APPENDIX A
PROVINCIAL WATER QUALITY DATA

Table 1 - Summary statistics for major water quality parameters measured in the Assiniboine River at the Brandon 18th Street Bridge from 1992 to 2002. Data provided by Manitoba Conservation, Water Quality Management Section (Manitoba Conservation 2002).

	Units	Mean	Median	n	SE	Minimum	Maximum
Temperature	°C	8.6	7.3	112	0.8	0.0	24.0
pH		8.22	8.26	130	0.02	7.76	8.71
Field pH		8.20	8.20	85	0.03	7.70	8.80
Dissolved oxygen	mg/L	8.64	8.35	128	0.18	4.40	14.90
BOD		2	2	43	0	1	9
Fecal coliforms	CFU/100 mL	20	5	124	4	5	240
Chlorophyll *a*	mg/L	7	4	43	1	1	27
Nitrogen Measurements							
Ammonia	mg/L	0.050	0.040	130	0.004	0.003	0.310
Nitrate/Nitrite	mg/L	0.196	0.150	130	0.020	0.005	1.500
Total Kjeldhal nitrogen	mg/L	1.0	1.0	130	0.1	0.1	6.3
Total nitrogen	mg/L	1.238	1.155	130	0.058	0.420	6.570
Dissolved inorganic nitrogen	mg/L	0.246	0.201	130	0.023	0.010	1.810
Organic nitrogen	mg/L	0.991	0.937	130	0.048	0.066	6.080
Phosphorus Measurements							
Total phosphorus	mg/L	0.155	0.126	130	0.007	0.045	0.649
Particulate phosphorus	mg/L	0.065	0.048	130	0.005	0.001	0.421
Dissolved phosphorus	mg/L	0.091	0.078	130	0.004	0.019	0.393
Total organic carbon	mg/L	11	11	130	0	3	20
Total suspended solids	mg/L	52	29	130	5	2	340
Turbidity	NTU	32	19	130	3	3	190
True color	TCU	22	20	130	1	3	100
Total alkalinity	mg/L $CaCO_3$	258	267	130	4	128	376
Conductivity	µS/cm	969	977	130	16	403	1430

Table 2 - Summary statistics for major water quality parameters measured in the Assiniboine River at PR 340 upstream of Treesbank from 1992 to 2002. Data provided by Manitoba Conservation, Water Quality Management Section (Manitoba Conservation 2002).

	Units	Mean	Median	n	SE	Minimum	Maximum
Temperature	°C	7.63	3.00	113	0.78	0.00	24.00
pH		8.21	8.24	130	0.02	7.75	8.76
Field pH		8.21	8.20	113	0.03	7.70	9.55
Dissolved oxygen	mg/L	8.85	8.70	127	0.22	2.30	15.6
BOD		2	2	42	0	1	7
Fecal coliforms	CFU/100 mL	105	20	124	43	5	4520
Chlorophyll *a*	mg/L	8	4	43	2	1	53
Nitrogen Measurements							
Ammonia	mg/L	0.143	0.062	130	0.020	0.003	2.010
Nitrate/Nitrite	mg/L	0.363	0.320	130	0.031	0.005	2.140
Total Kjeldhal nitrogen	mg/L	1.2	1.1	130	0.1	0.2	8.0
Total nitrogen	mg/L	1.560	1.415	130	0.086	0.580	8.860
Dissolved inorganic nitrogen	mg/L	0.506	0.405	130	0.043	0.015	2.52
Organic nitrogen	mg/L	1.063	0.963	130	0.066	0.080	7.65
Phosphorus Measurements							
Total phosphorus	mg/L	0.185	0.163	130	0.008	0.043	0.683
Particulate phosphorus	mg/L	0.070	0.049	130	0.005	0.011	0.329
Dissolved phosphorus	mg/L	0.115	0.103	130	0.006	0.005	0.403
Total organic carbon	mg/L	12	11	130	0	3	21
Total suspended solids	mg/L	52	25	130	6	3	450
Turbidity	NTU	32	16	130	4	2	280
True color	TCU	25	20	130	1	5	100
Total alkalinity	mg/L $CaCO_3$	254	262	130	4	130	349
Conductivity	µS/cm	953	975	130	17	406	1480

Table 3 - Summary statistics for major water quality parameters measured in the Assiniboine River at the Poratge la Prairie Reservoir from 1992 to 2002. Data provided by Manitoba Conservation, Water Quality Management Section (Manitoba Conservation 2002).

	Units	Mean	Median	n	SE	Minimum	Maximum
Temperature	°C	8.83	7.00	113	0.84	0.00	25.00
pH		8.22	8.30	129	0.03	7.66	8.70
Field pH		8.19	8.25	112	0.03	7.65	8.80
Dissolved oxygen	mg/L	9.57	9.20	125	0.18	4.00	14.80
BOD		2	2	43	0	1	8
Fecal coliforms	CFU/100 mL	32	10	122	5	5	370
Chlorophyll *a*	mg/L	13	6	43	3	1	98
Nitrogen Measurements							
Ammonia	mg/L	0.096	0.050	129	0.012	0.003	0.920
Nitrate/Nitrite	mg/L	0.295	0.210	129	0.036	0.005	3.200
Total Kjeldhal nitrogen	mg/L	1.1	1.1	129	0.0	0.1	4.3
Total nitrogen	mg/L	1.447	1.325	122	0.062	0.405	5.000
Dissolved inorganic nitrogen	mg/L	0.388	0.236	122	0.045	0.008	3.620
Organic nitrogen	mg/L	1.059	1.007	122	0.045	0.060	4.290
Phosphorus Measurements							
Total phosphorus	mg/L	0.218	0.170	129	0.025	0.044	3.010
Particulate phosphorus	mg/L	0.133	0.081	128	0.025	0.020	2.992
Dissolved phosphorus	mg/L	0.085	0.075	128	0.005	0.005	0.380
Total organic carbon	mg/L	11	11	129	0	3	22
Total suspended solids	mg/L	98	44	129	15	3	1100
Turbidity	NTU	54	27	129	7	6	480
True color	TCU	26	20	129	1	3	100
Total alkalinity	mg/L $CaCO_3$	267	275	129	4	126	372
Conductivity	µS/cm	923	939	129	16	417	1390