 | 3.8 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 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 |
| 40-250 | 0.60 | 1.15 | 1.9 | 17.3 | 16.8 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40-260 | 0.45 | 3.49 | 4.4 | 39.3 | 38.3 | 1.0 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40-270 | 0.45 | 9.59 | 12.1 | 107.9 | 105.2 | 2.7 | 0.3 | 0.5 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-280 | 0.53 | 12.76 | 18.8 | 167.8 | 163.5 | 4.1 | 0.4 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-290 | 0.51 | 13.73 | 19.7 | 175.8 | 171.3 | 4.3 | 0.5 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-300 | 0.52 | 10.38 | 15.2 | 135.2 | 131.8 | 3.3 | 0.4 | 0.6 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-310 | 0.45 | 97.86 | 124.4 | 1,107.6 | 1,079.4 | 27.3 | 2.9 | 5.1 | 5.7 | 0.9 | 0.2 | 0.2 | 0.7 |
| 40-320 | 0.60 | 9.43 | 15.9 | 141.5 | 137.9 | 3.5 | 0.4 | 0.7 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-330 | 0.59 | 15.34 | 25.5 | 227.3 | 221.6 | 5.6 | 0.6 | 1.1 | 1.2 | 0.2 | 0.0 | 0.0 | 0.1 |
| 40-340 | 0.53 | 35.27 | 52.8 | 470.0 | 458.0 | 11.6 | 1.2 | 2.2 | 2.4 | 0.4 | 0.1 | 0.1 | 0.3 |
| 40-350 | 0.60 | 8.99 | 15.1 | 134.9 | 131.4 | 3.3 | 0.4 | 0.6 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-360 | 0.60 | 8.09 | 13.6 | 121.4 | 118.3 | 3.0 | 0.3 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-370 | 0.58 | 12.41 | 20.2 | 179.5 | 174.9 | 4.4 | 0.5 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-380 | 0.39 | 24.92 | 27.5 | 245.1 | 238.9 | 6.1 | 0.6 | 1.1 | 1.3 | 0.2 | 0.0 | 0.0 | 0.2 |
| 40-390 | 0.58 | 5.72 | 9.3 | 82.9 | 80.8 | 2.0 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40-400 | 0.10 | 1.07 | 0.3 | 2.7 | 2.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 41-010 | 0.38 | 94.73 | 100.4 | 894.0 | 871.3 | 22.1 | 2.4 | 4.1 | 4.6 | 0.7 | 0.2 | 0.1 | 0.6 |
| 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 |
| 41-030 | 0.50 | 60.47 | 85.2 | 759.0 | 739.7 | 18.7 | 2.0 | 3.5 | 3.9 | 0.6 | 0.1 | 0.1 | 0.5 |
| 41-040 | 0.57 | 35.59 | 57.3 | 509.9 | 496.9 | 12.6 | 1.4 | 2.4 | 2.6 | 0.4 | 0.1 | 0.1 | 0.3 |
| 41-050 | 0.60 | 10.48 | 17.7 | 157.2 | 153.2 | 3.9 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 41-060 | 0.60 | 2.95 | 5.0 | 44.3 | 43.1 | 1.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 51-010 | 0.45 | 29.63 | 37.5 | 334.4 | 325.9 | 8.3 | 0.9 | 1.6 | 1.7 | 0.3 | 0.1 | 0.0 | 0.2 |
| 51-020 | 0.45 | 4.55 | 5.7 | 51.2 | 49.9 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52-010 | 0.28 | 45.29 | 35.1 | 312.9 | 305.0 | 7.7 | 0.8 | 1.5 | 1.6 | 0.2 | 0.1 | 0.0 | 0.2 |
| 52-020 | 0.45 | 6.09 | 7.7 | 68.5 | 66.8 | 1.7 | 0.2 | 0.3 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 52-030 | 0.45 | 7.18 | 9.1 | 80.8 | 78.7 | 2.0 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 52-040 | 0.41 | 4.54 | 5.3 | 46.9 | 45.7 | 1.2 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52-050 | 0.44 | 15.3 | 18.7 | 166.4 | 162.2 | 4.1 | 0.4 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 52-060 | 0.10 | 3.22 | 0.9 | 8.1 | 7.8 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52-070 | 0.42 | 86.94 | 103.3 | 919.9 | 896.5 | 22.7 | 2.4 | 4.3 | 4.7 | 0.7 | 0.2 | 0.1 | 0.6 |
| 52-080 | 0.24 | 8.08 | 5.5 | 48.9 | 47.7 | 1.2 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52-090 | 0.45 | 4.89 | 6.2 | 55.0 | 53.6 | 1.4 | 0.1 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52-100A/B | 0.27 | 11.89 | 8.9 | 79.3 | 77.3 | 2.0 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 52-110 | 0.45 | 8.84 | 11.1 | 98.7 | 96.2 | 2.4 | 0.3 | 0.5 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 52-120 | 0.45 | 14.74 | 18.6 | 165.8 | 161.6 | 4.1 | 0.4 | 0.8 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 52-130 | 0.31 | 7.18 | 6.3 | 56.5 | 55.1 | 1.4 | 0.1 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53-010 | 0.45 | 7.03 | 8.9 | 79.1 | 77.1 | 2.0 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 53-020 | 0.28 | 12.38 | 9.6 | 85.5 | 83.4 | 2.1 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 53-030 | 0.44 | 11.37 | 13.9 | 124.2 | 121.0 | 3.1 | 0.3 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 53-040 | 0.45 | 2.78 | 3.5 | 31.3 | 30.5 | 0.8 | 0.1 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53-050 | 0.45 | 13.66 | 17.3 | 153.7 | 149.8 | 3.8 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 53-060 | 0.45 | 20.37 | 25.7 | 229.2 | 223.4 | 5.7 | 0.6 | 1.1 | 1.2 | 0.2 | 0.0 | 0.0 | 0.1 |
| 53-070 | 0.45 | 4.89 | 6.2 | 55.0 | 53.6 | 1.4 | 0.1 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53-080 | 0.39 | 5.81 | 6.4 | 57.3 | 55.8 | 1.4 | 0.2 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53-090 | 0.46 | 59.59 | 76.8 | 684.1 | 666.8 | 16.9 | 1.8 | 3.2 | 3.5 | 0.5 | 0.1 | 0.1 | 0.4 |
| 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 |
| 53-110 | 0.38 | 4.59 | 5.0 | 44.2 | 43.1 | 1.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53-120A/B | 0.46 | 129.79 | 166.0 | 1,478.6 | 1,441.0 | 36.5 | 3.9 | 6.9 | 7.6 | 1.2 | 0.3 | 0.2 | 0.9 |
| 53-130 | 0.45 | 5.02 | 6.3 | 56.5 | 55.0 | 1.4 | 0.1 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53-140 | 0.45 | 6.36 | 8.0 | 71.6 | 69.7 | 1.8 | 0.2 | 0.3 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 53-150 | 0.48 | 90.4 | 122.8 | 1,093.6 | 1,065.8 | 27.0 | 2.9 | 5.1 | 5.6 | 0.9 | 0.2 | 0.2 | 0.7 |
| 53-160 | 0.47 | 252.19 | 334.7 | 2,981.1 | 2,905.3 | 73.6 | 7.9 | 13.8 | 15.3 | 2.3 | 0.6 | 0.4 | 1.9 |
| 53-170 | 0.36 | 6.39 | 6.5 | 57.7 | 56.2 | 1.4 | 0.2 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53-180 | 0.10 | 8.09 | 2.3 | 20.2 | 19.7 | 0.5 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53-190 | 0.30 | 11.41 | 9.6 | 85.7 | 83.6 | 2.1 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 54-010A/B | 0.44 | 84.93 | 103.7 | 923.9 | 900.4 | 22.8 | 2.4 | 4.3 | 4.7 | 0.7 | 0.2 | 0.1 | 0.6 |
| 54-040A/B | 0.49 | 255.14 | 354.5 | 3,157.4 | 3,077.2 | 77.9 | 8.4 | 14.6 | 16.2 | 2.5 | 0.6 | 0.5 | 2.0 |
| 54-050 | 0.17 | 9.27 | 4.5 | 40.3 | 39.3 | 1.0 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-060 | 0.44 | 32.13 | 39.6 | 352.9 | 343.9 | 8.7 | 0.9 | 1.6 | 1.8 | 0.3 | 0.1 | 0.1 | 0.2 |
| 54-070 | 0.36 | 60.8 | 61.2 | 545.1 | 531.3 | 13.5 | 1.4 | 2.5 | 2.8 | 0.4 | 0.1 | 0.1 | 0.3 |
| 54-080A/B/C | 0.46 | 414.26 | 531.6 | 4,734.6 | 4,614.2 | 116.9 | 12.5 | 22.0 | 24.2 | 3.7 | 0.9 | 0.7 | 3.0 |
| 54-090 | 0.10 | 3.55 | 1.0 | 8.9 | 8.7 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-100A/B | 0.60 | 114.24 | 191.1 | 1,701.6 | 1,658.3 | 42.0 | 4.5 | 7.9 | 8.7 | 1.3 | 0.3 | 0.2 | 1.1 |
| 54-110 | 0.45 | 24.55 | 31.0 | 276.2 | 269.2 | 6.8 | 0.7 | 1.3 | 1.4 | 0.2 | 0.1 | 0.0 | 0.2 |
| 54-120 | 0.46 | 62.08 | 79.6 | 709.3 | 691.3 | 17.5 | 1.9 | 3.3 | 3.6 | 0.6 | 0.1 | 0.1 | 0.5 |
| 54-130 | 0.10 | 1.07 | 0.3 | 2.7 | 2.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-140A/B | 0.41 | 113.01 | 129.4 | 1,152.7 | 1,123.4 | 28.5 | 3.1 | 5.3 | 5.9 | 0.9 | 0.2 | 0.2 | 0.7 |
| 54-150 | 0.45 | 55.34 | 69.2 | 616.2 | 600.5 | 15.2 | 1.6 | 2.9 | 3.2 | 0.5 | 0.1 | 0.1 | 0.4 |

# 2006 FALL POLLUTANT LOADINGS BY OUTFALL

**2006 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/06 - 12/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fall Median Event Mean Concentration** | | | 10.6 | 94 | 92 | 2.33 | 0.250 | 0.438 | 0.483 | 0.074 | 0.018 | 0.014 | 0.060 |
| **Precipitation (meters)** | **0.150** | | | | | | | | | | | | |
| 54-160 | 0.60 | 2.62 | 4.4 | 39.3 | 38.3 | 1.0 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-170 | 0.59 | 8.08 | 13.5 | 120.1 | 117.1 | 3.0 | 0.3 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 54-180 | 0.60 | 2.82 | 4.8 | 42.3 | 41.2 | 1.0 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-190 | 0.10 | 2.2 | 0.6 | 5.5 | 5.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-200 | 0.10 | 2.13 | 0.6 | 5.3 | 5.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54-210 | 0.10 | 1.14 | 0.3 | 2.9 | 2.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 55-010 | 0.60 | 14.98 | 25.2 | 224.7 | 219.0 | 5.5 | 0.6 | 1.0 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 55-020 | 0.60 | 189.58 | 317.3 | 2,825.6 | 2,753.8 | 69.7 | 7.5 | 13.1 | 14.5 | 2.2 | 0.5 | 0.4 | 1.8 |
| 56-010 | 0.60 | 67.62 | 113.9 | 1,014.4 | 988.7 | 25.0 | 2.7 | 4.7 | 5.2 | 0.8 | 0.2 | 0.1 | 0.6 |
| 57-010 | 0.53 | 26.1 | 39.1 | 348.1 | 339.3 | 8.6 | 0.9 | 1.6 | 1.8 | 0.3 | 0.1 | 0.1 | 0.2 |
| 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 |
| 57-030 | 0.45 | 18.22 | 23.0 | 205.0 | 199.8 | 5.1 | 0.5 | 1.0 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 57-040 | 0.35 | 39.88 | 39.1 | 348.0 | 339.1 | 8.6 | 0.9 | 1.6 | 1.8 | 0.3 | 0.1 | 0.1 | 0.2 |
| 57-050 | 0.45 | 7.9 | 10.0 | 88.9 | 86.6 | 2.2 | 0.2 | 0.4 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 57-060 | 0.46 | 26.11 | 33.9 | 301.9 | 294.2 | 7.5 | 0.8 | 1.4 | 1.5 | 0.2 | 0.1 | 0.0 | 0.2 |
| 57-070 | 0.45 | 81.33 | 103.0 | 917.3 | 894.0 | 22.6 | 2.4 | 4.3 | 4.7 | 0.7 | 0.2 | 0.1 | 0.6 |
| 57-080 | 0.42 | 5.54 | 6.6 | 58.6 | 57.1 | 1.4 | 0.2 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57-090 | 0.47 | 77.77 | 102.5 | 912.6 | 889.4 | 22.5 | 2.4 | 4.2 | 4.7 | 0.7 | 0.2 | 0.1 | 0.6 |
| 57-100A/B | 0.47 | 313.43 | 415.7 | 3,702.2 | 3,608.1 | 91.4 | 9.8 | 17.2 | 18.9 | 2.9 | 0.7 | 0.5 | 2.4 |
| 57-110 | 0.54 | 21.6 | 32.8 | 292.1 | 284.6 | 7.2 | 0.8 | 1.4 | 1.5 | 0.2 | 0.1 | 0.0 | 0.2 |
| 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 |
| 57-130 | 0.10 | 1.16 | 0.3 | 2.9 | 2.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57-140 | 0.10 | 1.55 | 0.4 | 3.9 | 3.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57-150 | 0.43 | 35.68 | 43.2 | 385.0 | 375.3 | 9.5 | 1.0 | 1.8 | 2.0 | 0.3 | 0.1 | 0.1 | 0.2 |
| 57-160 | 0.10 | 1.89 | 0.5 | 4.7 | 4.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 61-010 | 0.55 | 2.86 | 4.4 | 39.5 | 38.5 | 1.0 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 62-010 | 0.45 | 27.84 | 35.3 | 314.7 | 306.7 | 7.8 | 0.8 | 1.5 | 1.6 | 0.2 | 0.1 | 0.0 | 0.2 |
| 63-010 | 0.45 | 388.79 | 493.5 | 4,395.2 | 4,283.5 | 108.5 | 11.6 | 20.4 | 22.5 | 3.4 | 0.8 | 0.6 | 2.8 |
| 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 |
| 64-100 | 0.45 | 24.92 | 31.5 | 280.1 | 273.0 | 6.9 | 0.7 | 1.3 | 1.4 | 0.2 | 0.1 | 0.0 | 0.2 |
| 64-110 | 0.45 | 6.01 | 7.6 | 67.6 | 65.9 | 1.7 | 0.2 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 64-120 | 0.45 | 16.04 | 20.3 | 180.5 | 175.9 | 4.5 | 0.5 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 64-130 | 0.45 | 2.44 | 3.1 | 27.5 | 26.8 | 0.7 | 0.1 | 0.1 | 0.1 | 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 |
| 65-020 | 0.53 | 38.46 | 57.1 | 508.9 | 495.9 | 12.6 | 1.3 | 2.4 | 2.6 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-010 | 0.46 | 6.23 | 8.0 | 71.4 | 69.6 | 1.8 | 0.2 | 0.3 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-015 | 0.45 | 11.69 | 14.8 | 131.5 | 128.2 | 3.2 | 0.3 | 0.6 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-020 | 0.45 | 37.55 | 47.4 | 422.5 | 411.8 | 10.4 | 1.1 | 2.0 | 2.2 | 0.3 | 0.1 | 0.1 | 0.3 |
| 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 |
| 70-030 | 0.45 | 13.48 | 17.0 | 151.6 | 147.7 | 3.7 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-035 | 0.45 | 4.53 | 5.7 | 51.0 | 49.7 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-040 | 0.45 | 2.42 | 3.1 | 27.2 | 26.5 | 0.7 | 0.1 | 0.1 | 0.1 | 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 |
| 70-050 | 0.45 | 17.41 | 22.0 | 195.9 | 190.9 | 4.8 | 0.5 | 0.9 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-055 | 0.46 | 333.43 | 434.5 | 3,869.3 | 3,770.9 | 95.5 | 10.2 | 18.0 | 19.8 | 3.0 | 0.7 | 0.6 | 2.5 |
| 70-060 | 0.45 | 3.53 | 4.5 | 39.7 | 38.7 | 1.0 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-065 | 0.45 | 1.89 | 2.4 | 21.3 | 20.7 | 0.5 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-070 | 0.45 | 5.8 | 7.3 | 65.3 | 63.6 | 1.6 | 0.2 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-075 | 0.43 | 5 | 6.1 | 53.9 | 52.6 | 1.3 | 0.1 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-080 | 0.46 | 11.96 | 15.5 | 138.2 | 134.6 | 3.4 | 0.4 | 0.6 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-085 | 0.45 | 229.48 | 288.1 | 2,566.2 | 2,500.9 | 63.3 | 6.8 | 11.9 | 13.1 | 2.0 | 0.5 | 0.4 | 1.6 |
| 70-090 | 0.45 | 18.57 | 23.5 | 208.9 | 203.6 | 5.2 | 0.6 | 1.0 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-095 | 0.45 | 9.99 | 12.6 | 112.4 | 109.5 | 2.8 | 0.3 | 0.5 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-100 | 0.45 | 9.64 | 12.2 | 108.5 | 105.7 | 2.7 | 0.3 | 0.5 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-105 | 0.45 | 1.63 | 2.1 | 18.3 | 17.9 | 0.5 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-110 | 0.45 | 18.13 | 22.9 | 204.0 | 198.8 | 5.0 | 0.5 | 0.9 | 1.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-115 | 0.45 | 3.71 | 4.7 | 41.7 | 40.7 | 1.0 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-120 | 0.45 | 4.22 | 5.3 | 47.5 | 46.3 | 1.2 | 0.1 | 0.2 | 0.2 | 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 |
| 70-130 | 0.49 | 34.29 | 47.5 | 423.3 | 412.5 | 10.4 | 1.1 | 2.0 | 2.2 | 0.3 | 0.1 | 0.1 | 0.3 |
| 70-135 | 0.45 | 7.46 | 9.4 | 83.9 | 81.8 | 2.1 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-140 | 0.60 | 0.78 | 1.3 | 11.7 | 11.4 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-145 | 0.60 | 9.19 | 15.5 | 137.9 | 134.4 | 3.4 | 0.4 | 0.6 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-150 | 0.45 | 4.51 | 5.7 | 50.7 | 49.5 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-155 | 0.45 | 2.05 | 2.6 | 23.1 | 22.5 | 0.6 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-160 | 0.45 | 2.95 | 3.7 | 33.2 | 32.3 | 0.8 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-165 | 0.45 | 27.77 | 35.1 | 312.5 | 304.5 | 7.7 | 0.8 | 1.4 | 1.6 | 0.2 | 0.1 | 0.0 | 0.2 |
| 70-170 | 0.45 | 23.74 | 30.0 | 267.1 | 260.3 | 6.6 | 0.7 | 1.2 | 1.4 | 0.2 | 0.0 | 0.0 | 0.2 |
| 70-175 | 0.46 | 30.89 | 39.7 | 353.1 | 344.2 | 8.7 | 0.9 | 1.6 | 1.8 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-180 | 0.45 | 1.14 | 1.4 | 12.8 | 12.5 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-185 | 0.45 | 1.53 | 1.9 | 17.2 | 16.8 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-190 | 0.17 | 15.04 | 7.3 | 64.7 | 63.1 | 1.6 | 0.2 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-195 | 0.45 | 46.02 | 58.5 | 520.6 | 507.4 | 12.9 | 1.4 | 2.4 | 2.7 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-200 | 0.45 | 31.52 | 39.8 | 354.7 | 345.6 | 8.8 | 0.9 | 1.6 | 1.8 | 0.3 | 0.1 | 0.1 | 0.2 |
| 70-205 | 0.45 | 1.39 | 1.8 | 15.6 | 15.2 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-210 | 0.45 | 3.58 | 4.5 | 40.3 | 39.3 | 1.0 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-215 | 0.45 | 5.93 | 7.5 | 66.7 | 65.0 | 1.6 | 0.2 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |

# 2006 FALL POLLUTANT LOADINGS BY OUTFALL

**2006 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/06 - 12/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fall Median Event Mean Concentration** | | | 10.6 | 94 | 92 | 2.33 | 0.250 | 0.438 | 0.483 | 0.074 | 0.018 | 0.014 | 0.060 |
| **Precipitation (meters)** | **0.150** | | | | | | | | | | | | |
| 70-220 | 0.45 | 4.54 | 5.7 | 51.1 | 49.8 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-225 | 0.45 | 4.99 | 6.3 | 56.1 | 54.7 | 1.4 | 0.1 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-230 | 0.45 | 4.72 | 6.0 | 53.1 | 51.8 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-235 | 0.45 | 5.04 | 6.4 | 56.7 | 55.3 | 1.4 | 0.2 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-240 | 0.45 | 4.52 | 5.7 | 50.9 | 49.6 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-245 | 0.44 | 9.98 | 12.3 | 109.5 | 106.8 | 2.7 | 0.3 | 0.5 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-250 | 0.48 | 41.27 | 55.9 | 497.7 | 485.1 | 12.3 | 1.3 | 2.3 | 2.5 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-255 | 0.45 | 45.37 | 57.3 | 510.6 | 497.7 | 12.6 | 1.4 | 2.4 | 2.6 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-260 | 0.46 | 24.9 | 32.0 | 285.0 | 277.7 | 7.0 | 0.8 | 1.3 | 1.5 | 0.2 | 0.1 | 0.0 | 0.2 |
| 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 |
| 70-270 | 0.45 | 4.66 | 5.9 | 52.4 | 51.1 | 1.3 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-275 | 0.45 | 4.28 | 5.4 | 48.2 | 46.9 | 1.2 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-280 | 0.45 | 9.39 | 11.9 | 105.8 | 103.1 | 2.6 | 0.3 | 0.5 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-285 | 0.45 | 19.03 | 24.0 | 213.9 | 208.4 | 5.3 | 0.6 | 1.0 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-290 | 0.45 | 2.37 | 3.0 | 26.4 | 25.8 | 0.7 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-295 | 0.45 | 7.18 | 9.1 | 80.8 | 78.7 | 2.0 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-300 | 0.10 | 0.4 | 0.1 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-305 | 0.45 | 12.68 | 15.9 | 141.4 | 137.8 | 3.5 | 0.4 | 0.7 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 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 |
| 70-315 | 0.30 | 5.79 | 4.9 | 43.4 | 42.3 | 1.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-320 | 0.44 | 2.32 | 2.9 | 25.5 | 24.8 | 0.6 | 0.1 | 0.1 | 0.1 | 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 |
| 70-330 | 0.47 | 279.41 | 369.5 | 3,290.9 | 3,207.2 | 81.2 | 8.7 | 15.3 | 16.8 | 2.6 | 0.6 | 0.5 | 2.1 |
| 70-335 | 0.45 | 1.99 | 2.5 | 22.4 | 21.8 | 0.6 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-340 | 0.39 | 22.25 | 24.6 | 218.9 | 213.3 | 5.4 | 0.6 | 1.0 | 1.1 | 0.2 | 0.0 | 0.0 | 0.1 |
| 70-345 | 0.45 | 3.81 | 4.8 | 42.9 | 41.8 | 1.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-350 | 0.49 | 314.4 | 436.2 | 3,884.4 | 3,785.6 | 95.9 | 10.3 | 18.0 | 19.9 | 3.0 | 0.7 | 0.6 | 2.5 |
| 70-355 | 0.45 | 1.29 | 1.6 | 14.5 | 14.1 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-360 | 0.45 | 131.96 | 168.4 | 1,499.6 | 1,461.5 | 37.0 | 4.0 | 7.0 | 7.7 | 1.2 | 0.3 | 0.2 | 1.0 |
| 70-365 | 0.45 | 6.7 | 8.5 | 75.4 | 73.5 | 1.9 | 0.2 | 0.3 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-370 | 0.44 | 3.75 | 4.7 | 41.5 | 40.5 | 1.0 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-375 | 0.47 | 7.1 | 9.4 | 83.9 | 81.8 | 2.1 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-380 | 0.45 | 14.4 | 18.2 | 162.0 | 157.9 | 4.0 | 0.4 | 0.8 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-385 | 0.45 | 14.97 | 18.9 | 168.4 | 164.2 | 4.2 | 0.4 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-390 | 0.46 | 58.11 | 75.6 | 673.1 | 656.0 | 16.6 | 1.8 | 3.1 | 3.4 | 0.5 | 0.1 | 0.1 | 0.4 |
| 70-395 | 0.43 | 57.19 | 69.0 | 614.2 | 598.6 | 15.2 | 1.6 | 2.8 | 3.1 | 0.5 | 0.1 | 0.1 | 0.4 |
| 70-400 | 0.44 | 9.67 | 11.9 | 106.1 | 103.4 | 2.6 | 0.3 | 0.5 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-405 | 0.25 | 7.16 | 5.0 | 44.8 | 43.6 | 1.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-410 | 0.43 | 5.8 | 7.0 | 62.2 | 60.6 | 1.5 | 0.2 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-415 | 0.45 | 120.75 | 153.9 | 1,370.6 | 1,335.7 | 33.8 | 3.6 | 6.4 | 7.0 | 1.1 | 0.3 | 0.2 | 0.9 |
| 70-420 | 0.45 | 16.99 | 21.5 | 191.2 | 186.3 | 4.7 | 0.5 | 0.9 | 1.0 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-425 | 0.51 | 20.63 | 29.6 | 263.6 | 256.9 | 6.5 | 0.7 | 1.2 | 1.3 | 0.2 | 0.0 | 0.0 | 0.2 |
| 70-430 | 0.10 | 6.19 | 1.7 | 15.5 | 15.1 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-435 | 0.10 | 9.16 | 2.6 | 22.9 | 22.3 | 0.6 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-440 | 0.50 | 34.48 | 48.1 | 428.2 | 417.3 | 10.6 | 1.1 | 2.0 | 2.2 | 0.3 | 0.1 | 0.1 | 0.3 |
| 70-445 | 0.45 | 5.6 | 7.1 | 63.0 | 61.4 | 1.6 | 0.2 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-450 | 0.45 | 2.65 | 3.3 | 29.8 | 29.1 | 0.7 | 0.1 | 0.1 | 0.2 | 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 |
| 70-460 | 0.45 | 2.67 | 3.4 | 30.0 | 29.3 | 0.7 | 0.1 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-465 | 0.45 | 2.58 | 3.3 | 29.0 | 28.3 | 0.7 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-470 | 0.38 | 8.55 | 9.2 | 82.1 | 80.0 | 2.0 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-475 | 0.46 | 229.14 | 296.1 | 2,637.4 | 2,570.3 | 65.1 | 7.0 | 12.2 | 13.5 | 2.1 | 0.5 | 0.4 | 1.7 |
| 70-480 | 0.60 | 0.31 | 0.5 | 4.7 | 4.5 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-485 | 0.45 | 13.36 | 16.9 | 150.3 | 146.5 | 3.7 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-490 | 0.47 | 48.75 | 64.2 | 572.1 | 557.6 | 14.1 | 1.5 | 2.7 | 2.9 | 0.4 | 0.1 | 0.1 | 0.4 |
| 70-495 | 0.45 | 7.74 | 9.8 | 87.1 | 84.9 | 2.1 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-500 | 0.45 | 0.56 | 0.7 | 6.3 | 6.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-505 | 0.41 | 8.12 | 9.4 | 83.6 | 81.5 | 2.1 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-510 | 0.45 | 41.82 | 53.0 | 472.1 | 460.1 | 11.7 | 1.3 | 2.2 | 2.4 | 0.4 | 0.1 | 0.1 | 0.3 |
| 70-515 | 0.47 | 62.73 | 82.8 | 737.1 | 718.3 | 18.2 | 2.0 | 3.4 | 3.8 | 0.6 | 0.1 | 0.1 | 0.5 |
| 70-520 | 0.45 | 6.05 | 7.6 | 68.1 | 66.3 | 1.7 | 0.2 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-525 | 0.45 | 6.23 | 7.9 | 70.1 | 68.3 | 1.7 | 0.2 | 0.3 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 70-530 | 0.45 | 1.67 | 2.1 | 18.8 | 18.3 | 0.5 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-535 | 0.45 | 30.24 | 38.3 | 341.0 | 332.4 | 8.4 | 0.9 | 1.6 | 1.7 | 0.3 | 0.1 | 0.0 | 0.2 |
| 70-540 | 0.21 | 5.1 | 3.1 | 27.2 | 26.5 | 0.7 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-545 | 0.45 | 1.89 | 2.4 | 21.3 | 20.7 | 0.5 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-550 | 0.26 | 1.3 | 0.9 | 8.4 | 8.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-555 | 0.45 | 1.73 | 2.2 | 19.5 | 19.0 | 0.5 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-560 | 0.45 | 3.33 | 4.2 | 37.5 | 36.5 | 0.9 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-565 | 0.24 | 16.63 | 11.2 | 100.0 | 97.5 | 2.5 | 0.3 | 0.5 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-570 | 0.45 | 1.23 | 1.6 | 13.8 | 13.5 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70-575 | 0.45 | 15.39 | 19.4 | 173.0 | 168.6 | 4.3 | 0.5 | 0.8 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 |
| 70-580 | 0.43 | 119.93 | 146.1 | 1,300.8 | 1,267.7 | 32.1 | 3.4 | 6.0 | 6.7 | 1.0 | 0.2 | 0.2 | 0.8 |
| 71-010 | 0.10 | 1.12 | 0.3 | 2.8 | 2.7 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 71-020 | 0.45 | 14.05 | 17.8 | 158.1 | 154.1 | 3.9 | 0.4 | 0.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 71-030 | 0.45 | 28.58 | 36.3 | 323.3 | 315.1 | 8.0 | 0.9 | 1.5 | 1.7 | 0.3 | 0.1 | 0.0 | 0.2 |
| 71-040 | 0.22 | 20.93 | 12.9 | 114.9 | 111.9 | 2.8 | 0.3 | 0.5 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |

# 2006 FALL POLLUTANT LOADINGS BY OUTFALL

**2006 FALL POLLUTANT LOADINGS BY OUTFALL - KILOGRAMS (09/01/06 - 12/31/06**

| 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fall Median Event Mean Concentration** | | | 10.6 | 94 | 92 | 2.33 | 0.250 | 0.438 | 0.483 | 0.074 | 0.018 | 0.014 | 0.060 |
| **Precipitation (meters)** | **0.150** | | | | | | | | | | | | |
| 71-050 | 0.46 | 120.42 | 154.8 | 1,379.0 | 1,343.9 | 34.0 | 3.7 | 6.4 | 7.1 | 1.1 | 0.3 | 0.2 | 0.9 |
| 71-060 | 0.45 | 3.11 | 3.9 | 35.0 | 34.1 | 0.9 | 0.1 | 0.2 | 0.2 | 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 |
| 71-080 | 0.46 | 101.79 | 130.4 | 1,161.3 | 1,131.8 | 28.7 | 3.1 | 5.4 | 5.9 | 0.9 | 0.2 | 0.2 | 0.7 |
| 71-090 | 0.45 | 6.5 | 8.1 | 72.4 | 70.6 | 1.8 | 0.2 | 0.3 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 71-100 | 0.10 | 1.99 | 0.6 | 5.0 | 4.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-010 | 0.18 | 17.32 | 8.5 | 75.8 | 73.9 | 1.9 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 72-020 | 0.40 | 24.7 | 27.4 | 244.0 | 237.8 | 6.0 | 0.6 | 1.1 | 1.2 | 0.2 | 0.0 | 0.0 | 0.2 |
| 72-030 | 0.10 | 5.25 | 1.5 | 13.1 | 12.8 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-040 | 0.42 | 166.54 | 194.8 | 1,734.5 | 1,690.4 | 42.8 | 4.6 | 8.0 | 8.9 | 1.4 | 0.3 | 0.3 | 1.1 |
| 72-050 | 0.10 | 5.16 | 1.4 | 12.9 | 12.6 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-060 | 0.36 | 113.04 | 114.8 | 1,022.4 | 996.4 | 25.2 | 2.7 | 4.7 | 5.2 | 0.8 | 0.2 | 0.1 | 0.6 |
| 72-070 | 0.10 | 2.21 | 0.6 | 5.5 | 5.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-080 | 0.60 | 4.74 | 8.0 | 71.1 | 69.3 | 1.8 | 0.2 | 0.3 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 72-090 | 0.45 | 68.71 | 86.3 | 768.2 | 748.7 | 19.0 | 2.0 | 3.6 | 3.9 | 0.6 | 0.1 | 0.1 | 0.5 |
| 72-100 | 0.46 | 68.32 | 88.8 | 790.9 | 770.8 | 19.5 | 2.1 | 3.7 | 4.0 | 0.6 | 0.1 | 0.1 | 0.5 |
| 72-110 | 0.10 | 3.22 | 0.9 | 8.1 | 7.8 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-120 | 0.45 | 62.98 | 79.6 | 708.6 | 690.6 | 17.5 | 1.9 | 3.3 | 3.6 | 0.6 | 0.1 | 0.1 | 0.5 |
| 72-130 | 0.46 | 58.06 | 74.4 | 662.5 | 645.6 | 16.4 | 1.8 | 3.1 | 3.4 | 0.5 | 0.1 | 0.1 | 0.4 |
| 72-140 | 0.10 | 10.19 | 2.9 | 25.5 | 24.8 | 0.6 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-150 | 0.10 | 4.76 | 1.3 | 11.9 | 11.6 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72-160 | 0.10 | 4.55 | 1.3 | 11.4 | 11.1 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 73-010 | 0.44 | 20.76 | 25.6 | 227.8 | 222.0 | 5.6 | 0.6 | 1.1 | 1.2 | 0.2 | 0.0 | 0.0 | 0.1 |
| 73-020 | 0.44 | 57.47 | 71.4 | 636.0 | 619.8 | 15.7 | 1.7 | 3.0 | 3.3 | 0.5 | 0.1 | 0.1 | 0.4 |
| 73-030 | 0.10 | 21.56 | 6.1 | 53.9 | 52.5 | 1.3 | 0.1 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 74-010 | 0.48 | 44.39 | 59.7 | 531.3 | 517.8 | 13.1 | 1.4 | 2.5 | 2.7 | 0.4 | 0.1 | 0.1 | 0.3 |
| 74-020 | 0.45 | 4.41 | 5.6 | 49.6 | 48.4 | 1.2 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75-005 | 0.45 | 12.39 | 15.6 | 139.2 | 135.7 | 3.4 | 0.4 | 0.6 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| 75-010 | 0.60 | 3.65 | 6.1 | 54.8 | 53.4 | 1.4 | 0.1 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75-020 | 0.45 | 1.53 | 1.9 | 17.2 | 16.8 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75-030 | 0.45 | 8.38 | 10.6 | 94.3 | 91.9 | 2.3 | 0.2 | 0.4 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 75-040 | 0.45 | 14.74 | 18.6 | 165.8 | 161.6 | 4.1 | 0.4 | 0.8 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 |
| 76-010 | 0.46 | 907.31 | 1,181.6 | 10,522.7 | 10,255.2 | 259.7 | 27.9 | 48.8 | 53.8 | 8.2 | 2.0 | 1.5 | 6.7 |
| 76-020 | 0.46 | 88.62 | 113.4 | 1,009.7 | 984.0 | 24.9 | 2.7 | 4.7 | 5.2 | 0.8 | 0.2 | 0.1 | 0.6 |
| 76-030 | 0.45 | 7.55 | 9.5 | 85.0 | 82.8 | 2.1 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 |
| 76-040 | 0.19 | 4.67 | 2.4 | 21.7 | 21.2 | 0.5 | 0.1 | 0.1 | 0.1 | 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 |
| 81-010 | 0.10 | 31.17 | 8.8 | 77.9 | 76.0 | 1.9 | 0.2 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 82-010 | 0.49 | 23.53 | 32.1 | 286.3 | 279.0 | 7.1 | 0.8 | 1.3 | 1.5 | 0.2 | 0.1 | 0.0 | 0.2 |
| 82-020 | 0.45 | 73.45 | 93.8 | 835.3 | 814.0 | 20.6 | 2.2 | 3.9 | 4.3 | 0.7 | 0.2 | 0.1 | 0.5 |
| 82-030 | 0.45 | 90.04 | 114.9 | 1,023.7 | 997.7 | 25.3 | 2.7 | 4.7 | 5.2 | 0.8 | 0.2 | 0.1 | 0.7 |
| 82-040 | 0.46 | 98.49 | 128.3 | 1,142.4 | 1,113.4 | 28.2 | 3.0 | 5.3 | 5.8 | 0.9 | 0.2 | 0.2 | 0.7 |
| 83-010 | 0.45 | 6.59 | 8.3 | 74.1 | 72.3 | 1.8 | 0.2 | 0.3 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 |
| 83-015 | 0.45 | 0.99 | 1.3 | 11.1 | 10.9 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-020 | 0.43 | 85.96 | 104.9 | 934.5 | 910.7 | 23.1 | 2.5 | 4.3 | 4.8 | 0.7 | 0.2 | 0.1 | 0.6 |
| 83-025 | 0.45 | 51.23 | 64.7 | 576.4 | 561.8 | 14.2 | 1.5 | 2.7 | 2.9 | 0.5 | 0.1 | 0.1 | 0.4 |
| 83-030 | 0.60 | 0.82 | 1.4 | 12.3 | 12.0 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-040 | 0.10 | 1.08 | 0.3 | 2.7 | 2.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-050 | 0.45 | 40.4 | 51.2 | 455.8 | 444.2 | 11.3 | 1.2 | 2.1 | 2.3 | 0.4 | 0.1 | 0.1 | 0.3 |
| 83-060 | 0.45 | 10.05 | 12.7 | 113.1 | 110.2 | 2.8 | 0.3 | 0.5 | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 |
| 83-070 | 0.10 | 1.19 | 0.3 | 3.0 | 2.9 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83-080 | 0.48 | 178.63 | 238.4 | 2,123.5 | 2,069.5 | 52.4 | 5.6 | 9.9 | 10.9 | 1.7 | 0.4 | 0.3 | 1.3 |
| 83-090 | 0.41 | 9.16 | 10.5 | 93.9 | 91.5 | 2.3 | 0.2 | 0.4 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 |
| 84-010 | 0.47 | 21.56 | 28.5 | 253.6 | 247.1 | 6.3 | 0.7 | 1.2 | 1.3 | 0.2 | 0.0 | 0.0 | 0.2 |
| 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 |
| **FALL SEASONAL SUM (kg)** | | | **37,924.82** | **337,745.59** | **329,158.84** | **8,336.31** | **894.45** | **1,567.08** | **1,728.08** | **264.76** | **62.61** | **49.37** | **214.67** |

# Comparison 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 | Cu mg\l | Pb mg\l | Zn mg\l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Winter/snowmelt Median Event Mean Concentration** | | | 10.8 | 240 | 909 | 3.72 | 1.16 | 0.833 | 0.769 | 0.078 | 0.061 | 0.039 | 0.240 |
| **Precipitation** | **0.077** | **3.03** | | | | | | | | | | | |
| Winter/snowmelt Season Sum (kilograms) | | | 38,640 | 858,675 | 3,252,232 | 13,309 | 4,150 | 2,980 | 2,751 | 279 | 220 | 141 | 859 |
| | | | | | | | | | | | | | |
| **Spring Median Event Mean Concentration** | | | 18.5 | 210 | 63.5 | 3.63 | 1.47 | 0.759 | 0.593 | 0.071 | 0.041 | 0.050 | 0.209 |
| **Precipitation** | **0.194** | **7.63** | | | | | | | | | | | |
| Spring Season Sum (kilograms) | | | 166,763 | 1,892,989 | 572,404 | 32,722 | 13,251 | 6,842 | 5,345 | 640 | 370 | 448 | 1,884 |
| | | | | | | | | | | | | | |
| **Summer Median Event Mean Concentration** | | | 7.6 | 112 | 80.8 | 3.09 | 1.19 | 0.649 | 0.503 | 0.090 | 0.019 | 0.020 | 0.064 |
| **Precipitation** | **0.279** | **11.00** | | | | | | | | | | | |
| Summer Season Sum (kilograms) | | | 98,136 | 1,451,942 | 1,047,472 | 40,058 | 15,427 | 8,413 | 6,521 | 1,167 | 251 | 258 | 830 |
| | | | | | | | | | | | | | |
| **Fall Median Event Mean Concentration** | | | 10.6 | 94.4 | 92.0 | 2.33 | 0.250 | 0.438 | 0.483 | 0.074 | 0.018 | 0.014 | 0.060 |
| **Precipitation** | **0.150** | **5.90** | | | | | | | | | | | |
| Fall Season Sum (kilograms) | | | 37,925 | 337,746 | 329,159 | 8,336 | 894 | 1,567 | 1,728 | 265 | 63 | 49 | 215 |
| | | | | | | | | | | | | | |
| **Summation of Seasan Totals (kilograms)** | **0.700** | **27.56** | 341,464 | 4,541,351 | 5,201,267 | 94,425 | 33,723 | 19,803 | 16,346 | 2,351 | 903 | 896 | 3,787 |
| | | | | | | | | | | | | | |
| **Mean Flow Weighted Mean Concentration - all 2006 sites** | | | 9 | 156 | 183 | 3.54 | 1.64 | 0.638 | 0.548 | 0.135 | 0.029 | 0.031 | 0.094 |
| **Precipitation** | **0.700** | **27.56** | | | | | | | | | | | |
| **ANNUAL SUMMATION (kilograms)** | | | 292,730 | 5,073,990 | 5,952,181 | 115,141 | 53,342 | 20,751 | 17,824 | 4,391 | 937 | 1,008 | 3,057 |
| **ANNUAL POLLUTANT LOADINGS BY RECEIVING WATER (kilograms)** | | | 323,841 | 5,613,244 | 9,819,903 | 127,377 | 59,011 | 22,957 | 19,718 | 4,858 | 1,036 | 1,115 | 3,382 |

# CITY OF MINNEAPOLIS
# STORMWATER MANAGEMENT ORDINANCE 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*". The Chapter 54 ordinance establishes requirements for projects with land disturbing activities on sites greater than one (1) acre, including phased or connected actions, and for existing stormwater devices.

**Goals:** The purpose of this ordinance is to minimize negative impacts of storm water runoff rates, volumes and quality on Minneapolis lakes, streams, wetlands, and the Mississippi River by guiding future significant development and redevelopment activity, and by assuring long-term effectiveness of existing and future storm water management constructed facilities. Chapter 54 Ordinance specifies that stormwater management standards be set according to the receiving water body, and the table below lists discharge requirements by receiving water. The 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 stormwater discharging to Minneapolis lakes, rivers and wetlands

**Minneapolis Development Review:** Stormwater Management Plans are required for all construction projects greater than 1 acre in size. These plans are reviewed through the "Minneapolis Development Review" process. Responsibility for ongoing operation and maintenance is one component of the Stormwater Management Plan.

**Registration:** Stormwater devices shall be registered with the City of Minneapolis Department of Regulatory Services, with an annual permit being required for each registered stormwater device.

**Stormwater 'Buyout' for off-site management, in lieu of on-site treatment:** This option is reserved for only those sites that demonstrate that performance of on-site stormwater management is not feasible. With approval of the City Engineer, the Chapter 54 Ordinance allows developers to contribute to the construction of a regional stormwater facility in lieu of on-site treatment/management. Final plan approval is conditional on payment received.

For the complete text of the *Chapter 54 Ordinance* requirements, see the Minneapolis Storm and Surface Water Management website: http://www.ci.minneapolis.mn.us/stormwater/fee/requirements_chapter54.asp

# CITY OF MINNEAPOLIS
# STORMWATER MANAGEMENT ORDINANCE SUMMARY

| 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[1] | 30% phosphorus load reduction |
| Spring Lake | 30% phosphorus load reduction |
| Crystal Lake[2] | 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 |

[1] Wirth Lake is not within the limits of the City of Minneapolis
[2] Crystal Lake in located in Robbinsdale, but receives run-off from Minneapolis

# *Impacts of Erosion and Sediment from Construction Sites*

**Each year 80 million tons of sediment from construction sites enters our 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]**

Stopping erosion before it happens is essential. "Erosion" is the displacement of soil, for example by rain falling on unprotected slopes that have been cleared of vegetation, by driving on unprotected areas, or any other means. Once it has been displaced, it is considered to be "sediment". Once erosion has occurred, it is extremely difficult to remove the suspended soil in the runoff. 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.[2]

- 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.[3]
- Phosphorus and nitrogen in fertilizer can stimulate overgrowth of aquatic plants resulting in the depletion of dissolved oxygen[4] 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.[5]
- Sediment also can build up in storm sewers, catch basins, and other storm drainage devices which will then require additional maintenance.[6]

**Simple and easy to install and maintain erosion control and sediment control devices can be found at the following websites:**

*Minnesota Stormwater Manual* 7-page fact sheet on Temporary Erosion and Sediment Control:
http://www.pca.state.mn.us/publications/wq-strm9-22.pdf

*Urban Small Sites Best Management Practice Manual*, Chapter 3:
http://www.metrocouncil.org/environment/Watershed/bmp/manual.htm

For information on erosion control, or have additional questions, see the Minneapolis Erosion & Sediment Control website: http://www.ci.minneapolis.mn.us/stormwater/classroom-resources/erosioncontrollinks.asp or 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] *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

[3] *Construction Site Soil Erosion and Sediment Control.* Illinois Environmental Protection Agency. March 1999.

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

[5] *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

[6] 6. *Construction Site Soil Erosion and Sediment Control.* Illinois Environmental Protection Agency. March 1999.

# CITY OF MINNEAPOLIS
# EROSION & SEDIMENT CONTROL ORDINANCE 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. It is designed to ensure 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 & Sediment Control Permit prior to commencement of work. Those demolition and construction sites greater 5,000 square feet also require an approved erosion control plan before the Permit can be issued.

**Review:** For any project that goes through the Minneapolis Development Review (MDR) process, an erosion control plan is required and the Erosion & Sediment Control Permit is a component of the MDR process. For any project over 5,000 square feet that does not go through MDR, the review and approval of Erosion & Sediment Control is administered by Engineering Services.

**Enforcement:** Ongoing site inspections are by done by Minneapolis Public Works and Regulatory Services. Inspectors finding sites in violation of the ordinance may issue a warning notice, citation or a "***Stop Work Order***" for the entire project or a specified part. Failure to comply is a misdemeanor, and each day constitutes a separate offense. Failure of the permittee to comply with the Ordinance will constitute a violation and will be considered a nuisance pursuant to laws of Minnesota. 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 Ordinance, Fee Schedule and related information see the City 0f Minneapolis Erosion & Sediment Control website: http://www.ci.minneapolis.mn.us/stormwater/classroom-resources/erosioncontrollinks.asp

**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.

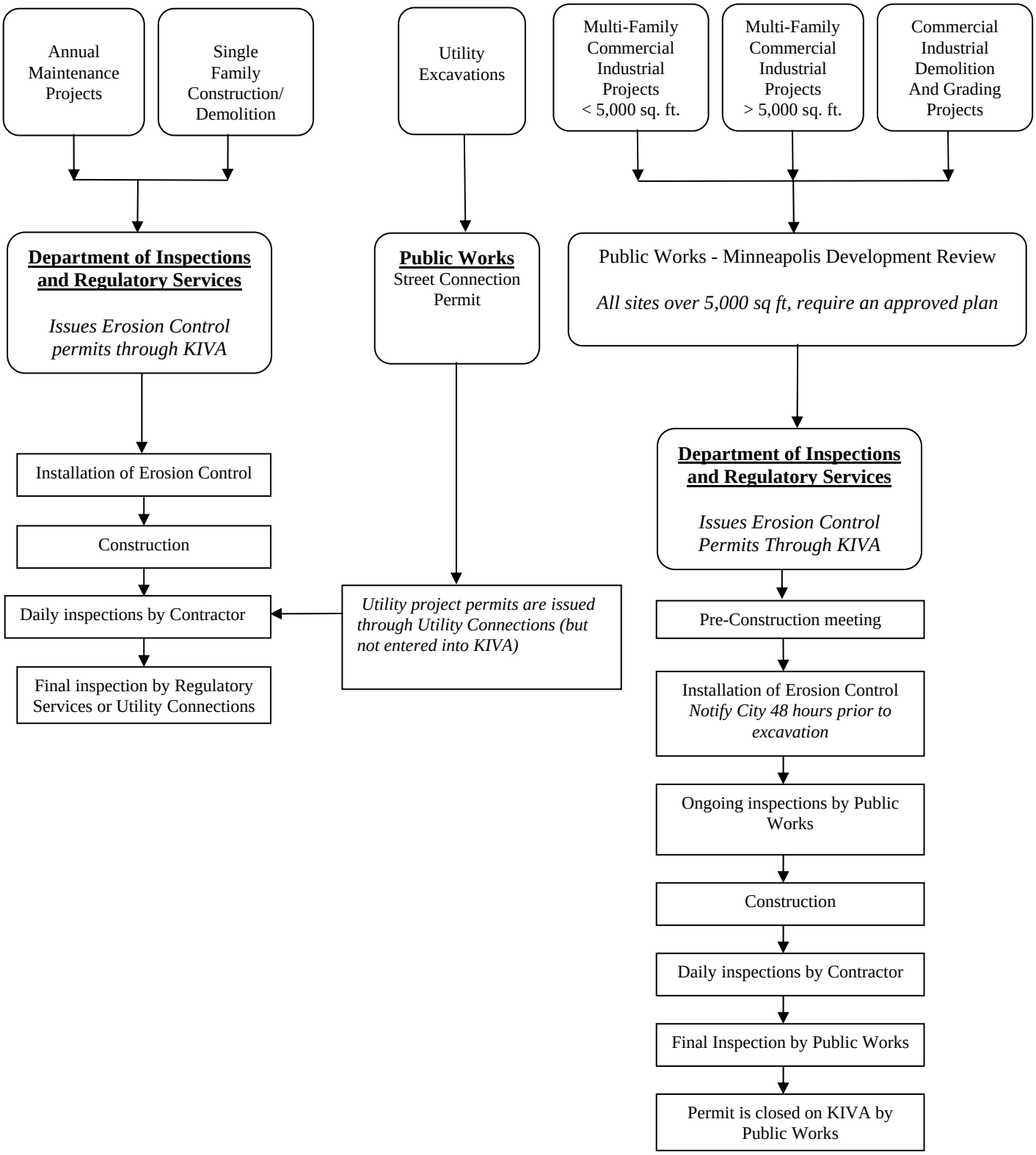
***The applicant may propose the use of any erosion and sediment control techniques in a Final Plan, provided such techniques are effective and approved by Minneapolis Public Works Engineering Services***

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
# EROSION CONTROL PERMITTING PROCESS
JUNE 1ST, 2007




Source: Minneapolis Public Works – Engineering Services

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 501 sq. ft. to 3,000 sq. ft. | YES | | NO | | $95.00 | ***YES*** |
| Single-family construction 3,001 sq. ft. or more | | ***YES*** | NO | | $95.00/3,000 sq. ft.<br>$30.00/ea. additional 1,000 sq. ft. | ***YES*** |
| Single family demolition | | ***YES*** | NO | | $95.00 | ***YES*** |
| Multi-family, Comm./Ind. Less than 500 sq. ft. ** | NO | | NO | | NO FEE | ***YES*** |
| Multi-family, Comm./Ind. More than 500 sq. ft. ** | | ***YES*** | NO | | $315.00 | ***YES*** |
| Multi-family, Comm./Ind. More than 5,000 sq. ft. ** | | ***YES*** | | ***YES*** | $315.00 | ***YES*** |
| Multi-family, Comm./Ind. Demo. Less than 5,000 sq. ft. | | ***YES*** | NO | | $190.00 | ***YES*** |
| Multi-family, Comm./Ind. Demo more than 5,000 sq. ft. | | ***YES*** | | ***YES*** | $190.00 | ***YES*** |
| Utilities less than 500 sq. ft. or 5 cubic yards | NO | | NO | | NO FEE | ***YES*** |
| Utilities more than 500 sq. ft. or 5 cubic yards | | ***YES*** | NO | | $ .13/lin. ft.<br>$62.00 minimum | ***YES*** |
| Maintenance projects/ Annual Permit | | ***YES*** | NO | | $315.00 | ***YES*** |
| Outside Normal Hours Inspection Fees (min. charge 2 hours or total cost to City whichever is greater) | | | | | $95.00 | |

* 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 Management - 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 - Shakopee, MN (952) 445-4071
- *Silt Screen* - Alpine Stormwater Management - 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 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
# SITE PLAN REVIEW CHECKLIST

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. *(Stormwater 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 (RCP) or Ductile Iron (DIP) 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 BMPs* where possible and may be required to provide rate control as directed by the City Engineer.

Also 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

DISCOVERY PHASE | PRELIMINARY REVIEW PHASE | DEVELOPER PLAN PREPARATION PHASE | QA PHASE | FORMAL PLAN REVIEW PHASE | PERMIT / BUILDING PHASE | INSPECTION PHASE | COMPLIANCE PHASE

THE DISCOVERY PHASE INVOLVES THE DEVELOPMENT COORDINATOR WORKING WITH THE CUSTOMER TO DETERMINE THE NEEDS OF THE PROJECT. BY THE END OF THE DISCOVERY PHASE THE DEVELOPMENT COORDINATOR WILL HAVE DETERMINED WHAT REVIEW PROCESSES THE PROJECT WILL BE SUBJECT TO.

DURING THE PRELIMINARY REVIEW PHASE THE PROPOSED PROJECT IS EXAMINED BY A NUMBER OF DISCIPLINES FOR ADHERENCE TO CITY DESIGN, ZONING AND PLANNING STANDARDS. DEPENDING ON THE NATURE OF THE PROJECT, IT MAY REQUIRE REVIEW BY PUBLIC WORKS (PDR) (i.e. ALL NEW CONSTRUCTION) AND A CURSORY REVIEW BY ZONING AND PLANNING. HOWEVER, IF THE PROJECT HAS ZONING CHANGES (BOARD OF ADJUSTMENTS) AND OR CONDITIONAL USE REQUIREMENTS (CITY PLANNING COMMISSION) IT MAY INVOLVE MORE EXTENSIVE REVIEW SERVICES.

THE PLAN PREPARATION PHASE IS THE PERIOD THAT INVOLVES THE CUSTOMER CREATING / CHANGING BUILDING PLANS TO INCLUDE THE RESULTS OF THE REVIEWS. THIS MAY INCLUDE A NUMBER OF SUBMISSIONS BASED ON THE NUMBER OF REVIEW MODIFICATIONS REQUESTED AND IN THE CASE OF "DESIGN DEVELOPMENT" THE NUMBER AND COMPLEXITY OF DESIGN CHANGES TO THE PROJECT. THROUGH THIS PHASE, THE DEVELOPMENT COORDINATOR SERVES AS THE PRIMARY POINT OF CONTACT FOR THE CUSTOMER; S/HE FOLLOWS UP AND COORDINATES ALL ACTIVITIES BETWEEN OTHER ONE STOP SERVICES AND THE CUSTOMER

ONCE THE PLANS HAVE BEEN COMPLETED AND ALL CHANGES MADE, THEY ARE READY FOR FORMAL REVIEW. PRIOR TO THIS ACTIVITY. THE DEVELOPMENT COORDINATOR PROVIDES A FINAL QUALITY CHECK TO ENSURE ALL REQUESTED CHANGES HAVE BEEN MADE.

THE FORMAL PLAN REVIEW PROVIDES ALL DISCIPLINES WITHIN THE ONE STOP DEPARTMENT INVOLVED IN THE PROJECT THE OPPORTUNITY TO FORMALLY REVIEW ALL DETAILS OF THE PROJECT. IN MOST CASES THE PROJECT IS APPROVED AND PERMITS ISSUED,.

AT THIS STAGE ALL REQUIRED PERMITS RELATED TO THE PROJECT ARE ISSUED AND THE CUSTOMER CAN BEGIN DEVELOPMENT

AS DEVELOPMENT CONTINUES, THE PERMITTED WORK MUST BE INSPECTED. MANY ITERATIONS OF INSPECTION TAKE PLACE DURING PROJECT DEVELOPMENT.

ONCE ALL PERMITTED WORK HAS BEEN INSPECTED AND APPROVED, A CERTIFICATE OF OCCUPANCY IS GRANTED AND THE DEVELOPMENT MAY NOW BE USED AS INTENDED.

A — CONSTRUCTION CODE SERVICES

BUILDING application completed for repair or replacement for 1-2 dwelling unit residential structures

Exterior Building
Plumbing
Electrical

B — PLANS REVIEWED FOR REGULATORY COMPLIANCE — RSPR — REGULATORY REVIEW SERVICES

C — CIVIL (PW) REVIEW SERVICES — PLANS REVIEWED FOR COMPLIANCE — PDR

D — LAND USE REVIEW SERVICES

E — DESIGN REVIEW SERVICES

DEVELOPMENT COORDINATOR determines proper application procedures & plan submittal requirements.

**DISCOVERY**

START

CUSTOMER INTERNAL OR EXTERNAL

Submits PLANS, APPLICATIONS, REQUESTS FOR INFORMATION

30-45 DAYS — MINOR SUBDIVISIONS

45-60 DAYS — REZONING
CONDITIONAL USE PERMITS
ZONING SITE PLAN REVIEW
SUBDIVISION PLATS & REG. LAND SURVEYS
CHANGES & EXPANSION OF NON-CONFORMING USE
LOCATION & DESIGN REVIEW
MORATORIA & WAIVERS
VARIANCES
APPEALS

60-120 DAYS — STREET ALLEY VACATIONS

BOARD OF ADJUSTMENT — BOA

CITY PLANNING COMMISSION — CPC

PDR AND CPC MAY BE CONDUCTED IN PARALLEL

PREPARE
CUSTOMER SUBMITS BUILDING / PROJECT PLANS FOR REVIEW
MODIFY
SUBMIT
REVIEW

QUALITY REVIEW

PLAN REVIEW
BUILDING
BUSINESS LICENSE
ENVIRONMENTAL HEALTH
FIRE
HPC
PUBLIC WORKS, ET AL.
Development Coordinator routes plans to appropriate City Depts for review and approval
REVISIONS?
NO
YES
QA
RESUBMIT
Developer revises plans per comments from ONE STOP SERVICES

PERMITS ISSUED
Building
Plumbing
Mechanical
Electrical
Sprinkler
Elevator

BUILDING CONSTRUCTION INSPECTED BY All disciplines

CERTIFICATE OF OCCUPANCY ISSUED (3)

END

A 30-day Temporary Certificate of Occupancy may be issued by DC if all safety-related code items have been resolved.

| 7 - 10 DAYS | 30 - 120 DAYS | UP TO 12 MONTHS | 10 DAYS | 1 - 120 DAYS | DETERMINED BY PROJECT | DETERMINED BY PROJECT | 1 DAY |
|---|---|---|---|---|---|---|---|

# MINNEAPOLIS DEVELOPMENT REVIEW SERVICES

Appendix A26

| PROJECT | DESCRIPTION | FILENAME | PREPARED BY |
|---|---|---|---|
| MINNEAPOLIS DEVELOPMENT REVIEW | MDR PROCESSES - ROADMAP | ROADMAP 11X17.VSD | M. S. ALLEN |
| **PROCESS ID** | **REVISED** | **PAGE** | **DATE** |
| PROCESS ROADMAP | 2/6/2007 | 1 OF 12 | 2/7/2005 |

**RESOLUTION 2005R-666**
**By Johnson**
**Designating the utility rates for water, sewer, stormwater, solid waste, and recycling service effective with water meters read on and after January 1, 2006.**

Resolved by The City Council of The City of Minneapolis:

**Effective with utility billings for water meters read from and after January 1, 2006, the meter rates for water are hereby fixed and shall be collected as follows:**

(a) Charges commence when the street valve is turned on for water service.

(b) Two dollars and sixty-two cents ($2.62) per one hundred (100) cubic feet for customers not otherwise mentioned, within the limits of the City of Minneapolis.

(c) Two dollars and sixty-two cents ($2.62) per one hundred (100) cubic feet to the United States Government within the city limits, and outside of or adjacent to the city limits, such rates and upon such terms as may be agreed upon by the city and the United States Government.

(d) Two dollars and sixty-two cents ($2.62) per one hundred (100) cubic feet to the University of Minnesota, the United States Veterans' Hospital, the metropolitan airports commission for service to Minneapolis-St. Paul International Airport, and all city-owned property.

(e) Two dollars and seventy-one cents ($2.71) per one hundred (100) cubic feet to municipalities and villages outside the corporate limits of the city where service to such municipalities or villages is given through a master meter.

(f) Two dollars and seventy-seven cents ($2.77) per one hundred (100) cubic feet to municipalities, municipal corporations, villages and customers outside the corporate limits of the city where service is furnished through individual customer meters.

(g) Rates for municipalities, municipal corporations and villages, which are established by contract, shall continue on the existing contract basis.

(h) Under the above rates no meter shall pay a less sum per billing period or fraction thereof for the use of water than the following:

| Meter Size | Net Minimum Monthly Bill | Net Minimum Quarterly Bill |
|---|---|---|
| 5/8-inch | $ 2.00 | $ 6.00 |
| 3/4-inch | 2.40 | 7.20 |
| 1-inch | 4.80 | 14.40 |
| 1 1/2-inch | 8.85 | 26.55 |
| 2-inch | 14.00 | 42.00 |
| 3-inch | 27.00 | 81.00 |
| 4-inch | 50.00 | 150.00 |
| 6-inch | 95.00 | 285.00 |
| 8-inch | 135.00 | 405.00 |
| 10-inch | 191.00 | 573.00 |
| 12-inch | 231.00 | 693.00 |

(i) The minimum bill for an owner occupied residential development serviced by a combined fire/ general service line shall be a multiple of the number of units served, times the minimum charge for a three-fourth (3/4) inch meter.

(j) All fire standpipes, supply pipes and automatic sprinkler pipes with detector meters, direct meters or non-metered, shall be assessed according to size of connection at the following rates each per annum for the service and inspection of the fire protection pipes and meters installed, as follows:

| | |
|---|---|
| 1½ inch pipe connection | $ 30.00 |
| 2 inch pipe connection | 30.00 |
| 3 inch pipe connection | 36.00 |
| 4 inch pipe connection | 48.00 |
| 6 inch pipe connection | 72.00 |
| 8 inch pipe connection | 120.00 |
| 10 inch pipe connection | 180.00 |
| 12 inch pipe connection | 300.00 |

When the seal of any of the valves connecting with such fire protection pipes shall be broken, it shall be forthwith resealed by the superintendent of the waterworks. All connections for fire systems must have a post indicator valve installed at the curb if ordered by the superintendent of the waterworks.

**The sanitary sewer rates and stormwater service rate shall be applied to utility billings for water meters read from and after January 1, 2006.**

The sanitary sewer rates to be charged 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 sanitary sewer rate applicable inside the City of Minneapolis is two dollars and ten cents ($2.10) per one hundred (100) cubic feet. The minimum sanitary sewer rate shall be two dollars ($2.00) per month.

(b) The sanitary sewer rate applicable outside the City of Minneapolis for all sewage flow generated is two dollars and ten cents ($2.10) per one hundred (100) cubic feet. The minimum sanitary sewer rate shall be six dollars ($ 6.00) per month. Sanitary sewer only service shall be thirteen dollars ($13.00) per month.

(c) The sanitary sewer 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 sanitary sewer 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.

**The stormwater rate, subject to the provisions in Chapter 510, of the Minneapolis Code of Ordinances, 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, and is herby set as follows:**

(a) 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.

(b) The stormwater rate imposed on Single-Family Residential Developed Properties shall be categorized into three tiers based on the estimated amount of impervious area as follows:

High – Single-Family Residential Developed Property – greater than one thousand five hundred and seventy-eight (1,578) square feet of estimated impervious area. The ESU shall be 1.25 and the stormwater rate set at eleven dollars and forty-six cents ($11.46).

Medium – Single-Family Residential Developed Property – equal to or greater than one thousand four hundred and eighty-five (1,485) square feet and less than or equal to one thousand five hundred and seventy-eight (1,578) square feet of estimated impervious area. The ESU shall be 1.00 and the stormwater rate set at nine dollars and seventeen cents ($9.17).

Low – Single-Family Residential Developed Property – less than one thousand four hundred and eighty-five (1,485) square feet of estimated impervious area. The ESU shall be .75 and the stormwater rate set at six dollars and eighty-eight cents ($6.88).

(c) 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
# of ESU X $ 9.17 = Monthly Fee

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

| Land Use | 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 | .40 |
| 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 |

**Solid waste and recycling variable rate charges associated with water meter read dates from and after January 1, 2006, the charges shall be as follows:**

(a) The base unit charge shall be twenty-two dollars and twenty-five cents ($22.25) per dwelling unit per month.

(b) The recycling reduction shall be seven dollars ($7.00) per dwelling unit per month for the units whose occupants qualify as participating in the city's recycling program.

(c) The cart disposal charge shall be two dollars ($2.00) per month for each small cart.

(d) The cart disposal charge shall be four dollars ($4.00) per month for each large cart assigned to a dwelling unit.

Adopted 12/19/05.

## 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-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; bio-retention 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 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. (2004-Or-132, § 1, 11-5-04)

**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. (2004-Or-132, § 1, 11-5-04)

**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. (2004-Or-132, § 1, 11-5-04)

**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. (2004-Or-132, § 1, 11-5-04)

**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. (2004-Or-132, § 1, 11-5-04)

**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 (3) 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 (3) 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 (3) customer classes is made based on estimated impervious area. Single-family residential developed properties will be assigned to one of three (3) single-family residential customer classes. The three (3) single-family residential customer classes are as follows:

a. Single-family residential developed property/high -- greater than one thousand five hundred seventy-eight (1,578) square feet of estimated impervious area.
b. 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.
c. Single-family residential developed property/low -- less than one thousand four hundred eighty-five (1,485) square feet of estimated impervious area.

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

TABLE INSET:

| | |
|---|---|
| High..... | 1.25 % of an ESU |
| Medium..... | 1 ESU |
| Low..... | .75 % of an 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 (1) 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. (2004-Or-132, § 1, 11-5-04)

**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. (2004-Or-132, § 1, 11-5-04)

**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. (2004-Or-132, § 1, 11-5-04)

**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. (2004-Or-132, § 1, 11-5-04)

**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. (2004-Or-132, § 1, 11-5-04)

**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**

TABLE INSET:

| LAND USE | RANGE |
|---|---|
| **Bar - Rest.- Entertainment** | **.60--.75** |
| **Car Sales Lot** | **.60--.95** |
| **Cemetery w/Monuments** | **.10--.25** |
| **Central Business District** | **.85--1.00** |
| **Common Area** | **.10--.25** |
| **Garage or Misc. Residential** | **.30--.55** |
| **Group Residence** | **.60--.75** |
| **Industrial Warehouse- Factory** | **.50--.90** |
| **Industrial Railway** | **.50--.90** |
| **Institution- School.- Church** | **.60--.95** |
| **Misc. Commercial** | **.60--.95** |
| **Mixed Commercial- Residential - Apt.** | **.60--.75** |
| **Multi-Family Apartment** | **.60--.75** |
| **Multi-Family Residential** | **.35--.50** |
| **Office** | **.60--.95** |
| **Parks & Playgrounds** | **.10--.25** |

| | |
|---|---|
| **Public Accommodations** | **.60--.95** |
| **Retail** | **.60--.95** |
| **Single Family Attached** | **.60--.75** |
| **Single Family Detached** | **ESU** |
| **Sport or Recreation Facility** | **.60--.95** |
| **Utility** | **.50--.90** |
| **Vacant Land Use** | **.10--.25** |
| **Vehicle Related Use** | **.60--.90** |

(2004-Or-132, § 1, 11-5-04; 2005-Or-102, § 1, 11-4-05)

# *Minneapolis Stormwater Utility Fact Sheet*
# *Stormwater Best Management Practices (BMPs)*

Listed below are some of the most effective stormwater BMPs.

**Recommended primary *residential* or *small* site stormwater BMPs:**

- Rain gardens (provided suitable soils are present). It is important that rain gardens drain 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 stosrmwater BMPs:**

- Wet ponds
- Dry ponds
- Green roofs
- Pervious pavement
- Infiltration areas (such as rain gardens, infiltration swales, etc)

The key to proper 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 regions 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 present is at the back of the lot and that is the high point, you are going to have a hard time. Conversely, if there is a low area in the back yard, with a little work, a significant amount of water can be directed there.

***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 the site or property.

**Notes:**

- Many sites are utilizing underground detention as a means for treating or storing stormwater. While effective, the substantial initial costs, as well as the long-term maintenance costs, can make them fairly cost-prohibitive.
- Oil grit separators (such as sump manholes, grit chambers & manufactured BMP's) do not provide significant water quality and are discouraged.
- Pavement reduction, shared parking and re-vegetation of hard surface areas are not defined as a credit BMP. However, they will reduce the impervious nature of the site, which helps to lower the fees charged to the property.
- Rain barrels are a sustainable practice that has recently gained favor. While rain barrels can provide 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, installation is neither encouraged nor discouraged for the following reasons:

    1. Water draining from a roof top is fairly clean and removal of any contaminants would require that you hold the water on the level of one barrel per 15 square 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.

# 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.



Source: Minneapolis Public Works – Engineering Services 4/16/2007

**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 | $12.21 |
| Medium | 1.00 ESU | $9.77 |
| Low | .75 ESU | $7.33 |

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



Source: Minneapolis Public Works – Engineering Services 4/16/2007

# CITY OF MINNEAPOLIS
# PUBLIC WORKS DEPARTMENT
Street Maintenance Division
## Standard Operating Procedure for Vehicle Related Spills (VRS)
**June 1, 2006**

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**)
  Steve Kennedy: 612-685-8528 (work)
  Tom Frame: 612-673-8501 (work)
  Gayle Prest: 612-673-2931 (work)
  Emergency after-hours contacts:
  Tom Frame: 612-754-0762
  Gayle Prest: 612-827-1984
- **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)
  John Wargin: 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:<br>MPLS. PCA_____<br>MN PCA_____<br>FIRE DEPT_____<br>POLICE_____<br>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?<br>PHONE NO. |
| CLEAN-UP TO DATE:<br>MATERIAL USED_____<br>LOADER USED_____<br>TRUCKS USED_____<br>PICK-UP TRUCK USED_____<br>MACHINE SWEEPER USED_____<br>LABOR: FOREMAN HOURS_____<br>SR. MAINT. MAN_____<br>JR. MAINT. MAN_____<br>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, Licenses-Env Mgmt, PSC Room 414.

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

# 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.

# *2006 Grit Chamber Maintenance*

| ID | LOCATION | DATE INSPECTED | DATE CLEANED | Sediment Removed (CY) |
|---|---|---|---|---|
| 1 | UPTON AVE N & 53RD AVE N | 4/20/2006 | 4/20/2006 | 1.5 |
| 2 | RUSSELL AVE N & 53RD AVE N | 4/21/2006 | 4/21/2006 | 0.5 |
| 3 | SHERIDAN AVE N, N OF 52ND AVE N | 5/3/2006 | 5/3/2006 | 6 |
| 4 | RUSSELL AVE N NORTH OF 52ND AVE N | 4/21/2006 | 4/21/2006 | 0.5 |
| 5 | PENN AVE N & 52ND AVE N | 4/25/2006 | 4/25/2006 | 2 |
| 6 | PENN AVE N & 52ND AVE N | 4/25/2006 | 4/25/2006 | 2 |
| 7 | OLIVER AVE N & 52ND AVE N | 4/26/2006 | 4/26/2006 | 2 |
| 7 | OLIVER AVE N & 52ND AVE N | 12/6/2006 | 12/6/2006 | 3 |
| 8 | NEWTON AVE N & SHINGLE CREEK | 4/21/2006 | 4/21/2006 | 1 |
| 9 | OLIVER AVE N & 51ST AVE N | 4/26/2006 | 4/26/2006 | 2 |
| 9 | OLIVER AVE N & 51ST AVE N | 12/7/2006 | 12/7/2006 | 3 |
| 10 | MORGAN AVE N & 51ST AVE N | 4/21/2006 | 4/21/2006 | 2 |
| 10 | MORGAN AVE N & 51ST AVE N | 12/7/2006 | 12/7/2006 | 2 |
| 11 | KNOX AVE N & 51ST AVE N | 5/31/2006 | 5/31/2006 | 4 |
| 12 | KNOX AVE N & 50TH AVE N | 6/1/2006 | 6/1/2006 | 8 |
| 13 | IRVING AVE N & 50TH AVE N | 4/27/2006 | 4/27/2006 | 2 |
| 14 | JAMES AVE N, NORTH OF 49TH AVE N | 5/3/2006 | 5/3/2006 | 0.25 |
| 14 | JAMES AVE N, NORTH OF 49TH AVE N | 12/6/2006 | 12/6/2006 | 2 |
| 15 | 21ST AVE N & 1ST ST N | 7/3/2006 | 7/3/2006 | 20 |
| 16 | XERXES AVE N & 14TH AVE N | 8/29/2006 | 9/19/2006 | 90 |
| 17 | XERXES AVE N & GLENWOOD AVE | 5/3/2006 | 5/3/2006 | 5 |
| 18 | MORGAN AVE N & CHESNUT AVE | 5/4/2006 | 5/4/2006 | 6 |
| 19 | GIRARD AVE NO & CURRIE AVE NO | 6/5/2006 | 6/6/2006 | 8 |
| 20 | BRIDAL VEIL TUNNEL OUTLET | 5/3/2006 | | |

# 2006 Grit Chamber Maintenance

| | | | | |
|---|---|---|---|---|
| 20 | BRIDAL VEIL TUNNEL OUTLET | 8/30/2006 | | |
| 21 | LAKE OF THE ISLES PKWY & LOGAN AVE | 10/27/2006 | 10/27/2006 | 14 |
| 22 | W 22ND ST & JAMES AVE S | 5/24/2006 | 5/24/2006 | 4 |
| 24 | DREW AVE S & W LAKE ST | 5/22/2006 | 5/22/2006 | 3 |
| 25 | EXCELSIOR BLVD & MARKET PL | 8/17/2006 | | |
| 26 | W LAKE ST & ALDRICH AVE S | 8/13/2006 | | |
| 27 | W 32ND ST & BRYANT AVE S | 5/30/2006 | 5/30/2006 | 3 |
| 28 | W 33RD ST & HOLMES | 5/26/2006 | 5/26/2006 | 4 |
| 29 | W 33RD ST & GIRARD AVE S | 8/18/2006 | | |
| 30 | YORK AVE S & W LAKE CALHOUN PARKWAY | 9/22/2006 | | |
| 31 | CHOWEN AVE S & W 41ST ST | 9/22/2006 | | |
| 32 | E 42ND ST & BLOOMINGTON AVE S | 5/31/2006 | 5/31/2006 | 3 |
| 32 | E 42ND ST & BLOOMINGTON AVE S | 6/6/2006 | 6/6/2006 | 6 |
| 32 | E 42ND ST & BLOOMINGTON AVE S | 8/9/2006 | | |
| 32 | E 42ND ST & BLOOMINGTON AVE S | 12/26/2006 | 12/27/2006 | 4.5 |
| 33 | E 43RD ST & PARK AVE S | 9/19/2006 | 9/20/2006 | 4 |
| 34 | W 44TH ST & LAKE HARRIET PARKWAY | 6/6/2006 | 6/7/2006 | 9 |
| 35 | E 44TH ST & OAKLAND AVE S | 6/9/2006 | 6/9/2006 | 2 |
| 36 | E 46TH ST & 31ST AVE S | 7/13/2006 | 7/13/2006 | 4 |
| 37 | 46TH AVE S & GODFREY RD | 4/22/2006 | 4/27/2006 | 2 |
| 37 | 46TH AVE S & GODFREY RD | 7/24/2006 | | |
| 38 | W 47TH ST & YORK AVE S | 5/10/2006 | 5/10/2006 | 1 |
| 39 | W 47TH ST & WASHBURN AVE S | 8/28/2006 | | |
| 40 | W 47TH ST & LAKE HARRIET PARKWAY | 10/26/2006 | 10/26/2006 | 3 |
| 41 | W 48TH ST & YORK AVE S | 5/10/2006 | 5/10/2006 | 0.5 |
| 42 | QUEEN AVE S & LAKE HARRIET PKWY | 10/31/2006 | 10/31/2006 | 18 |

# 2006 Grit Chamber Maintenance

| | | | | |
|---|---|---|---|---|
| 43 | 16TH AVE S & E MINNEHAHA PKWY | 10/16/2006 | 10/17/2006 | 5 |
| 44 | SHERIDAN AVE S & W 50TH ST | 2/1/2006 | 2/23/2006 | 226 |
| 45 | JAMES AVE S & MINNEHAHA CREEK | 11/7/2006 | 11/7/2006 | 3.5 |
| 46 | MORGAN AVE S & W 53RD ST | 6/5/2006 | 6/5/2006 | 17 |
| 46 | MORGAN AVE S & W 53RD ST | 11/8/2006 | 11/8/2006 | 12 |
| 47 | E 55TH ST & PORTLAND AVE S | 5/9/2006 | 5/9/2006 | 1.5 |
| 48 | E 56TH ST & PORTLAND AVE S | 5/9/2006 | 5/9/2006 | 3.5 |
| 49 | E 57TH ST & PORTLAND AVE S | 6/2/2006 | 6/2/2006 | 1 |
| 50 | E 58TH ST & PORTLAND AVE S | 7/27/2006 | 7/27/2006 | 4 |
| 51 | GIRARD AVE S BETWEEN W 59TH ST & W 60TH ST | 5/10/2006 | 5/10/2006 | 2 |
| 52 | E 59TH ST & 12TH AVE S | 5/15/2006 | 5/15/2006 | 2.5 |
| 52 | E 59TH ST & 12TH AVE S | 7/24/2006 | | |
| 53 | GIRARD AVE S & W 60TH ST | 8/19/2006 | | |
| 54 | GIRARD AVE S, W 60TH ST - DUPONT AVE S | 7/20/2006 | 7/20/2006 | 30 |
| 55 | GRASS LAKE TERRACE, GIRARD TO JAMES AVE S | 6/1/2006 | 6/1/2006 | 3.5 |
| 56 | GRASS LAKE SERVICE ROAD BEHIND #6035 JAMES AVE S | 8/22/2006 | | |
| 57 | GRASS LAKE SERVICE ROAD BEHIND #6077 JAMES AVE S | 8/22/2006 | | |
| 58 | GRASS LAKE SERVICE ROAD BEHIND #1416 W 61ST ST | 6/13/2006 | 6/13/2006 | 2 |
| 59 | W 61ST ST & GRASS LAKE SERVICE ROAD | 8/22/2006 | | |
| 60 | IRVING AVE S & W 61ST ST | 6/8/2006 | 6/13/2006 | 36 |
| 61 | E RIVER RD & CECIL ST | 4/17/2006 | 4/27/2006 | 8 |
| 61 | E RIVER RD & CECIL ST | 5/3/2006 | | |
| 61 | E RIVER RD & CECIL ST | 8/30/2006 | | |
| 62 | HIAWATHA PARK REFECTORY TURN-A-ROUND | 4/27/2006 | 4/27/2006 | 1.5 |
| 62 | HIAWATHA PARK REFECTORY TURN-A-ROUND | 7/28/2006 | | |
| 63 | 33RD AVE N & 1ST ST N/RAILROAD TRACKS | 5/5/2006 | 5/5/2006 | 2 |

# 2006 Grit Chamber Maintenance

| | | | | |
|---|---|---|---|---|
| 64 | 26TH AVE N & PACIFIC (N TRANSFER STATION) | 5/5/2006 | 5/5/2006 | 2 |
| 66 | MAPLE PLACE & EAST ISLAND | 5/3/2006 | | |
| 66 | MAPLE PLACE & EAST ISLAND | 8/30/2006 | | |
| 67 | DELASALLE DR & E ISLAND | 5/3/2006 | | |
| 67 | DELASALLE DR & E ISLAND | 8/30/2006 | 10/2/2006 | 3 |
| 68 | W ISLAND - 300' S OF MAPLE PLACE | 5/3/2006 | | |
| 68 | W ISLAND - 300' S OF MAPLE PLACE | 8/30/2006 | | |
| 69 | EASTMAN AVE & W ISLAND | 5/3/2006 | | |
| 69 | EASTMAN AVE & W ISLAND | 8/30/2006 | 9/28/2006 | 3 |
| 70 | ROYALSTON & 5TH AVE N | 7/14/2006 | | |
| 71 | THE MALL & E LAKE OF THE ISLES | 10/23/2006 | 10/23/2006 | 27 |
| 72 | S OF 37TH AVE NE & ST ANTHONY PKWY | 5/3/2006 | | |
| 72 | S OF 37TH AVE NE & ST ANTHONY PKWY | 8/30/2006 | | |
| 73 | 4552 KNOX AVE N (IN ALLEY BEHIND) | 7/14/2006 | 7/14/2006 | 2 |
| 74 | STEVENS AVE S 300' S OF MINNEHAHA CREEK | 8/22/2006 | | |
| 76 | MARKET PLAZA & EXCELSIOR BLVD | 10/10/2006 | 10/10/2006 | 16 |
| 76 | MARKET PLAZA & EXCELSIOR BLVD | 10/10/2006 | 10/10/2006 | 16 |
| 77 | ALLEY - 38TH TO 39TH ST & NICOLLET TO BLAISDELL AVE | 9/21/2006 | 9/21/2006 | 3 |
| 78 | SHINGLE CREEK WETLAND - W SIDE | 5/17/2006 | 5/17/2006 | 5 |
| 79 | SHINGLE CREEK WETLAND - EAST SIDE | 5/18/2006 | 5/23/2006 | 30 |
| 80 | WOODLAWN BLVD & E 50TH ST | 5/15/2006 | 5/15/2006 | 2.5 |
| 80 | WOODLAWN BLVD & E 50TH ST | 7/12/2006 | | |
| 81 | WOODLAWN BLVD & E 53RD ST | 7/3/2006 | | |
| 82 | 12TH AVE S & POWDERHORN TERRACE | 6/5/2006 | 6/5/2006 | 3 |
| 82 | 12TH AVE S & POWDERHORN TERRACE | 8/9/2006 | | |
| 83 | 13TH AVE S & POWDERHORN TERRACE | 8/9/2006 | | |

# 2006 Grit Chamber Maintenance

| | | | | |
|---|---|---|---|---|
| 84 | 3421 15TH AVE S (180' W OF CL) | 5/16/2006 | 5/16/2006 | 4.5 |
| 84 | 3421 15TH AVE S (180' W OF CL) | 6/23/2006 | | |
| 85 | 3329 14TH AVE S | 8/9/2006 | | |
| 86 | 13TH AVE S & E 35TH ST | 5/30/2006 | 5/30/2006 | 2 |
| 86 | 13TH AVE S & E 35TH ST | 7/28/2006 | | |
| 87 | 3318 10TH AVE S | 5/16/2006 | 5/16/2006 | 4.5 |
| 87 | 3318 10TH AVE S | 7/28/2006 | | |
| 88 | ACROSS THE STREET FROM 702, NO. BD. VAN WHITE BLVD. | 4/17/2006 | 4/17/2006 | 1 |
| 89 | ACROSS THE STREET FROM 706, NO. BD. VAN WHITE BLVD. | 4/17/2006 | 4/17/2006 | 1 |
| 89 | ACROSS THE STREET FROM 706, NO. BD. VAN WHITE BLVD. | 12/11/2006 | 12/11/2006 | 2 |
| 90 | 10TH AVE. NO. & ALDRICH AVE. NO. (S.W.C.) | 5/1/2006 | 5/1/2006 | 2 |
| 90 | 10TH AVE. NO. & ALDRICH AVE. NO. (S.W.C.) | 12/11/2006 | 12/11/2006 | 3 |
| 91 | SO. BD. VAN WHITE BLVD., 200' SO. OF 8TH AVE. NO. | 12/11/2006 | 12/11/2006 | 2.5 |
| 92 | ACROSS THE STREET FROM 701, SO. BD. VAN WHITE BLVD. | 5/1/2006 | 5/1/2006 | 4 |
| 92 | ACROSS THE STREET FROM 701, SO. BD. VAN WHITE BLVD. | 8/24/2006 | 8/24/2006 | 3 |
| 93 | SO. BD. VAN WHITE BLVD., 250' SO. OF 10TH AVE. NO. | 4/21/2006 | 4/21/2006 | 3 |
| 93 | SO. BD. VAN WHITE BLVD., 250' SO. OF 10TH AVE. NO. | 10/23/2006 | 10/23/2006 | 2 |
| 94 | 10TH AVE. NO. & NO. BD. VAN WHITE BLVD. (S.W.C.) | 4/21/2006 | 4/21/2006 | 4 |
| 94 | 10TH AVE. NO. & NO. BD. VAN WHITE BLVD. (S.W.C.) | 9/21/2006 | 9/21/2006 | 4 |
| 94 | 10TH AVE. NO. & NO. BD. VAN WHITE BLVD. (S.W.C.) | 12/8/2006 | 12/8/2006 | 3 |
| 95 | WEST SIDE OF ALDRICH AVE. NO. & 9TH AVE. NO. | 5/15/2006 | 5/15/2006 | 1 |
| 95 | WEST SIDE OF ALDRICH AVE. NO. & 9TH AVE. NO. | 8/16/2006 | 8/16/2006 | 3 |
| 96 | 8TH AVE. NO. & NO. BD. VAN WHITE BLVD. (N.E.C.) | 4/21/2006 | 4/21/2006 | 5 |
| 96 | 8TH AVE. NO. & NO. BD. VAN WHITE BLVD. (N.E.C.) | 8/21/2006 | 8/21/2006 | 5 |
| 97 | 29TH AVE. & LOGAN AVE. - NO. STORM WATER DET. POND (E & W) | 4/3/2006 | 4/14/2006 | 11 |
| 97 | 29TH AVE. & LOGAN AVE. - NO. STORM WATER DET. POND (E & W) | 8/14/2006 | 8/14/2006 | 6 |

# 2006 Grit Chamber Maintenance

| | | | | |
|---|---|---|---|---|
| 98 | MALMQUIST LN. & HUMBOLDT NO. | 5/24/2006 | 5/24/2006 | 2 |
| 99 | SHINGLE CREEK DR. & HUMBOLDT NO. | 5/25/2006 | 5/26/2006 | 3 |
| 100 | SO. OF 49TH AVE. NO. & HUMBOLDT NO. | 5/30/2006 | 5/30/2006 | 12 |
| 101 | NO. OF 49TH AVE. NO. & HUMBOLDT NO. | 6/16/2006 | | |
| 110 | W. CALHOUND PARKWAY 100' NO. OF RICHFIELD RD. | 8/21/2006 | 8/21/2006 | 0.5 |
| 111 | RICHFIELD RD. NEAR W. CORNER OF THE PARKING LOT | 8/21/2006 | 8/21/2006 | 0.5 |
| 112 | W. 36TH ST. 30' W. OF CALHOUN PARKWAY | 8/21/2006 | 8/21/2006 | 0.5 |
| 113 | 20' EAST OF VAN WHITE MEM. BLVD (N.B.) AND 5TH AVE N (1016 - 5TH AVE N) | 6/2/2006 | 6/2/2006 | 1 |
| 114 | DUPONT AVE. NO. & 4TH AVE. NO. | 5/1/2006 | 5/1/2006 | 3 |
| 115 | VAN WHITE MEM. BLVD (S.B.) AND 4TH AVE N | 6/2/2006 | 6/2/2006 | 2 |
| 116 | 400' NORTH (60' INTO POND) VAN WHITE MEM. BLVD (S.B.) AND 4TH AVE N | 5/10/2006 | 5/10/2006 | 0.5 |
| 118 | 200' NORTH (POND SIDE) OF VAN WHITE MEM. BLVD (S.B.) AND 10TH AVE N | 5/8/2006 | 5/15/2006 | 5 |
| 119 | 11TH AVE N AND VAN WHITE BLVD (N.B.) | 7/10/2006 | 7/10/2006 | 0.5 |
| 120 | 200' NORTH (EAST SIDE) OF VAN WHITE MEM. BLVD (S.B.) AND 11TH AVE N | 5/9/2006 | 5/9/2006 | 1 |
| 121 | 50' NORTH (EAST SIDE) OF VAN WHITE MEM. BLVD (S.B.) AND FREMONT AVE N | 5/9/2006 | 5/9/2006 | 1 |
| 123 | COLUMBUS AVE S SOUTH OF E 37TH ST REROUTE - no as-builts | 10/29/2006 | 10/29/2006 | 0.75 |
| 124 | COLUMBUS AVE S - CHICAGO AVE S ALLEY - no as-builts | 10/25/2006 | 10/25/2006 | 0.75 |
| 125 | COLUMBUS AVE S ACROSS FROM #3644 - no as-builts | 10/30/2006 | 10/30/2006 | 0.75 |
| 126 | E 37TH ST AND COLUMBUS S - no as-builts | 10/30/2006 | | |
| 127 | E 37TH ST AND COLUMBUS S - no as-builts | 10/30/2006 | 10/30/2006 | 0.5 |
| 128 | W 27TH ST AND LAKE OF THE ISLES PKWY - no as-builts | 8/17/2006 | | |
| 129 | YARD SUMPS, 26TH AND HIAWATHA | 10/1/2006 | | |
| 130 | YARD SUMPS, 26TH AND HIAWATHA | 10/1/2006 | | |
| 132 | YARD SUMPS, 26TH AND HIAWATHA | 10/1/2006 | | |
| 133 | ALLEY DRY WELL, BETWEEN HUMBOLDT/IRVING AVE S AND W 25TH ST/26TH ST, no as-builts | 8/8/2006 | 8/8/2006 | 1 |
| 134 | W 22ND ST @ E LAKE OF THE ISLES BLVD, no as-builts | 5/23/2006 | 5/23/2006 | 10 |

# 2006 Grit Chamber Maintenance

| | | | | |
|---|---|---|---|---|
| 136 | 111 22ND AVE N (ALLEY BETWEEN 1ST ST N AND 2ND ST N AT VACATED 21ST AVE N) | 7/14/2006 | | |
| 139 | EWING AVE S @ W FRANKLIN AVE - Pending as-built info | 8/23/2006 | 8/23/2006 | 3 |
| 139 | EWING AVE S @ W FRANKLIN AVE - Pending as-built info | 8/25/2006 | 8/25/2006 | 2 |
| | | | **Total Yards** | **859** |

# 2006 Outfall Inspection Report

| Outfall ID | LOCATION | DATE | Maintenance Required (Y/N) | Comments Or Repairs Needed |
|---|---|---|---|---|
| 10-010 | 53rd Ave N. | 6/5/2006 | no | |
| 10-020 | 51st Ave. N (Mississippi Ct.) | 6/27/2006 | no | sand in the corrigated pipe |
| 10-030 | 49th Ave N. | 6/5/2006 | no | |
| 10-040 | 49th Ave. N | 6/5/2006 | no | |
| 10-050 | 46th Ave N (I-94) | 6/27/2006 | no | start of a washout that may need rip rap at some point |
| 10-090A | 39th Ave N (At River ) | 6/26/2006 | no | found 18" pvc on river bank at 3930 - 1st |
| 10-090C | 37th Ave N (Sooline R.R. ) | 6/29/2006 | no | 1' of the bottom of the corrigated pipe is rusted but the rest is fine |
| 10-090D | 36th Ave N (Sooline R.R.) | 6/29/2006 | yes | the crushed end of the steel outlet needs to be cut off. The sides are pushed in but the corrigated pipe is ok. |
| 10-100 | Marshall St (31st Ave NE ) | 7/7/2006 | no | |
| 10-120A | Approx. 34th Ave N | 6/28/2006 | no | |
| 10-120B | Approx. 33rd Ave N (At River ) | 6/28/2006 | yes | the face of the outlet has some cracks on the shot crete wall |
| 10-140A | Lowry Ave NE (At River ) North | 7/7/2006 | no | |

# 2006 Outfall Inspection Report

| | | | | |
|---|---|---|---|---|
| 10-140B | Lowry Ave NE (At River ) South | 7/7/2006 | no | |
| 10-160 | 31st Ave N (Pacific St N ) | 6/28/2006 | yes | pit is full of sand, fence is down, gate is broken |
| 10-170 | 30th Ave N (Mill St Extended ) | 6/29/2006 | yes | 20' rusted out. the good 20' on the bottom has holes in the corrugated pipe. |
| 10-180 | 22nd Ave NE (Grand St NE ) | 7/7/2006 | no | resident built deck on top of the outlet-will be required to remove deck unless he can get appropriate permission to leave it up. |
| 10-200 | Marshall St NE (18th Ave NE) | 7/7/2006 | no | |
| 10-310 | Ramsey St NE (extension ) | 7/11/2006 | no | |
| 10-390 | 3rd Ave SE | 7/11/2006 | no | |
| 10-465 | West River Pkwy @ RR Bridge | 11/2/2006 | yes | outfall has eroded the bank. we need to extend the pipe to reach the shore of the river, and then backfill. |
| 10-485 | West River Road 100' S of Washington Ave | 7/7/2006 | no | |
| 10-490 | West River Road @ 4th St S | 7/7/2006 | no | |
| 10-550 | West River Road @ E Franklin Av | 7/7/2006 | no | |
| 10-560A | E River Rd @ I-94 (S of bridge) | 7/11/2006 | no | |
| 40-040 | Upton Ave N (N of T.H. ) | 6/5/2006 | no | |

# 2006 Outfall Inspection Report

| | | | | |
|---|---|---|---|---|
| 53-160 | Lake of the Isles Pkwy @ West 27th St | 6/30/2006 | yes | replace 1 or 2 of the 12" pipe |
| 54-040 | E. Calhoun Pkwy at 33rd St. W | 6/29/2006 | yes | cave-in by the outlet |
| 54-050 | E. Calhoun Pkwy at 36th St W. | 6/29/2006 | no | |
| 54-060 | W. Calhoun Pkwy at Sheridan Av S. | 6/29/2006 | no | |
| 57-140 | W. Harriet Pwky @ approx. 500' S W 42nd St | 7/11/2006 | no | |
| 57-150 | W. Harriet Pwky @ W 42nd St | 7/11/2006 | no | |
| 57-160 | Lake Harriet Pkwy approx. 50' N of W 42nd St | 7/11/2006 | no | |
| 70-030 | Washburn Av S @ N Bank of Creek | 7/11/2006 | no | |
| 70-035 | Washburn Av S @ S Bank of Creek | 7/11/2006 | no | |
| 70-045 | W 54th St 50' W of Upton Av S | 7/11/2006 | no | |
| 70-050 | Upton Av S - N Bank of Creek | 7/11/2006 | no | |
| 70-055 | W 54th St 250' E of Upton Av S | 7/11/2006 | no | |
| 70-060 | Forest Dale Rd 250' E of Upton Av S | 7/11/2006 | no | |

| | | | | |
|---|---|---|---|---|
| 70-065 | Forest Dale Rd 750' E of Upton Av S | 7/11/2006 | no | |
| 70-070 | Forest Dale Rd @ Sheridan Av S (extended ) | 7/11/2006 | no | |
| 70-165 | W 48th St @ Humboldt Av S | 7/24/2006 | no | |
| 70-170 | W 49th St @ W M'haha Pkwy | 7/24/2006 | no | |
| 70-190 | Humboldt Av S @ W M ' haha Pkwy ( west bank) | 8/21/2006 | yes | pvc and concrete outfall broke off, replace & repair |
| 70-370 | E M ' haha Pkwy at Chicago Av S ( n bank) | 8/22/2006 | yes | pipe dropping, bank needs restoration 21" pipe |
| 70-380 | E M' haha Pkwy at 11th Av S ( s bank) | 8/24/2006 | yes | replace section of pipe and restore bank 15" pipe |
| 70-385 | E M ' haha Pkwy 150 ' W of 11th Av S (n bank ) | 2/7/2006 | no | excellent shape |
| 70-390 | E M' haha Pkwy at 12th Av S ( s bank ) | 6/23/2006 | yes | bottom missing in places which poses a cave in along the line |
| 70-400 | E 50th St at 13th Av S ( s bank) | 8/21/2006 | yes | replace section of 12" concrete pipe and restore bank |
| 70-405 | E 50th St at Bloomington Av S (south bank ) | 8/22/2006 | yes | bank eroded 15" pipe |
| 70-480 | 31st Av S @ E 46th St (n bank ) | 8/21/2006 | yes | settled pipe 24" needs to be repalced on south bank |
| 70-500 | 32nd Av S 250' N of E M' haha Pkwy (s bank ) | 8/22/2006 | yes | bottom out, need to replace bottom and resotre bank 24" pipe |

# 2006 Outfall Inspection Report

| | | | | |
|---|---|---|---|---|
| 70-505 | E 47th St 200' W of 32nd Av S | 8/21/2006 | yes | outlet settled, repair and restore bank 15" pipe |
| 70-525 | 35th Av S @ E M' haha Pkwy (s bank) | 5/30/2006 | no | |
| 70-530 | 35th Av S @ e 47th St | 5/30/2006 | no | |
| 70-535 | 35th Av S 100' S of Crosby Av S | 6/27/2006 | no | |
| 70-540 | 35th Av S @ E 47th St ( s bank) | 6/27/2006 | no | |
| 70-545 | 36th Av S @ Crosby Av ( n bank) | 6/27/2006 | no | |
| 70-550 | 37th Av S 100' N of E 47th St (s bank) | 6/27/2006 | no | |
| 70-555 | 37th Av S Crosby Av S | 6/27/2006 | no | |
| 70-560 | E 47th St @ 38th Av S (s bank ) | 7/11/2006 | no | flow in creek is low and there is lots of debris in the line. |
| 70-565 | E M' haha Pkwy @ 39th Av S ( s bank) | 7/11/2006 | no | |
| 70-570 | 39th Av S 250' N of E 49th St (s bank) | 7/11/2006 | no | lots of ducks in area |
| 70-575 | E 49th St @ 30th Av S | 7/11/2006 | no | |
| 70-580 | Godfrey Rd @ 46th Av S (extended) | 8/22/2006 | yes | restore bank, rip rap, 54" pipe |

# 2006 Outfall Inspection Report

| | | | | |
|---|---|---|---|---|
| 72-010 | Nokomis Pkwy at Parking Lot on North Shore | 7/17/2006 | no | |
| 72-020 | E Nokomis Pkwy approx. 100' N of 50th St | 7/18/2006 | no | |
| 72-030 | E Nokomis Pkwy approx 200 N of 52nd St E | 7/18/2006 | no | |
| 72-040 | E Nokomis Pkwy @ E 53rd St | 7/18/2006 | no | |
| 84-010 | Hwy 62 between 28th and 34th Ave S | 2/13/2006 | no | no repairs needed and may be a mindot jurisdictional issue |
| 84-010 | Hwy 62 between 28th and 34th Ave S | 8/22/2006 | yes | outlets burried, 12" line needs to be dug up, place fabric, and rock |

# City of Minneapolis
# 2007 Stormwater Education and Outreach Program Budget

| | |
|---|---|
| Mississippi Watershed Management Organization (MWMO) | |
| Conduct Multicultural Study: Customize worldview and key behavior outreach effort. Develop strategic plan for outreach program to Hmong community and framework for design for other communities. | $3,300 |
| Implement Multicultural Study: Develop, produce and distribute multicultural video-based programming for Limited English Proficiency communities. | $10,000 |
| Minneapolis Park & Recreation Board (MPRB) Outreach Activities | |
| Stormwater education at two to three community/neighborhood events per week. Active learning stormwater education programs at recreation centers and along Mississippi River. Provide touring multilingual electronic kiosks. Develop and install interpretive panels at key stormwater sites. Stormwater programs and projects for Earth Day event. | $49,400 |
| Minneapolis Park & Recreation Board (MPRB) Monitoring Activities | |
| NPDES Permit and BMP Monitoring | $158,000 |
| CUE Minneapolis/Metro Blooms Program | |
| Rain garden educational workshops. Affordable on-site consultation for rain gardens. Utility bill education inserts. Correct boulevard garden design and local event sponsorship. | $41,500 |
| Rain barrel program administration and coordination. Development of website, workshop/seminar content, educational packet materials. Mailings/postage. Program evaluation. | $21,000 |
| Green Institute | |
| Manage the local distribution and sales of 2,000 rain barrels to Minneapolis residents. Develop internet point-of-sales page. | $21,000 |
| University of Minnesota St. Anthony Falls Lab | |
| Rain barrel USEPA Quality Assurance monitoring and reporting | $12,500 |
| Friends of the Mississippi River (FMR) | |
| Stormwater education, student storm drain stenciling, door hanger distribution. | $3,500 |
| Public Works Staff & Administration | |
| Stormwater Education and Outreach Program Development, includes US/EPA rain barrel distribution grand administration | $86,000 |
| **Total** | **$406,200** |

Source: Minneapolis Public Works – Engineering Services

## NPDES Stormwater Permit
## Monitoring Budget

| | | QUANTITY | UNIT COST | FRINGE | EXTENSION | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|
| *labor* | | | | | | | | | | |
| water quality specialists | | 1,500 | $25.45 | $7.64 | $49,635.00 | | | | | |
| environmental intern | | 250 | $12.21 | $1.85 | $3,515.00 | | | | | |
| environmental coordinator | | 400 | $30.53 | $9.16 | $15,876.00 | | | | | |
| environmental manager | | 25 | $45.81 | $13.74 | $1,488.75 | | | | | |
| | *subtotal* | | | | | *$70,514.75* | $72,277.62 | $74,084.56 | $75,936.67 | $77,835.09 |
| *equipment and supplies* | | | | | | $25,500.00 | $26,137.50 | $26,790.94 | $27,460.71 | $28,147.23 |
| *lab analyses* | | | | | | $15,500.00 | $15,887.50 | $16,284.69 | $16,691.80 | $17,109.10 |
| | | | | **TOTAL** | | **$111,514.8** | **$114,302.62** | **$117,160.18** | **$120,089.19** | **$123,091.4** |
| *Monitoring Manual Update (2008 only)* | | | | | | | | | | |
| water quality specialist | | 80 | $25.45 | $7.64 | $2,647.20 | | | | | |
| environmental coordinator | | 15 | $30.53 | $9.16 | $595.35 | | | | | |
| | | | | **TOTAL** | | | **$3,242.55** | | | |
| | **STORMWATER MONITORING PROGRAM SUBTOTAL** | | | | | **$111,514.8** | **$117,545.17** | **$117,160.18** | **$120,089.19** | **$123,091.4** |
| | Program Contingency | | | 10% | | $11,151.48 | $11,754.52 | $11,716.02 | $12,008.92 | $12,309.14 |
| | **STORMWATER MONITORING PROGRAM TOTAL** | | | | | **$122,666.23** | **$129,299.69** | **$128,876.20** | **$132,098.11** | **$135,400.6** |
| | | **MPRB** | | **25%** | | **$30,666.56** | **$32,324.92** | **$32,219.05** | **$33,024.53** | **$33,850.14** |
| | | **MPLS** | | **75%** | | **$91,999.67** | **$96,974.76** | **$96,657.15** | **$99,073.58** | **$101,550.42** |

Appendix A39
Source: Minneapolis Park & Recreation Board

## Environmental Services NPDES Expenditures (2002 – 2011)

| 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 | | 4.5 | | $513,986.73 | | $131,662.51 | | $645,649.24 |
| 2006 | | 4.5 | | $520,498.00 | | $147,081.87 | | $667,579.87 |
| 2007 | | 4.5 | | $549,111.00 | | $229,087.00 | | $778,198.00 |
| 2008 | | 4.5 | | $560,093.22 | | $112,018.64 | | $672,111.86 |
| 2009 | | 4.5 | | $571,295.08 | | $134,422.37 | | $705,717.46 |
| 2010 | | 4.5 | | $582,720.99 | | $161,306.85 | | $744,027.83 |
| 2011 | | 4.5 | | $594,375.41 | | $193,568.22 | | $787,943.62 |

- 2002, 2003, 2004, 2005 & 2006 are actual expenditures
- 2002, 2003, 2004, 2005 & 2006 are actual staff levels working on NPDES programs
- 2007 wage and fringe is a budgetary allocation
- 2007 staffing is current staff level working on NPDES programs at start of year
- 2008, 2009, 2010 & 2011 wages assume 2% rate increase
- 2008, 2009, 2010 & 2011 fringe assumes 20% of wage
- 2008, 2009, 2010 & 2011 staffing assumes no changes
- Costs include: labor, administrative and fringes
- Costs not included: contractual services, operating costs, equipment


Source: Minneapolis Regulatory Services

# Street Maintenance 2006 Costs and 5-Yr Budget

(NPDES activities: Roadways and Illicit Discharges)

| Code | Activity | 2006 Actual | 2007 Budget | 2008 Budget | 2009 Budget | 2010 Budget | 2011 Budget |
|---|---|---|---|---|---|---|---|
| C05 | Spring Clean up | 1,076,193 | 1,125,018 | 1,181,269 | 1,204,895 | 1,228,993 | 1,253,572 |
| C10 | Summer Sweeping | 1,050,214 | 1,097,861 | 1,152,754 | 1,175,809 | 1,199,325 | 1,223,312 |
| C15 | Fall Clean up | 1,215,295 | 1,270,431 | 1,333,953 | 1,360,632 | 1,387,845 | 1,415,602 |
| C20 | Storm Water Activity | 215,407 | 225,180 | 236,439 | 241,168 | 245,991 | 250,911 |
| C25 | Sweep Loop & Bus Dist | 306,872 | 320,794 | 336,834 | 343,571 | 350,442 | 357,451 |
| C45 | Misc. Street Sweep | 38,832 | 40,593 | 42,623 | 43,476 | 44,345 | 45,232 |
| C55 | Clean Paved Cntr Islnd | 36,874 | 38,547 | 40,474 | 41,284 | 42,109 | 42,951 |
| K45 | WFU- Sweeping | 342,303 | 357,833 | 375,725 | 383,239 | 390,904 | 398,722 |
| | **Subtotal** | 4,281,991 | 4,476,258 | 4,700,071 | 4,794,072 | 4,889,954 | 4,987,753 |
| D05 | Mach. Sweep Alleys | 280,169 | 292,880 | 307,524 | 313,675 | 319,948 | 326,347 |
| | **Subtotal** | 280,169 | 292,880 | 307,524 | 313,675 | 319,948 | 326,347 |
| I05 | Clean CB's & Drains | 87,422 | 91,388 | 95,958 | 97,877 | 99,834 | 101,831 |
| I25 | Flood Control | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Subtotal** | 87,422 | 91,388 | 95,958 | 97,877 | 99,834 | 101,831 |
| J09 | Special Events | 42,996 | 44,946 | 47,194 | 48,137 | 49,100 | 50,082 |
| J10 | Misc. (storms) | 10,751 | 11,238 | 11,800 | 12,036 | 12,277 | 12,523 |
| J15 | Waste Disposal | 394,002 | 411,877 | 432,471 | 441,121 | 449,943 | 458,942 |
| J20 | Dump Maint. | 157,078 | 164,204 | 172,414 | 175,863 | 179,380 | 182,967 |
| A01 | Supervision | 84,698 | 88,541 | 92,968 | 94,827 | 96,724 | 98,658 |
| A09 | Work Comp Claims | 124,404 | 130,048 | 136,550 | 139,281 | 142,067 | 144,908 |
| A08 | HVSL (JV from Admin.) | 331,344 | 346,377 | 363,695 | 370,969 | 378,389 | 385,956 |
| A30 | Misc. Expense | 199,707 | 208,767 | 219,206 | 223,590 | 228,061 | 232,623 |
| | Other Tasks | 506,507 | 529,486 | 555,961 | 567,080 | 578,422 | 589,990 |
| | **Subtotal** | 1,851,486 | 1,935,485 | 2,032,259 | 2,072,904 | 2,114,362 | 2,156,649 |
| | **TOTAL** | **6,501,067** | **6,796,011** | **7,135,812** | **7,278,528** | **7,424,098** | **7,572,580** |
| | Percent change from prev. year | 10% | 5% | 5% | 2% | 2% | 2% |



Source: Minneapolis Public Works - Street Maintenance

# 2006 NPDES Related Cost and 5 year Budget
## Storm Drains

| Storm Drain Operation and Control | (ACTUAL) 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|
| **Maintenance** | | | | | | |
| CIPP Lining Storm | $ 25,684 | $ 35,000 | $ 36,050 | $ 37,132 | $ 38,245 | $ 39,393 |
| Storm Drain Cleaning | $ 513,781 | $ 725,000 | $ 746,750 | $ 769,153 | $ 792,227 | $ 815,994 |
| Storm MSA | $ 178,056 | $ 180,000 | $ 185,400 | $ 190,962 | $ 196,691 | $ 202,592 |
| Storm CSA | $ 142,290 | $ 140,000 | $ 144,200 | 148,526 | $ 152,982 | $ 157,571 |
| Storm STH | $ 23,792 | $ 25,000 | $ 25,750 | $ 26,523 | $ 27,318 | $ 28,138 |
| Minor Repair | $ 166,497 | $ 185,000 | $ 190,550 | $ 196,267 | $ 202,154 | $ 208,219 |
| Major Repair/ Emergencies | $ 3,730 | $ 400,000 | $ 412,000 | $ 424,360 | $ 437,091 | $ 450,204 |
| Special Jobs | $ 190,984 | 200,000 | 206,000 | 212,180 | 218,545 | 225,102 |
| Park Board Storm | $ 50,437 | $ 75,000 | $ 77,250 | $ 79,567 | $ 81,955 | $ 84,413 |
| **Capitol Improvements** | **$** 3,173,780 | **$** 6,700,000 | $ 6,700,000 | $ 5,500,000 | $ 7,000,000 | **$** 7,500,000 |
| **SUBTOTAL** | **$ 4,469,301** | **$ 8,665,000** | **$ 8,723,950** | **$ 7,584,670** | **$ 9,147,208** | **$ 9,711,626** |
| **Structural Controls Maintenance and Operation** | | | | | | |
| **Maintenance** | | | | | | |
| Grit Chambers | $ 182,870 | $ 250,000 | $ 257,500 | $ 265,225 | $ 273,182 | $ 281,377 |
| Outfalls | $ 74,603 | $ 95,000 | $ 97,850 | $ 100,786 | $ 103,809 | $ 106,924 |
| Pump Stations | $ 123,624 | $ 175,000 | $ 180,250 | $ 185,658 | $ 191,227 | $ 196,964 |
| Holding Ponds | $ 165,100 | $ 210,000 | $ 216,300 | $ 222,789 | $ 229,473 | $ 236,357 |
| **Capitol Improvements** | **$** 2,969,349 | **$** 500,000 | $ 250,000 | $ 250,000 | $ 250,000 | **$** 200,000 |
| **SUBTOTAL** | **$ 3,515,546** | **$ 1,230,000** | **$ 1,001,900** | **$ 1,024,458** | **$ 1,047,691** | **$ 1,021,622** |
| **Storm Drain Dedicated Overhead** | | | | | | |
| **Maintenance** | | | | | | |
| Admin | $ 302,723 | $ 374,000 | $ 385,220 | $ 396,776 | $ 408,679 | $ 420,940 |
| Yard / Shop | $ 99,554 | $ 135,000 | $ 139,050 | $ 143,221 | $ 147,518 | $ 151,943 |
| **Capitol Improvement** | | $ | $ | $ | $ | $ |
| Admin | $ 430,186 | 455,000 | 463,500 | 477,405 | 491,727 | 506,478 |
| Yard / Shop | $ 323,717 | 350,000 | 360,555 | 371,315 | 382,454 | 393,928 |
| **SUBTOTAL** | $ **1,156,180** | $ **1,314,000** | $ **1,348,325** | **$ 1,388,717** | **$ 1,430,378** | **$ 1,473,289** |
| **TOTAL MAINTENANCE** | **2,243,995** | **3,204,000** | **3,300,120** | **3,399,125** | **3,501,096** | **3,606,131** |
| **TOTAL CAPITOL IMPR** | **6,897,032** | **8,005,000** | **7,774,055** | **6,598,720** | **8,124,181** | **8,600,406** |
| **TOTAL** $ | **9,141,027** | **11,209,000** | **11,074,175** | **9,997,845** | **11,625,277** | **12,206,537** |

Appendix A42
Source: Minneapolis Public Works - Field Services

# City of Minneapolis
# Engineering Services 2006 NPDES Costs

| | | 2006 Actual |
|---|---|---|
| New Developments and Construction | | |
| | SITE PLAN REVIEW | $197,479 |
| | EROSION CONTROL | 71,628 |
| | STORM WATER MGMT PLAN & ORD | 57,199 |
| Coordination with Other Government Entities | | |
| | BASSETT CREEK WMO | 45,197 |
| | SHINGLE CREEK WMO | 32,870 |
| | MINNEHAHA CREEK WATERSHED DISTRICT | 26,959 |
| | MIDDLE MISSISSIPPI WMO | 956 |
| Overall Program Administration and Reporting | | |
| | MINNEAPOLIS WATER PLAN | 183,171 |
| | WATER QUALITY/STORMWATER EDUCATION | 139,630 |
| | STORMWATER PERMIT MISC PERMITS | 46,732 |
| | MISC CSO | 11,907 |
| | RAINGAUGE MONITORING | 10,040 |
| | US EPA | 3,000 |
| | OTHER | 2,557 |
| | XP-SWMM STORM WATER MODELING | 1,718 |
| | STORMWATER UTILITY FEE STUDY | 1,029 |
| | **Total** | **$832,072** |

Source: Minneapolis Public Works – Engineering Services

# City of Minneapolis
# Flood Mitigation Program 2006 Costs Six-Year Budget

| | 2006 Expenditures | 2007 Appropriation | 2008 Proposed | 2009 Proposed | 2010 Proposed | 2011 Proposed | 2012 Proposed |
|---|---|---|---|---|---|---|---|
| Flood Area 1 - 42nd Av. N. and Russell Av. N. | $2,900,000 | | | | | | |
| Flood Area 21 -- Bloomington Pond | | | | | | | |
| city funding | | | | $970,000 | | $2,450,000 | |
| other funding: Minnehaha Creek Watershed District | | | | $3,870,000 | | | |
| Flood Area 22 -- Sibley Field | | | | | | | |
| city funding | | | | $500,000 | $508,000 | | |
| other funding: USEPA | | | | $1,190,000 | | | |
| other funding: Minnehaha Creek Watershed District | | | | $870,000 | $2,150,000 | | |
| Flood Area 29/30 - W 52nd St & Chowen Av S to Lake Harriet | | | | | | | |
| city funding | | | | | | | $1,420,000 |
| other funding: Minnehaha Creek Watershed District | | | | | | | $7,960,000 |
| Lake Hiawatha Blue Water Partnership Flood Control Project | | $2,060,000 | $390,000 | | | | |
| I-35W Storm Tunnel Reconstruction | | | | | | | |
| city funding | | | | | | | $1,035,000 |
| other funding: MnDOT | | | | | | | X |

Source: Minneapolis Public Works – Engineering Services

*Activities & Responsible Departments, by Section of Report*

| | |
|---|---|
| Structural Controls Maintenance and Operation | *Responsible department:*<br>Public Works Field Services, Sewer Maintenance |
| | *Activities:*<br>▪ Inspect controls (grit chambers, ponds, pump stations, other controls) at least 2 times a year.<br>▪ Adjust frequency of inspections after 2 years as indicated to prevent pollutants being conveyed to the receiving water.<br>▪ Inspect 20% of outfalls on a rotating basis.<br>▪ Perform maintenance and repairs as needed, or provide a schedule for work required.<br>▪ Document inspection results, date, antecedent weather conditions, sediment storage and capacity remaining |
| Storm Sewer System Operation and Quality Control | *Responsible department:*<br>Public Works Field Services, Sewer Maintenance |
| | *Activities:*<br>▪ Maintain all facilities or systems in good working order and operate as efficiently as possible<br>▪ Provide adequate operating staff to insure compliance with the conditions of this permit |
| Disposal of Removed Substances from Structural Controls | *Responsible department:*<br>Public Works Field Services, Sewer Maintenance |
| | *Activities:*<br>▪ Dispose of removed substances in a manner that will prevent pollution and comply with applicable regulations<br>▪ Document quantity of removed substances and categorize by structural control source, type of substance, and season |
| New Developments and Construction | *Responsible department:*<br>Regulatory Services, Environmental Management<br>Public Works, Engineering Services |
| | *Activities:*<br>▪ Use a planning process (site plan review) to regulate construction, and require erosion control and stormwater management |
| Roadways | *Responsible department:*<br>Public Works Field Services, Street Maintenance |
| | *Activities:*<br>▪ Sweep at least twice a year<br>▪ Document frequency, methods, quantity of material picked up (categorize by season and/or material), disposal of materials.<br>▪ Use techniques or practices to minimize runoff of deicing materials from application and handling activities.<br>▪ Document quantity of materials used each year.<br>▪ Minimize runoff of deicing materials from storage – document location and condition of all storage facilities, planned improvements. |
| Flood Control | *Responsible department:*<br>Public Works, Engineering Services |
| | *Activities:*<br>▪ Design flood control projects to minimize the impacts on the water quality of the receiving water.<br>▪ When planning repairs, improvements, or changes for flood control devices; evaluate the feasibility of retrofitting the existing devices to provide additional pollutant removal from stormwater discharges. |
| Pesticides and Fertilizers | *Responsible department:*<br>Minneapolis Park and Recreation Board |
| | *Activities:*<br>▪ Implement a city wide education program regarding the proper application of pesticides and fertilizers.<br>▪ Conduct a pilot project to investigate the use of pesticides and fertilizers on City facilities. |
| Illicit Discharges and Improper Disposal to Storm Sewer System | *Responsible department:*<br>Regulatory Services, Environmental Management<br>Public Works Field Services, Street Maintenance<br>Public Works Field Services, Sewer Maintenance |
| | *Activities:*<br>▪ Provide appropriate control measures for non-stormwater discharges<br>▪ Conduct field screening annually in 20% of the drainage areas.<br>▪ Prohibit disposal of motor vehicle fluids & household chemical wastes<br>▪ Report number of spills and unauthorized discharges that occurred and the response to the spills.<br>▪ Educate staff regarding the duty to notify the Department of Public Safety Duty Officer.<br>▪ Adopt notification protocol for response and containment of materials |
| Storm Sewer Design for New Construction | *Responsible department:*<br>Public Works Engineering Services |
| | *Activities:*<br>▪ Design & construct new storm drain and BMPs to capture runoff and pollutants |
| Public Education | *Responsible department:*<br>Minneapolis Public Works |
| | *Activities:*<br>▪ Conduct a public education program to promote, publicize, and facilitate the proper management of stormwater discharges. |
| Public Participation Process | *Responsible department:*<br>Public Works Engineering Services |
| | *Activities:*<br>▪ Adopt a process to allow for public input into the development of priorities and activities necessary to maintain compliance with this permit.<br>▪ Conduct a public hearing or other meeting where the opportunities for public testimony is available prior to annual report submittal & notify all governmental entities with jurisdiction over activities related to stormwater management in the area.<br>▪ Include a formal resolution from the City Council adopting the report with a summary of the public input received and the City's response |
| Coordination with Other Governmental Entities | *Responsible department:*<br>Public Works Engineering Services<br>Planning Department |
| | *Activities:*<br>• Submit an annual report by June 1of each year describing how the different governmental entities are cooperating and coordinating efforts in managing stormwater related activities in the drainage area including goals for each cooperative effort, where and how the activity will be performed, & schedule for implementation. |
| Stormwater Monitoring | *Responsible department:*<br>Minneapolis Park and Recreation Board |
| | *Activities:*<br>▪ Conduct runoff monitoring.<br>▪ Provide analysis of data collected. |

# Clean Waters = Be Part of the Solution


## OPEN HOUSES

**6 - 8 P.M.**

**Monday, July 10th**
**Webber Park 4400 Dupont Ave N**

**Tuesday, July 11th**
**Minneapolis Park & Recreation Board Headquarters**
**2117 West River Road (north of Broadway)**

**Thursday, July 13th**
**Nokomis Rec Center Gym**
**2401 E Minnehaha Parkway**

- **You're invited to attend any one of our Open Houses.**
- **Learn how we are managing our city's beloved waters - our river, lakes, streams and wetlands.**
- **We'll have interesting displays and educational materials, including information about what you can do on your own property.**
- **Drop in anytime between 6 - 8 P.M. for a chat! We'd like to hear the concerns you have about our water resources.**

If you have any questions, contact:
Bo Spurrier, Minneapolis Public Works,
612-673-2455

MINNEAPOLIS, MINNESOTA