Appendix D

Wastewater Model Appendices

North Grenville Master Plan - Sanitary Design Sheet
Bridge Street SPS - Short-Term

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow (1) L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
Bridge Street SPS	797	3.29	9.10	4.62	1.50	2.25	30.76	8.61	165.76

(1) Includes flow contibutions of 10.8L/s from proposed Eastern Ontario Correctional Center (EOCC) (Kemptville Correctional Centre Funtional Servicing Analysis, Stantec, 2021)

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
Bridge Street SPS - Mid-Term

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow [1] L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
Bridge Street SPS	1804	3.10	19.39	5.72	1.50	2.78	45.28	12.68	180.65

(1) Includes flow contibutions of 10.8L/s from proposed Eastern Ontario Correctional Center (EOCC) (Kemptville Correctional Centre Funtional Servicing Analysis, Stantec, 2021)

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
Bridge Street SPS - Long-Term

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow (1) L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
Bridge Street SPS	3310	2.92	33.61	7.70	1.50	3.74	61.84	17.32	200.47

(1) Includes flow contibutions of 10.8L/s from proposed Eastern Ontario Correctional Center (EOCC) (Kemptville Correctional Centre Funtional Servicing Analysis, Stantec, 2021)

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
Bridge Street SPS - Build-Out

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow [1] L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
Bridge Street SPS	3685	2.89	37.00	7.70	1.50	3.74	66.54	18.63	205.18

(1) Includes flow contibutions of 10.8L/s from proposed Eastern Ontario Correctional Center (EOCC) (Kemptville Correctional Centre Funtional Servicing Analysis, Stantec, 2021)

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
Tempo SPS - Short-Term

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
Tempo SPS	96	3.60	1.20	2.10	1.50	1.02	2.10	0.59	12.81

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
Tempo SPS - Mid-Term

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
Tempo SPS	432	3.40	5.11	8.50	1.50	4.13	8.50	2.38	21.62

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
Tempo SPS - Long-Term and Build-Out

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
Tempo SPS	2939	2.96	30.21	8.50	1.50	4.13	39.80	11.14	55.48

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
eQuinelle SPS - Short-Term

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
eQuinelle SPS	632	3.34	7.32	0.00	1.50	0.00	15.41	4.31	25.63

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
eQuinelle SPS - Mid-Term

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
eQuinelle SPS	735	3.31	8.44	0.00	1.50	0.00	16.71	4.68	27.12

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
eQuinelle SPS - Long-Term and Build-Out

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
eQuinelle SPS	1191	3.20	13.23	0.00	1.50	0.00	22.41	6.27	33.51

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
Colonnade SPS - Short-Term

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
Colonnade SPS	158	3.55	1.95	0.00	1.50	0.00	3.27	0.92	9.86

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
Colonnade SPS - Mid-Term

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
Colonnade SPS	158	3.55	1.95	28.20	1.50	13.71	31.47	8.81	31.47

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
Colonnade SPS - Long-Term

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
Colonnade SPS	1518	3.14	16.55	39.00	1.50	18.96	59.27	16.60	59.11

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

North Grenville Master Plan - Sanitary Design Sheet
Colonnade SPS - Build-Out

Street Name	Residential			Commercial/Institutional			Infiltration		Peak Design Flow L/s
	Pop.	Peaking Factor	Residential Flow (L/s)	Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Peak Extr. Flow L/s	
Colonnade SPS	7018	2.68	65.41	73.30	1.50	35.63	151.69	42.47	150.52

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

Street Name	MH No.		Residential					Commercial/Institutional				Infiltration			Peak Design Flow L/s	Pipe Data									Upstream Geometry				Downstream Geometry			
	From	To	Pop.	Cum. Pop.	Cum. Area (ha)	Peaking Factor	Residential Flow (L/s)	Area (ha)	Cum. Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Cum. Area (ha)	Peak Extr. Flow L/s		Dia	Type	Actual Diameter	Slope	Q Full (L/s)	V Full	Length	Residual Capacity	% Full	TG From	Obvert	Invert	Cover	TG TO	Obvert	Invert	Cover
Catchment Area #3 (Syphon)	SAMH-13000	SAMH-10007	557	557	0.00	3.36	6.50	13.89	13.89	1.50	6.75	53.12	53.12	14.87	28.12	150	Circular	152.40				103.32							87.730	85.512	85.360	2.218
Catchment Area #1 (Barnes St)	SAMHA-0018	SAMH-10007	1504	1504	0.00	3.14	16.41	25.80	25.80	1.50	12.54	88.29	88.29	24.72	53.68	300	Circular	304.80				37.85							87.805	85.605	85.300	2.200
Barnes St - Lydia St	SAMH-10007	SAMH-10006		2061	0.00	3.06	21.90		39.69	1.50	19.29		88.29	24.72	65.92	375	Circular	381.00	0.26%	93.27	0.82	37.85	27.35	71%	87.730	85.561	85.180	2.169	87.470	85.251	84.870	2.219
Lydia St - James St	SAMH-10006	SAMH-10005		2061	0.00	3.06	21.90		39.69	1.50	19.29		88.29	24.72	65.92	375	Circular	381.00	0.20%	81.80	0.72	115.61	15.88	81%	87.420	85.251	84.870	2.169	88.240	85.051	84.670	3.189
Curry (James St - midway to Parliament St)	SAMH-10005	SAMH-10004		2061	0.00	3.06	21.90		39.69	1.50	19.29		88.29	24.72	65.92	375	Circular	381.00	0.56%	136.88	1.20	74.89	70.96	48%	88.240	84.780	84.670	3.460	88.030	84.631	84.250	3.399
Curry St (Midway of James - Parliament St)	SAMH-10004	SAMH-10003		2061	0.00	3.06	21.90		39.69	1.50	19.29		88.29	24.72	65.92	375	Circular	381.00	0.28%	96.79	0.85	62.76	30.87	68%	88.030	84.631	84.250	3.399	87.680	84.791	84.410	2.889
Catchment Area #2 (Parliament St)	SAMHA-0052	SAMH-10003	691	691	0.00	3.32	7.96	8.24	8.24	1.50	4.00	25.93	25.93	7.26	19.22	300	Circular	304.80	0.98%	99.87	1.37	47.12	80.64	19%	88.840	85.885	85.580	2.955	87.650	85.425	85.120	2.225
Curry St (at Parliament St)	SAMH-10003	SAMH-10002		2752	0.00	2.98	28.47		47.93	1.50	23.30		114.22	31.98	83.75	375	Circular	381.00	0.40%	115.68	1.01	5.63	31.94	72%	87.680	84.821	84.440	2.859	87.450	84.691	84.310	2.759
Catchment Area #4 (Syphon)	SAMHA-0069	SAMH010004	764	764	0.00	3.30	8.75	12.06	12.06	1.50	5.86	101.40	101.40	28.39	43.00	300	Circular	304.80	1.05%	103.37	1.42	120.23	60.37	42%	88.937	86.252	85.947	2.685	88.030	85.145	84.840	2.885
Catchment Area #5 (Syphon)	SAMHA-16000	SAMH-10002	489	489	0.00	3.38	5.74	11.38	11.38	1.50	5.53	63.58	63.58	17.80	29.08	250	Circular	254.00	1.31%	71.01	1.40	120.23	41.93	41%	89.670	85.904	85.650	3.766	87.500	84.404	84.150	3.096
Curry St (Parliament St - Bridge St)	SAMH-10002	SAMH-10001		3241	0.00	2.93	32.98		59.31	1.50	28.83		332.32	93.05	154.86	600	Circular	609.60	0.96%	627.62	2.15	151.36	472.76	25%	87.500	84.970	84.360	2.530	87.390	83.180	82.570	4.210
Curry St (Bridge St - PS)	SAMH-10001	SAMH-10000		3241	0.00	2.93	32.98		59.31	1.50	28.83		332.32	93.05	154.86	600	Circular	609.60	3.14%	1135.08	3.89	48.60	980.22	14%	87.390	83.140	82.530	4.250	88.430	81.590	80.980	6.840

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

Pipes Directly on Curry Street or Syphon for Master Plan Assesment

Proposed Pipe Upgrades

Street Name	MH No.		Residential					Commercial/Institutional				Infiltration			Peak Design Flow L/s	Pipe Data									Upstream Geometry				Downstream Geometry			
	From	To	Pop.	Cum. Pop.	Cum. Area (ha)	Peaking Factor	Residential Flow (L/s)	Area (ha)	Cum. Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Cum. Area (ha)	Peak Extr. Flow L/s		Dia	Type	Actual Diameter	Slope	Q Full (L/s)	V Full	Length	Residual Capacity	% Full	TG From	Obvert	Invert	Cover	TG TO	Obvert	Invert	Cover
Catchment Area #3 (Syphon)	SAMH-13000	SAMH-10007	1035	1035	0.00	3.23	11.62	35.27	35.27	1.50	17.15	77.23	77.23	21.62	61.18	150	Circular	152.40				103.32							87.730	85.512	85.360	2.218
Catchment Area #1 (Barnes St)	SAMHA-0018	SAMH-10007	1504	1504	0.00	3.14	16.41	25.80	25.80	1.50	12.54	88.29	88.29	24.72	53.68	300	Circular	304.80				37.85							87.805	85.605	85.300	2.200
Barnes St - Lydia St	SAMH-10007	SAMH-10006		2539	0.00	3.00	26.47		61.07	1.50	29.69		88.29	24.72	80.88	375	Circular	381.00	0.26%	93.27	0.82	37.85	12.39	87%	87.730	85.561	85.180	2.169	87.470	85.251	84.870	2.219
Lydia St - James St	SAMH-10006	SAMH-10005		2539	0.00	3.00	26.47		61.07	1.50	29.69		88.29	24.72	80.88	375	Circular	381.00	0.20%	81.80	0.72	115.61	0.92	99%	87.420	85.251	84.870	2.169	88.240	85.051	84.670	3.189
Curry (James St - midway to Parliament St)	SAMH-10005	SAMH-10004		2539	0.00	3.00	26.47		61.07	1.50	29.69		88.29	24.72	80.88	375	Circular	381.00	0.56%	136.88	1.20	74.89	56.00	59%	88.240	85.161	84.780	3.079	88.030	84.631	84.250	3.399
Curry St (Midway of James - Parliament St)	SAMH-10004	SAMH-10003		2539	0.00	3.00	26.47		61.07	1.50	29.69		88.29	24.72	80.88	450	Circular	457.20	0.28%	157.39	0.96	62.76	76.51	51%	88.030	84.707	84.250	3.323	87.680	84.867	84.410	2.813
Catchment Area #2 (Parliament St)	SAMHA-0052	SAMH-10003	691	691	0.00	3.32	7.96	8.24	8.24	1.50	4.00	25.93	25.93	7.26	19.22	300	Circular	304.80	0.98%	99.87	1.37	47.12	80.64	19%	88.840	85.885	85.580	2.955	87.650	85.425	85.120	2.225
Curry St (at Parliament St)	SAMH-10003	SAMH-10002		3230	0.00	2.93	32.88		69.31	1.50	33.69		114.22	31.98	98.55	450	Circular	457.20	0.40%	188.11	1.15	5.63	89.56	52%	87.680	84.897	84.440	2.783	87.450	84.767	84.310	2.683
Catchment Area #4 (Syphon)	SAMHA-0069	SAMH010004	1083	1083	0.00	3.22	12.11	15.93	15.93	1.50	7.74	108.05	108.05	30.25	60.91	300	Circular	304.80	1.05%	103.37	1.42	120.23	42.46	59%	88.937	86.252	85.947	2.685	88.030	85.145	84.840	2.885
Catchment Area #5 (Syphon)	SAMHA-16000	SAMH-10002	489	489	0.00	3.38	5.74	11.38	11.38	1.50	5.53	63.58	63.58	17.80	29.08	250	Circular	254.00	1.31%	71.01	1.40	173.70	41.93	41%	89.670	85.904	85.650	3.766	87.500	84.404	84.150	3.096
Curry St (Parliament St - Bridge St)	SAMH-10002	SAMH-10001		3719	0.00	2.89	37.31		80.69	1.50	39.22		363.08	101.66	178.19	600	Circular	609.60	0.96%	627.62	2.15	151.36	449.43	28%	87.500	84.970	84.360	2.530	87.390	83.180	82.570	4.210
Curry St (Bridge St - PS)	SAMH-10001	SAMH-10000		3719	0.00	2.89	37.31		80.69	1.50	39.22		363.08	101.66	178.19	600	Circular	609.60	3.14%	1135.08	3.89	48.60	956.88	16%	87.390	83.140	82.530	4.250	88.430	81.590	80.980	6.840

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

Pipes Directly on Curry Street or Syphon for Master Plan Assesment

Proposed Pipe Upgrades

Street Name	MH No.		Residential					Commercial/Institutional				Infiltration			Peak Design Flow L/s	Pipe Data									Upstream Geometry				Downstream Geometry			
	From	To	Pop.	Cum. Pop.	Cum. Area (ha)	Peaking Factor	Residential Flow (L/s)	Area (ha)	Cum. Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Cum. Area (ha)	Peak Extr. Flow L/s		Dia	Type	Actual Diameter	Slope	Q Full (L/s)	V Full	Length	Residual Capacity	% Full	TG From	Obvert	Invert	Cover	TG TO	Obvert	Invert	Cover
Catchment Area #3 (Syphon)	SAMH-13000	SAMH-10007	1333	1333	0.00	3.17	14.68	35.27	35.27	1.50	17.15	78.32	78.32	21.93	64.56	150	Circular	152.40				103.32							87.730	85.512	85.360	2.218
Catchment Area #1 (Barnes St)	SAMHA-0018	SAMH-10007	1700	1700	0.00	3.11	18.37	25.80	25.80	1.50	12.54	92.52	92.52	25.91	56.81	300	Circular	304.80				37.85							87.805	85.605	85.300	2.200
Barnes St - Lydia St	SAMH-10007	SAMH-10006		3033	0.00	2.95	31.07		61.07	1.50	29.69		92.52	25.91	86.67	375	Circular	381.00	0.26%	93.27	0.82	37.85	6.60	93%	87.730	85.561	85.180	2.169	87.470	85.251	84.870	2.219
Lydia St - James St	SAMH-10006	SAMH-10005		3033	0.00	2.95	31.07		61.07	1.50	29.69		92.52	25.91	86.67	375	Circular	381.00	0.20%	81.80	0.72	115.61	-4.87	106%	87.420	85.251	84.870	2.169	88.240	85.051	84.670	3.189
Curry (James St - midway to Parliament St)	SAMH-10005	SAMH-10004		3033	0.00	2.95	31.07		61.07	1.50	29.69		92.52	25.91	86.67	375	Circular	381.00	0.56%	136.88	1.20	74.89	50.21	63%	88.240	85.161	84.780	3.079	88.030	84.631	84.250	3.399
Curry St (Midway of James - Parliament St)	SAMH-10004	SAMH-10003		3033	0.00	2.95	31.07		61.07	1.50	29.69		92.52	25.91	86.67	450	Circular	457.20	0.28%	157.39	0.96	62.76	70.72	55%	88.030	84.707	84.250	3.323	87.680	84.867	84.410	2.813
Catchment Area #2 (Parliament St)	SAMHA-0052	SAMH-10003	691	691	0.00	3.32	7.96	8.24	8.24	1.50	4.00	25.93	25.93	7.26	19.22	300	Circular	304.80	0.98%	99.87	1.37	47.12	80.64	19%	88.840	85.885	85.580	2.955	87.650	85.425	85.120	2.225
Curry St (at Parliament St)	SAMH-10003	SAMH-10002		3724	0.00	2.89	37.35		69.31	1.50	33.69		118.45	33.17	104.21	450	Circular	457.20	0.40%	188.11	1.15	5.63	83.90	55%	87.680	84.897	84.440	2.783	87.450	84.767	84.310	2.683
Catchment Area #4 (Syphon)	SAMHA-0069	SAMH010004	1249	1249	0.00	3.19	13.83	15.93	15.93	1.50	7.74	118.60	118.60	33.21	65.58	300	Circular	304.80	1.05%	103.37	1.42	120.23	37.80	63%	88.937	86.252	85.947	2.685	88.030	85.145	84.840	2.885
Catchment Area #5 (Syphon)	SAMHA-16000	SAMH-10002	836	836	0.00	3.28	9.52	15.95	15.95	1.50	7.75	73.35	73.35	20.54	37.81	250	Circular	254.00	1.31%	71.01	1.40	173.70	33.20	53%	89.670	85.904	85.650	3.766	87.500	84.404	84.150	3.096
Curry St (Parliament St - Bridge St)	SAMH-10002	SAMH-10001		4560	0.00	2.83	44.73		85.26	1.50	41.44		388.72	108.84	195.02	600	Circular	609.60	0.96%	627.62	2.15	151.36	432.60	31%	87.500	84.970	84.360	2.530	87.390	83.180	82.570	4.210
Curry St (Bridge St - PS)	SAMH-10001	SAMH-10000		4560	0.00	2.83	44.73		85.26	1.50	41.44		388.72	108.84	195.02	600	Circular	609.60	3.14%	1135.08	3.89	48.60	940.06	17%	87.390	83.140	82.530	4.250	88.430	81.590	80.980	6.840

Design Parameters		
Residential Flows	300	L/Cap/Day
Infiltration Flows	0.28	L/s/ha
Correction Factor (Harmon's Formula)	0.8	-
Commercial (ICI) Peak Factor	1.5	-
Commercial (ICI)Average Flow	28000	L/ha/d
Manning Coefficient	0.013	

Pipes Directly on Curry Street or Syphon for Master Plan Assesment

Proposed Pipe Upgrades

Street Name	MH No.		Residential					Commercial/Institutional				Infiltration			Peak Design Flow L/s	Pipe Data								Upstream Geometry				Downstream Geometry			
	From	To	Pop.	Cum. Pop.	Cum. Area (ha)	Peaking Factor	Residential Flow (L/s)	Area (ha)	Cum. Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Cum. Area (ha)	Peak Extr. Flow L/s		Dia	Type	Actual Diameter	Slope	Q Full (L/s)	V Full	Length	Residual Capacity	% Full	TG From	Obvert	Invert	Cover	TG TO	Obvert	Invert	Cover
Catchment Area #3 (Syphon)	SAMH-13000	SAMH-10007	1333	1333	0.00	3.17	14.68	35.76	35.76	1.50	17.38	78.81	78.81	22.07	64.94	150	Circular	152.40				103.32							87.730	85.512	85.360	2.218
Catchment Area #1 (Barnes St)	SAMHA-0018	SAMH-10007	1700	1700	0.00	3.11	18.37	27.29	27.29	1.50	13.27	90.40	90.40	25.31	56.95	300	Circular	304.80				37.85							87.805	85.605	85.300	2.200
Barnes St - Lydia St	SAMH-10007	SAMH-10006		3033	0.00	2.95	31.07		63.05	1.50	30.65		90.40	25.31	87.04	375	Circular	381.00	0.26%	93.27	0.82	37.85	6.23	93%	87.730	85.561	85.180	2.169	87.470	85.251	84.870	2.219
Lydia St - James St	SAMH-10006	SAMH-10005		3033	0.00	2.95	31.07		63.05	1.50	30.65		90.40	25.31	87.04	375	Circular	381.00	0.20%	81.80	0.72	115.61	-5.24	106%	87.420	85.251	84.870	2.169	88.240	85.051	84.670	3.189
Curry (James St - midway to Parliament St)	SAMH-10005	SAMH-10004		3033	0.00	2.95	31.07		63.05	1.50	30.65		90.40	25.31	87.04	375	Circular	381.00	0.56%	136.88	1.20	74.89	49.84	64%	88.240	85.161	84.780	3.079	88.030	84.631	84.250	3.399
Curry St (Midway of James - Parliament St)	SAMH-10004	SAMH-10003		3033	0.00	2.95	31.07		63.05	1.50	30.65		90.40	25.31	87.04	450	Circular	457.20	0.28%	157.39	0.96	62.76	70.35	55%	88.030	84.707	84.250	3.323	87.680	84.867	84.410	2.813
Catchment Area #2 (Parliament St)	SAMHA-0052	SAMH-10003	776	776	0.00	3.29	8.88	8.24	8.24	1.50	4.00	27.00	27.00	7.56	20.44	300	Circular	304.80	0.98%	99.87	1.37	47.12	79.43	20%	88.840	85.885	85.580	2.955	87.650	85.425	85.120	2.225
Curry St (at Parliament St)	SAMH-10003	SAMH-10002		3809	0.00	2.88	38.11		71.29	1.50	34.65		117.40	32.87	105.64	450	Circular	457.20	0.40%	188.11	1.15	5.63	82.48	56%	87.680	84.897	84.440	2.783	87.450	84.767	84.310	2.683
Catchment Area #4 (Syphon)	SAMHA-0069	SAMH010004	1249	1249	0.00	3.19	13.83	15.93	15.93	1.50	7.74	109.60	109.60	30.69	63.06	300	Circular	304.80	1.05%	103.37	1.42	120.23	40.32	61%	88.937	86.252	85.947	2.685	88.030	85.145	84.840	2.885
Catchment Area #5 (Syphon)	SAMHA-16000	SAMH-10002	2185	2185	0.00	3.04	23.10	11.38	11.38	1.50	5.53	86.23	86.23	24.14	52.77	250	Circular	254.00	1.31%	71.01	1.40	173.70	18.23	74%	89.670	85.904	85.650	3.766	87.500	84.404	84.150	3.096
Curry St (Parliament St - Bridge St)	SAMH-10002	SAMH-10001		5994	0.00	2.74	56.96		82.67	1.50	40.19		392.04	109.77	206.92	600	Circular	609.60	0.96%	627.62	2.15	151.36	420.70	33%	87.500	84.970	84.360	2.530	87.390	83.180	82.570	4.210
Curry St (Bridge St - PS)	SAMH-10001	SAMH-10000		5994	0.00	2.74	56.96		82.67	1.50	40.19		392.04	109.77	206.92	600	Circular	609.60	3.14%	1135.08	3.89	48.60	928.16	18%	87.390	83.140	82.530	4.250	88.430	81.590	80.980	6.840

Design Parameters		
Residential Flows	300	L/Cap/Day
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Street Name	MH No.		Residential					Commercial/Institutional				Infiltration			Peak Design Flow L/s	Pipe Data									Upstream Geometry				Downstream Geometry			
	From	To	Pop.	Cum. Pop.	Cum. Area (ha)	Peaking Factor	Residential Flow (L/s)	Area (ha)	Cum. Area (ha)	Peaking Factor	ICI Peak Flow (L/s)	Area (ha)	Cum. Area (ha)	Peak Extr. Flow L/s		Dia	Type	Actual Diameter	Slope	Q Full (L/s)	V Full	Length	Residual Capacity	% Full	TG From	Obvert	Invert	Cover	TG TO	Obvert	Invert	Cover
Catchment Area #3 (Syphon)	SAMH-13000	SAMH-10007	1333	1333	0.00	3.17	14.68	35.76	35.76	1.50	17.38	78.81	78.81	22.07	64.94	150	Circular	152.40				103.32							87.730	85.512	85.360	2.218
Catchment Area #1 (Barnes St)	SAMHA-0018	SAMH-10007	1700	1700	0.00	3.11	18.37	27.29	27.29	1.50	13.27	90.40	90.40	25.31	56.95	300	Circular	304.80				37.85							87.805	85.605	85.300	2.200
Barnes St - Lydia St	SAMH-10007	SAMH-10006		3033	0.00	2.95	31.07		63.05	1.50	30.65		90.40	25.31	87.04	375	Circular	381.00	0.26%	93.27	0.82	37.85	6.23	93%	87.730	85.561	85.180	2.169	87.470	85.251	84.870	2.219
Lydia St - James St	SAMH-10006	SAMH-10005		3033	0.00	2.95	31.07		63.05	1.50	30.65		90.40	25.31	87.04	375	Circular	381.00	0.20%	81.80	0.72	115.61	-5.24	106%	87.420	85.251	84.870	2.169	88.240	85.051	84.670	3.189
Curry (James St - midway to Parliament St)	SAMH-10005	SAMH-10004		3033	0.00	2.95	31.07		63.05	1.50	30.65		90.40	25.31	87.04	375	Circular	381.00	0.56%	136.88	1.20	74.89	49.84	64%	88.240	85.161	84.780	3.079	88.030	84.631	84.250	3.399
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Catchment Area #4 (Syphon)	SAMHA-0069	SAMH010004	1394	1394	0.00	3.16	15.30	15.93	15.93	1.50	7.74	118.60	118.60	33.21	67.05	300	Circular	304.80	1.05%	103.37	1.42	120.23	36.32	65%	88.937	86.252	85.947	2.685	88.030	85.145	84.840	2.885
Catchment Area #5 (Syphon)	SAMHA-16000	SAMH-10002	2415	2415	0.00	3.02	25.29	11.38	11.38	1.50	5.53	90.93	90.93	25.46	56.29	250	Circular	254.00	1.31%	71.01	1.40	173.70	14.72	79%	89.670	85.904	85.650	3.766	87.500	84.404	84.150	3.096
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Manning Coefficient	0.013	

Pipes Directly on Curry Street or Syphon for Master Plan Assesment

Proposed Pipe Upgrades

Appendix E

Consultation Documentation

Notice of Study Commencement

The Municipality of North Grenville
Water and Wastewater Master Plan Update

The Municipality of North Grenville has initiated a Master Planning process in accordance with Approach 1 of the Municipal Engineers Association (MEA) Class Environmental Assessment (Class EA) to undertake an update to the Water and Wastewater Master Plan that was prepared in 2015.

The Master Plan will identify and assess options to improve the ability of North Grenville's water and wastewater systems to accommodate the current and future population within the Municipality. This Study is being conducted according to the requirements of Approach 1 of a Master Plan under the Ontario Municipal Class Environmental Assessment process (October 2000, as amended in 2015 and 2023).

Public and agency consultation is a key part of the Master Plan process. Your input will help identify preferred solutions(s) that will support future growth and development.

How Do I Get More Information?

The Study team will review background information which will be presented at a Public Information Centre. Updates will be provided during the study on the Municipality website at www.northgrenville.ca/projects.

You can also contact a member of the Master Plan team listed below with any questions, or to provide input on the study.

Matthew Marcuccio, P.Eng.
Senior Environmental Engineer
J.L. Richards & Associates Limited
Phone: 1-343-803-4554
Email: mmarcuccio@jlrichards.ca

Nicholas Shepherd
Water & Wastewater Technologist
Municipality of North Grenville
Phone: 613-258-9569 ext. 179
Email: nshepherd@northgrenville.on.ca

All personal information included in your request – such as name, address, telephone number and property location – is collected, under the authority of section 30 of the Environmental Assessment Act and is collected and maintained for the purpose of creating a record that is available to the public. As this information is collected for the purpose of a public record, the protection of personal information provided in the Freedom of Information and Protection of Privacy Act (FIPPA) does not apply (s.37). Personal information you submit will become part of a public record that is available to the public unless you request that your personal information remain confidential.

This Notice was issued on August 6th, 2024.

North Grenville
Stakeholder Consultation List
North Grenville Water and Sewer Master Plan

Agency	Contact	Address	Phone	Email
LOCAL AUTHORITIES				
Rideau Valley Conservation Authority		3889 Rideau Valley Drive, Box 599, Manotick, ON, K4M 1A5	613-692-3571	info@rvca.ca
Fire Department	John R. Okum, Fire Chief	259 County Road 44, Kemptville	613-258-9569 ext. 201	EPSadmin@northgrenville.on.ca
PROVINCIAL AGENCIES				
Ministry of the Environment, Conservation and Parks	General Inbox			eanotification.eregion@ontario.ca
Hydro One Networks Inc.				SecondaryLandUse@HydroOne.com
Bell	Robyn Elliot	Access Network Coordinator Bell Canada	613-345-3763	robyn.elliott@bell.ca
Ministry of Agriculture, Food and Rural Affairs	Payton Hofstetter, Rural Planner Land Use Policy & Stewardship Food Safety and Environmental Policy Branch	1 Stone Road West Guelph ON N1G 4Y2	226-962-8933	Email omafra.eanotices@ontario.ca as initial step prior to circulating documents. payton.hofstetter@ontario.ca
Ministry of Citizenship and Multiculturalism	Karla Barboza, Team Lead, Heritage Heritage Planning Unit Heritage Branch	400 University Ave. 5th Floor		karla.barboza@ontario.ca
Ministry of Municipal Affairs and Housing	Michael Elms, Manager Community Planning and Development Eastern Municipal Services Office	8 Estate Lane, Rockwood House Kingston ON K7M 9A8	613-545-2132	michael.elms@ontario.ca
Ministry of the Solicitor General	Wagdy Guirgis, Manager(A), Capital Planning Facilities and Capital Planning Branch	25 Grosvenor Street, 13th Flr Toronto ON M7A 1Y6	647-201-6169	wagdy.guirgis@ontario.ca
Infrastructure Ontario	Ernest Abraham Madeleine Sousa Tate Kelly			Ernest.Abraham@infrastructureontario.ca Madeleine.Sousa@infrastructureontario.ca Tate.Kelly@infrastructureontario.ca
Ministry of Natural Resources and Forestry	Jessica Post, Land Use Planning and Strategic Issues	300 Water Street, Box 7000 4th Floor, South Tower Peterborough ON K9J 8MS	705-761-4839	SR.Planning@ontario.ca
FEDERAL AGENCIES				
Environment and Climate Change Canada	Rob Clavering, Manager Environmental Assessment Section Environmental Protection Branch – Ontario Region	4905 Dufferin St. Downsview ON M3H 5T4	416-458-9670	robert.clavering@ec.gc.ca
INDIGENOUS GROUPS				
Algonquins of Ontario	Ethan Huner Natural & Cultural Resource Strategist	Algonquins of Ontario Consultation Office 31 Riverside Drive, Suite 101	1.855.735.3759 or 613-735-3759	algonquins@tanakiwin.com
Algonquins of Pikwakanagan First Nation	Amanda Two-Axe Kohoko Manager Consultation	1657A Mishomis Inamo Pikwakanagan, ON, Canada K0J 1X0	613-625-2800	consultation@pikwakanagan.ca
Mohawk Council of Akwesasne	General Consultation Inbox	PO Box 90 Akwesasne, Quebec, H0M 1A0 101 Tewesateni Road	Phone 613-575-2250 Fax: 613-575-	consultation@akwesasne.ca
Huron Wendat (Wendake)	General Inbox	255 Place Chef Michel Laveau Wendake, Quebec G0A 4V0 Canada	Phone: 418 843-3767 Toll-free: 1-877-	administration@wendake.ca
MUNICIPAL AGENCIES				
Amy Martin	Director of Planning and Development Municipality of North Grenville		613-258-9569 ext.118	amartin@northgrenville.on.ca
Bill Guy	Manager of Engineering and Operations, Public Works, United Counties of Leeds and Grenville		(613) 342-3840 Ext 2426	Bill.Guy@uclg.on.ca
PROPERTY OWNERS				
MUNICIPALITY TO CONTACT				
DEVELOPERS				
Regional Group - eQuinielle	Stefanie Kaminski CC: Drew Blair		613-858-8821	SKaminski@regionalgroup.com CC: D.Blair@novatech-eng.com
Urbandale – Sommerville Subdivisio	Marcel Denomme			mdenomme@urbandale.com
LA Group – Oxford Village	Gilles Brisebois		613-715-2600	gilles@lagroup.ca
LA Group – Oxford Village	John Wilson		613-406-2678	john@lagroup.ca
Beveridge	Andrew Beveridge		613-795-2389	beveridge.andrew@gmail.com
Beveridge	Jim Beveridge		613-761-0927	jim@localgrocer.ca
Kevlar Developments	Kevin Mulligan		613-223-4040	kevin@kevlardevelopments.ca
Butler Group	Greg Brule		613-863-2428	gbrule249@gmail.com
Lioness Development (Urbandale)	Vincent Denomme			vdenomme@urbandale.com
Arcadis (with LA Group)	Demetrius Yannoulopoulos		613-447-0504	demetrius.yannoulopoulos@arcadis.com
PUBLIC				
	Ralph Raina			[redacted]

Ministry of the Environment, Conservation and Parks

Environmental Assessment Branch

1st Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax.: 416 314-8452

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des évaluations environnementales

Rez-de-chaussée
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

Ontario

August 16, 2024

BY EMAIL ONLY

Township of North Grenville

Attention: Nicholas Shepherd, Water and Wastewater Technologist
Email: nshepherd@northgrenville.on.ca

Re: **The Municipality of North Grenville Water and Wastewater Master Plan Update MECP Response to Notice of Commencement**

Dear Nicholas Shepherd,

This letter is in response to the Notice of Commencement for the above noted project issued August 6th, 2024.

The Municipality of North Grenville has initiated a Master Planning process in accordance with Approach 1 of the Municipal Engineers Association (MEA) Class Environmental Assessment (Class EA) to undertake an update to the Water and Wastewater Master Plan that was prepared in 2015.

The Master Plan will identify and assess options to improve the ability of North Grenville's water and wastewater systems to accommodate the current and future population within the Municipality.

As noted above this project is being completed as an **Approach No. 1 Master Plan** project under the framework of the **Municipal Class Environmental Assessment** (October 2000, amended in 2007, 2011, 2015, 2023&2024), which is approved under the Ontario Environmental Assessment Act. The study will address the preliminary requirements of Phase 1 and part of Phase 2 of the Municipal Class EA process.

Approach #1 involves the Master Plan being done at a broad level of assessment thereby requiring more detailed investigations at the project-specific level in order to fulfil the Municipal Class EA documentation requirements for the specific Schedule B and C projects identified within the Master Plan. The Master Plan would therefore become the basis for, and be used in support of, future investigations for the specific Schedule B and C projects identified within it. Schedule B and C projects would require issuance of a Notice of Commencement. In addition, Schedule B projects would require the filing of the Project file for public review while Schedule C projects would have to fulfil Phases 3 and 4 prior to filing an Environmental Study Report for public review.

Once the Master Plan report is finalized, the proponent must issue a **Notice of Master Plan** providing a minimum 30-day period during which documentation may be reviewed and comment and input can be

submitted to the Proponent, prior to being approved by the municipality. As the Section 16 Order provisions only apply to specific projects completing the Class EA process and not the Master Plan document itself, there are no Section 16 Order provisions at the time of completion of the Master Plan for approach #1. Projects identified in the Master Plan will be subject to Section 16 Order provisions at the time of filing of a Project File or Environmental Study Report.

The attached "Areas of Interest" document provides guidance regarding the ministry's interests with respect to the Class EA process. Please address all areas of interest in the EA documentation at an appropriate level for the EA study. Proponents who address all the applicable areas of interest can minimize potential delays to the project schedule. **Further information is provided at the end of the Areas of Interest document relating to recent changes to the Environmental Assessment Act through Bill 197, Covid-19 Economic Recovery Act 2020.**

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before authorizing this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the consultation process.

The proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to the proposed project**, the MECP is delegating the procedural aspects of rights-based consultation to the proponent through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit. The following Indigenous Communities represent the communities to be consulted through this TMP process:

- **Algonquins of Ontario (AOO)**
- **Algonquins of Pikwàkanagàn First Nation**
- **Mohawk Council of Akwesasne**

If the proponent has undertaken archeological studies and are required to undertake any work related to archeological resources, they should also include:

- **Huron-Wendat**

Steps that the proponent may need to take in relation to Aboriginal consultation for the proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process". Additional information related to Ontario's Environmental Assessment Act is available online at: www.ontario.ca/environmentalassessments.

Please also refer to the attached document "A Proponent's Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities" for further information, including the MECP's expectations for EA report documentation related to consultation with communities.

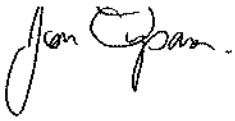
The proponent must contact the Director of Environmental Assessment Branch (EABDirector@ontario.ca) under the following circumstances subsequent to initial discussions with the communities identified by MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities
- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right
- Consultation with Indigenous communities or other stakeholders has reached an impasse
- An Order request is expected on the basis of impacts to Aboriginal or treaty rights

The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

Should you or any members of your project team have any questions regarding the material above, please contact me at jon.orpana@ontario.ca
.

Yours truly,



Regional Environmental Planner – Eastern Region
Environmental Assessment Branch

cc

Mahmod Mahmod, Water Compliance Supervisor, Kingston District Office, MECP
Email: Mahmod Mahmod@ontario.ca

Matthew Marcuccio, P.Eng.
Senior Environmental Planner
J.L. Richards & Associates Limited.
Email: mmarcouccio@jlrichards.ca

Attach: Areas of Interest
A Proponent's Introduction to the Delegation of Procedural Aspects of Consultation with Aboriginal Communities
The Client's Guide to Preliminary Screening for Species at Risk (Draft May 2019)

AREAS OF INTEREST (v. August 2022)

It is suggested that you check off each section after you have considered / addressed it.

☐ **Planning and Policy**

- Applicable plans and policies should be identified in the report, and the proponent should describe how the proposed project adheres to the relevant policies in these plans.
    - Projects located in MECP Central, Eastern or West Central Region may be subject to **A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020)**.
    - Projects located in MECP Central or Eastern Region may be subject to the **Oak Ridges Moraine Conservation Plan (2017)** or the **Lake Simcoe Protection Plan (2014)**.
    - Projects located in MECP Central, Southwest or West Central Region may be subject to the **Niagara Escarpment Plan (2017)**.
    - Projects located in MECP Central, Eastern, Southwest or West Central Region may be subject to the **Greenbelt Plan (2017)**.
    - Projects located in MECP Northern Region may be subject to the **Growth Plan for Northern Ontario (2011).**

- The **Provincial Policy Statement (2020)** contains policies that protect Ontario's natural heritage and water resources. Applicable policies should be referenced in the report, and the proponent should describe how the proposed project is consistent with these policies.

- In addition to the provincial planning and policy level, the report should also discuss the planning context at the municipal and federal levels, as appropriate.

☐ **Source Water Protection**

The *Clean Water Act*, 2006 (CWA) aims to protect existing and future sources of drinking water. To achieve this, several types of vulnerable areas have been delineated around surface water intakes and wellheads for every municipal residential drinking water system that is located in a source protection area. These vulnerable areas are known as a Wellhead Protection Areas (WHPAs) and surface water Intake Protection Zones (IPZs). Other vulnerable areas that have been delineated under the CWA include Highly Vulnerable Aquifers (HVAs), Significant Groundwater Recharge Areas (SGRAs), Event-based modelling areas (EBAs), and Issues Contributing Areas (ICAs). Source protection plans have been developed that include policies to address existing and future risks to sources of municipal drinking water within these vulnerable areas.

Projects that are subject to the Environmental Assessment Act that fall under a Class EA, or one of the Regulations, have the potential to impact sources of drinking water if they occur in designated vulnerable areas or in the vicinity of other at-risk drinking water systems (i.e. systems that are not municipal residential systems). MEA Class EA projects may include activities that, if located in a vulnerable area, could be a threat to sources of drinking water (i.e. have the potential to adversely affect the quality or quantity of drinking water sources) and the activity could therefore be subject to policies in a source protection plan. Where an activity poses a risk to drinking water, policies in the local source protection plan may impact how or where that activity is undertaken. Policies may prohibit certain activities, or they may require risk management measures for these activities. Municipal Official Plans, planning decisions, Class EA projects (where the project includes an activity that is a threat to drinking water) and prescribed instruments must conform with policies that address significant risks to drinking water and must have regard for policies that address moderate or low risks.

- The proponent should identify the source protection area and should clearly document how the proximity of the project to sources of drinking water (municipal or other) and any delineated vulnerable areas was considered and assessed. Specifically, the report should discuss whether or not the project is located in a vulnerable area and provide applicable details about the area.

- If located in a vulnerable area, proponents should document whether any project activities are prescribed drinking water threats and thus pose a risk to drinking water (this should be consulted on with the appropriate Source Protection Authority). Where an activity poses a risk to drinking water, the proponent must document and discuss in the report how the project adheres to or has regard to applicable policies in the local source protection plan. This section should then be used to inform and be reflected in other sections of the report, such as the identification of net positive/negative effects of alternatives, mitigation measures, evaluation of alternatives etc.

- While most source protection plans focused on including policies for significant drinking water threats in the WHPAs and IPZs it should be noted that even though source protection plan policies may not apply in HVAs, these are areas where aquifers are sensitive and at risk to impacts and within these areas, activities may impact the quality of sources of drinking water for systems other than municipal residential systems.

- In order to determine if this project is occurring within a vulnerable area, proponents can use this mapping tool: http://www.applications.ene.gov.on.ca/swp/en/index.php. Note that various layers (including WHPAs, WHPA-Q1 and WHPA-Q2, IPZs, HVAs, SGRAs, EBAs, ICAs) can be turned on through the “Map Legend” bar on the left. The mapping tool will also provide a link to the appropriate source protection plan in order to identify what policies may be applicable in the vulnerable area.

- For further information on the maps or source protection plan policies which may relate to their project, proponents must contact the appropriate source protection authority. **Please consult with the local source protection authority to discuss potential impacts on drinking water. Please document the results of that consultation within the report and include all communication documents/correspondence.**

More Information

For more information on the *Clean Water Act*, source protection areas and plans, including specific information on the vulnerable areas and drinking water threats, please refer to Conservation Ontario’s website where you will also find links to the local source protection plan/assessment report.

A list of the prescribed drinking water threats can be found in section 1.1 of Ontario Regulation 287/07 made under the *Clean Water Act*. In addition to prescribed drinking water threats, some source protection plans may include policies to address additional “local” threat activities, as approved by the MECP.

- **Climate Change**

The document "Considering Climate Change in the Environmental Assessment Process" (Guide) is now a part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. Proponents should review this Guide in detail.

- **The MECP expects proponents of projects under a Class EA or EA Act Regulation to:**

1. Consider during the assessment of alternative solutions and alternative designs, the following:

a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).

2. Include a discrete section in the report detailing how climate change was considered in the EA.

How climate change is considered can be qualitative or quantitative in nature and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered.

- The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "Community Emissions Reduction Planning: A Guide for Municipalities" document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

Air Quality, Dust and Noise

- If there are sensitive receptors in the surrounding area of this project, a quantitative air quality/odour impact assessment will be useful to evaluate alternatives, determine impacts and identify appropriate mitigation measures. The scope of the assessment can be determined based on the potential effects of the proposed alternatives, and typically includes source and receptor characterization and a quantification of local air quality impacts on the sensitive receptors and the environment in the study area. The assessment will compare to all applicable standards or guidelines for all contaminants of concern.

- If a quantitative Air Quality Impact Assessment is not required for the project, the MECP expects that the report contain a qualitative assessment which includes:

    - A discussion of local air quality including existing activities/sources that significantly impact local air quality and how the project may impact existing conditions;
    - A discussion of the nearby sensitive receptors and the project's potential air quality impacts on present and future sensitive receptors;
    - A discussion of local air quality impacts that could arise from this project during both construction and operation; and
    - A discussion of potential mitigation measures.

- Dust and noise control measures should be addressed and included in the construction plans to ensure that nearby residential and other sensitive land uses within the study area are not adversely affected during construction activities.

- The MECP recommends that non-chloride dust-suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures that could be applied, refer to *Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities* report prepared for Environment Canada. March 2005.

- The report should consider the potential impacts of increased noise levels during the operation of the completed project. The proponent should explore all potential measures to mitigate significant noise impacts during the assessment of alternatives.

- Noise associated with a proposed transformer station should be evaluated. Note that any noise monitoring and assessment should be conducted in accordance with the requirements of MECP guidelines, such as MECP Publication NPC-233, "*Information to be Submitted for Approval of Stationary Sources of Sound*".

- In order to address potential noise impacts of the transformer station, it may be necessary to first monitor ambient noise levels prior to the installation of the transformer station, and to then conduct a noise assessment after the transformer station is installed and operational. Depending on the results of these studies and the proximity to sensitive receptors, remedial measures may be needed to address noise generated by the transformer station.

Ecosystem Protection and Restoration

- Any impacts to ecosystem form and function must be avoided where possible. The report should describe any proposed mitigation measures and how project planning will protect and enhance the local ecosystem.

- Natural heritage and hydrologic features should be identified and described in detail to assess potential impacts and to develop appropriate mitigation measures. The following sensitive environmental features may be located within or adjacent to the study area:
    - Key Natural Heritage Features: Habitat of endangered species and threatened species, fish habitat, wetlands, areas of natural and scientific interest (ANSIs), significant valleylands, significant woodlands; significant wildlife habitat (including habitat of special concern species); sand barrens, savannahs, and tallgrass prairies; and alvars.
    - Key Hydrologic Features: Permanent streams, intermittent streams, inland lakes and their littoral zones, seepage areas and springs, and wetlands.
    - Other natural heritage features and areas such as: vegetation communities, rare species of flora or fauna, Environmentally Sensitive Areas, Environmentally Sensitive Policy Areas, federal and provincial parks and conservation reserves, Greenland systems etc.

We recommend consulting with the Ministry of Natural Resources and Forestry (MNRF), Fisheries and Oceans Canada (DFO) and your local conservation authority to determine if special measures or additional studies will be necessary to preserve and protect these sensitive features.

Species at Risk

- The Ministry of the Environment, Conservation and Parks has now assumed responsibility of Ontario's Species at Risk program. Information, standards, guidelines, reference materials and technical resources to assist you are found at https://www.ontario.ca/page/species-risk.

- The Client's Guide to Preliminary Screening for Species at Risk (Draft May 2019) has been attached to the covering email for your reference and use. Please review this document for next steps.

- For any questions related to subsequent permit requirements, SAR Considerations etc., proponents / consultants should contact SAROntario@ontario.ca.

Surface Water

- The report must include enough information to demonstrate that there will be no negative impacts on the natural features or ecological functions of any watercourses within the study area.

Measures should be included in the planning and design process to ensure that any impacts to watercourses from construction or operational activities (e.g. spills, erosion, pollution) are mitigated as part of the proposed undertaking.

- Additional stormwater runoff from new pavement can impact receiving watercourses and flood conditions. Quality and quantity control measures to treat stormwater runoff should be considered for all new impervious areas and, where possible, existing surfaces. The ministry's Stormwater Management Planning and Design Manual (2003) should be referenced in the report and utilized when designing stormwater control methods.

- A Stormwater Management Plan prepared as part of the Class EA process should include:

    - Strategies to address potential water quantity and erosion impacts related to stormwater draining into streams or other sensitive environmental features, and to ensure that adequate (enhanced) water quality is maintained
    - Watershed information, drainage conditions, and other relevant background information
    - Future drainage conditions, stormwater management options, information on erosion and sediment control during construction, and other details of the proposed works
    - Information on maintenance and monitoring commitments.

- Any potential approval requirements for surface water taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, except for certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information. Additionally, an Environmental Compliance Approval under the OWRA is required for municipal stormwater management works.

Groundwater

- The status of, and potential impacts to any well water supplies should be addressed. If the project involves groundwater takings or changes to drainage patterns, the quantity and quality of groundwater may be affected due to drawdown effects or the redirection of existing contamination flows. In addition, project activities may infringe on existing wells such that they must be reconstructed or sealed and abandoned. Appropriate information to define existing groundwater conditions should be included in the report.

- If the potential construction or decommissioning of water wells is identified as an issue, the report should refer to Ontario Regulation 903, Wells, under the OWRA.

- Potential impacts to groundwater-dependent natural features should be addressed. Any changes to groundwater flow or quality from groundwater taking may interfere with the ecological processes of streams, wetlands or other surficial features. In addition, discharging contaminated or high volumes of groundwater to these features may have direct impacts on their function. Any potential effects should be identified, and appropriate mitigation measures should be recommended. The level of detail required will be dependent on the significance of the potential impacts. For example, where construction of transmission towers is proposed, any pile driving into the subsurface that is required for steel pile type tower foundations, particularly to the bedrock surface at depth, may have an adverse effect on local groundwater resources.

- Any potential approval requirements for groundwater taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, with the exception of certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information.

- Consultation with the railroad authorities is necessary wherever there is a plan to use construction dewatering in the vicinity of railroad lines or where the zone of influence of the construction dewatering potentially intercepts railroad lines.

- Groundwater should be protected from the potential for spills, dewatering and wood pole preservative during construction. A plan should be in place for preventing and dealing with spills. All spills that could potentially cause damage to the environment should be reported to the Spills Action Centre of the Ministry of the Environment, Conservation and Parks at 1-800-268-6060.

Excess Materials Management

- In December 2019, MECP released a new regulation under the Environmental Protection Act, titled "On-Site and Excess Soil Management" (O. Reg. 406/19) to support improved management of excess construction soil. This regulation is a key step to support proper management of excess soils, ensuring valuable resources don't go to waste and to provide clear rules on managing and reusing excess soil. New risk-based standards referenced by this regulation help to facilitate local beneficial reuse which in turn will reduce greenhouse gas emissions from soil transportation, while ensuring strong protection of human health and the environment. The new regulation is being phased in over time, with the first phase in effect on January 1, 2021. For more information, please visit https://www.ontario.ca/page/handling-excess-soil.

- The report should reference that activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP's current guidance document titled "Management of Excess Soil – A Guide for Best Management Practices" (2014).

- All waste generated during construction must be disposed of in accordance with ministry requirements

Contaminated Sites

- Any current or historical waste disposal sites should be identified in the report. The status of these sites should be determined to confirm whether approval pursuant to Section 46 of the EPA may be required for land uses on former disposal sites. We recommend referring to the MECP's D-4 guideline for land use considerations near landfills and dumps.
    - Resources available may include regional/local municipal official plans and data; provincial data on large landfill sites and small landfill sites; Environmental Compliance Approval information for waste disposal sites on Access Environment.

- Other known contaminated sites (local, provincial, federal) in the study area should also be identified in the report (Note – information on federal contaminated sites is found on the Government of Canada's website).

- The location of any underground storage tanks should be investigated in the report. Measures should be identified to ensure the integrity of these tanks and to ensure an appropriate response in the event of a spill. The ministry's Spills Action Centre must be contacted in such an event.

- Since the removal or movement of soils may be required, appropriate tests to determine contaminant levels from previous land uses or dumping should be undertaken. If the soils are contaminated, you must determine how and where they are to be disposed of, consistent with *Part XV.1 of the Environmental Protection Act* (EPA) and Ontario Regulation 153/04, Records of Site Condition, which details the new requirements related to site assessment and clean up. Consideration of potential environmental contamination should be given following regulatory guidance where the project involves decommissioning of facilities. Please contact the appropriate MECP District Office for further consultation if contaminated sites are present.

- Where poles are being removed that have been chemically treated, we recommend that the proponent consider soil testing to determine the extent of any related soil contamination. Soil testing may be contingent on factors such as proximity to water bodies or wetlands, proximity to wells, locations where poles are being removed but not replaced, and the treatment chemicals used (i.e. chromated copper arsenate (CCA) or creosote). In the case of poles which have been treated with CCA or creosote, testing for arsenic, copper and creosote should be completed.

Servicing, Utilities and Facilities

- The report should identify any above or underground utilities in the study area such as transmission lines, telephone/internet, oil/gas etc. The owners should be consulted to discuss impacts to this infrastructure, including potential spills.

- The report should identify any servicing infrastructure in the study area such as wastewater, water, stormwater that may potentially be impacted by the project.

- Any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste must have an Environmental Compliance Approval (ECA) before it can operate lawfully. Please consult with MECP's Environmental Permissions Branch to determine whether a new or amended ECA will be required for any proposed infrastructure.

- We recommend referring to the ministry's environmental land use planning guides to ensure that any potential land use conflicts are considered when planning for any infrastructure or facilities related to wastewater, pipelines, landfills or industrial uses.

Mitigation and Monitoring

- Contractors must be made aware of all environmental considerations so that all environmental standards and commitments for both construction and operation are met. Mitigation measures should be clearly referenced in the report and regularly monitored during the construction stage of the project. In addition, we encourage proponents to conduct post-construction monitoring to ensure all mitigation measures have been effective and are functioning properly.

- Design and construction reports and plans should be based on a best management approach that centres on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of any impacted areas.

- The proponent's construction and post-construction effects monitoring strategies and programs must be documented in the report.

- The proponent must consider cumulative effects when planning projects. The assessment will include the proposed undertaking and any other proposed undertakings in the immediate project area where documentation is available (e.g. other environmental assessments).

Consultation

- The report must demonstrate how the consultation provisions of the Class EA have been fulfilled, including documentation of all stakeholder consultation efforts undertaken during the planning process. This includes a discussion in the report that identifies concerns that were raised and **describes how they have been addressed by the proponent** throughout the planning process. The report should also include copies of comments submitted on the project by interested stakeholders, and the proponent's responses to these comments (as directed by the Guide to Environmental Assessment Requirements for Electricity Projects to include full documentation).

- Please include the full stakeholder distribution/consultation list in the documentation.

Class EA Process

- If this project is a Master Plan: there are several different approaches that can be used to conduct a Master Plan, examples of which are outlined in Appendix 4 of the Class EA. The Master Plan should clearly indicate the selected approach for conducting the plan, by identifying whether the levels of assessment, consultation and documentation are sufficient to fulfill the requirements for Schedule B or C projects. Please note that any Schedule B or C projects identified in the plan would be subject to a Section 16 Order request under the *Environmental Assessment Act,* although the plan itself would not be. Please include a description of the approach being undertaken (use Appendix 4 as a reference).

- If this project is a Master Plan: Any identified projects should also include information on the MCEA schedule associated with the project.

- The report should provide clear and complete documentation of the planning process in order to allow for transparency in decision-making.

- The Class EA requires the consideration of the effects of each alternative on all aspects of the environment (including planning, natural, social, cultural, economic, technical). The report should include a level of detail (e.g. hydrogeological investigations, terrestrial and aquatic assessments, cultural heritage assessments) such that all potential impacts can be identified, and appropriate mitigation measures can be developed. Any supporting studies conducted during the Class EA process should be referenced and included as part of the report.

- Please include in the report a list of all subsequent permits or approvals that may be required for the implementation of the preferred alternative, including but not limited to, MECP's PTTW, EASR Registrations and ECAs, conservation authority permits, species at risk permits, MTO permits and approvals under the *Impact Assessment Act*, 2019.

- Ministry guidelines and other information related to the issues above are available at http://www.ontario.ca/environment-and-energy/environment-and-energy. We encourage you to review all the available guides and to reference any relevant information in the report.

Amendments to the EAA through the Covid-19 Economic Recovery Act, 2020

Once the report is finalized, the proponent must issue a Notice of Completion providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the proponent. The Notice of Completion must be sent to the appropriate MECP Regional Office email address (for projects in MECP Southwest Region, the email is eanotification.swregion@ontario.ca).

The public has the ability to request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. In addition, the Minister may issue an order on his or her own initiative within a specified time period. The Director (of the Environmental Assessment Branch) will issue a Notice of Proposed Order to the proponent if the Minister is considering an order for the project within 30 days after the conclusion of the comment period on the Notice of Completion. At this time, the Director may request additional information from the proponent. Once the requested information has been received, the Minister will have 30 days within which to make a decision or impose conditions on your project.

Therefore, the proponent cannot proceed with the project until at least 30 days after the end of the comment period provided for in the Notice of Completion. Further, the proponent may not proceed after this time if:

- a Section 16 Order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, or
- the Director has issued a Notice of Proposed order regarding the project.

Please ensure that the Notice of Completion advises that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Section 16 Order requests on those matters should be addressed in writing to:

Minister
Ministry of Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

and

Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto ON, M4V 1P5
EABDirector@ontario.ca

Ministry of the Environment, Conservation and Parks

Environmental Assessment Branch

1st Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax.: 416 314-8452

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des évaluations environnementales

Rez-de-chaussée
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

Ontario

Instructions for Providing Class EA Notices to the Ministry of the Environment, Conservation and Parks

The following protocol for providing Class EA notifications to the Ministry of the Environment, Conservation and Parks is in effect as of **May 1, 2018.** Important information is below. Please read carefully.

You must follow the process described below and submit an electronic version of the Notice and completed Project Information Form to the appropriate Regional EA Notification email address. These email addresses are provided below.

All Notices of Commencement and Completion are to follow this process. Please feel free to pass along this information to your colleagues. Thank you.

Notification Procedure:

The Ministry of the Environment, Conservation and Parks becomes aware of streamlined environmental assessments (e.g., class environmental assessment projects, electricity projects and waste management projects) through notifications by project owners. Notifying the ministry is an important step in the streamlined environmental assessment processes. As part of the ministry's ongoing efforts to improve processes and ensure the ministry has an opportunity to provide input on projects undergoing streamlined environmental assessments, the ministry has established dedicated email accounts in each regional office. These accounts will be used to receive notices as required in your class environmental assessment process along with a new "Project Information Form". As of May 1, 2018, proponents must use this new process.

4 Step Process for Submitting Notices for Streamlined EAs

To submit your notice, you must do the following:

1. **Download and complete the Project Information Form.** (The Form can be found here under "Streamlined EAs". It is an excel spreadsheet with columns that need to be filled out by the proponent. The form has been developed for ease of use (i.e. drop-down pick list for most fields). Instructions on filling out the form are contained in 2 tabs within the form itself).

2. **Create an email. The subject line of your email must include in this order: Project location, Type of streamlined EA, and Project name**

   For example:

   - York Region, MEA Class EA, Elgin Mills Rd East (Bayview to Woodbine)
   - Durham Region, Electricity Screening Process, New Cogeneration Station
   - City of Ottawa, Waste Management Screening Process, Landfill Expansion

3. **Attach the completed Project Information Form (in excel format) and a copy of your project notice (in PDF format) to the email.**

4. **Send by email to the appropriate ministry regional office:**

   Central Region – eanotification.cregion@ontario.ca

   Eastern Region – eanotification.eregion@ontario.ca

   Northern Region – eanotification.nregion@ontario.ca

   South West Region – eanotification.swregion@ontario.ca

   West Central Region – eanotification.wcregion@ontario.ca

Notes:

- The hyperlink to the MECP District Officer Locator website, can be used to assist with determining what ministry region your project is located.
- The minimum requirement is to send project initiation and completion notices (and where applicable, Revised Notice of Completion, Notice of Filing of Addendum, Statement of Completion). All other notices (e.g. Notice of PIC/OH) can be sent to the Regional email address but not required.
- If your project is located in more than one ministry region, you need to submit your notices to all appropriate regions.

Client's Guide to Preliminary Screening for Species at Risk

Ministry of the Environment, Conservation and Parks

Species at Risk Branch, Permissions and Compliance

DRAFT - May 2019

Table of Contents

1.0 Purpose, Scope, Background and Context

1.1 Purpose of this Guide

This guide has been created to:

- help clients better understand their obligation to gather information and complete a preliminary screening for species at risk before contacting the ministry,
- outline guidance and advice clients can expect to receive from the ministry at the preliminary screening stage,
- help clients understand how they can gather information about species at risk by accessing publicly available information housed by the Government of Ontario, and
- provide a list of other potential sources of species at risk information that exist outside the Government of Ontario.

It remains the client's responsibility to:

- carry out a preliminary screening for their projects,
- obtain best available information from all applicable information sources,
- conduct any necessary field studies or inventories to identify and confirm the presence or absence of species at risk or their habitat,
- consider any potential impacts to species at risk that a proposed activity might cause, and
- comply with the *Endangered Species Act* (ESA).

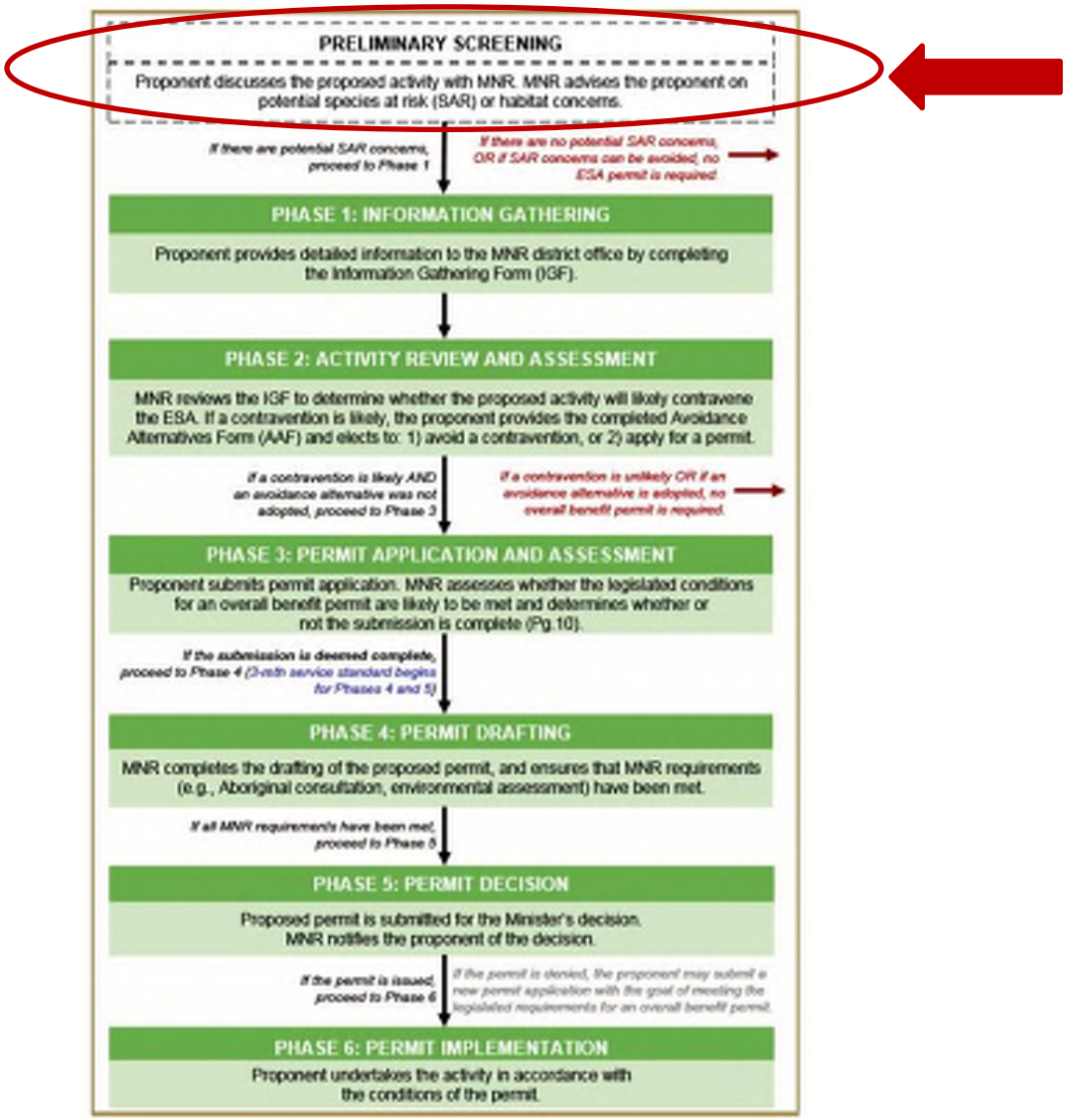
To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide, at a minimum, prior to contacting Government of Ontario ministry offices for further information or advice.

1.2 Scope

This guide is a resource for clients seeking to understand if their activity is likely to impact species at risk or if they are likely to trigger the need for an authorization under the ESA. It is not intended to circumvent any detailed site surveys that may be necessary to document species at risk or their habitat nor to circumvent the need to assess the impacts of a proposed activity on species at risk or their habitat. This guide is not an exhaustive list of available information sources for any given area as the availability of information on species at risk and their habitat varies across the province. This guide is intended to support projects and activities carried out on Crown and private land, by private landowners, businesses, other provincial ministries and agencies, or municipal government.

1.3 Background and Context

To receive advice on their proposed activity, clients must first determine whether any species at risk or their habitat exist or are likely to exist at or near their proposed activity, and whether their proposed activity is likely to contravene the ESA. Once this step is complete, clients may contact the ministry at SAROntario@ontario.ca to discuss the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. At this stage, the ministry can provide advice and guidance to the client about potential species at risk or habitat concerns, measures that the client is considering to avoid adverse effects on species at risk or their habitat and whether additional field surveys are advisable. This is referred to as the "Preliminary Screening" stage. For more information on additional phases in the diagram below, please refer to the *Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits* policy available online at https://www.ontario.ca/page/species-risk-overall-benefit-permits



2.0 Roles and Responsibilities

To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide prior to contacting Government of Ontario ministry offices for further information or advice.

Step 1: Client seeks information regarding species at risk or their habitat that exist, or are likely to exist, at or near their proposed activity by referring to all applicable information sources identified in this guide.

Step 2: Client reviews and consider guidance on whether their proposed activity is likely to contravene the ESA (see section 3.4 of this guide for guidance on what to consider).

Step 3: Client gathers information identified in the checklist in section 4 of this guide.

Step 4: Client contacts the ministry at SAROntario@ontario.ca to discuss their preliminary screening. Ministry staff will ask the client questions about the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. Ministry staff will also ask the client for their interpretation of the impacts of their activity on species at risk or their habitat as well as measures the client has considered to avoid any adverse impacts.

Step 5: Ministry staff will provide advice on next steps.

Option A: Ministry staff may advise the client they can proceed with their activity without an authorization under the ESA where the ministry is confident that:

- no protected species at risk or habitats are likely to be present at or near the proposed location of the activity; or
- protected species at risk or habitats are known to be present but the activity is not likely to contravene the ESA; or
- through the adoption of avoidance measures, the modified activity is not likely to contravene the ESA.

Option B: Ministry staff may advise the client to proceed to Phase 1 of the overall benefit permitting process (i.e. Information Gathering in the previous diagram), where:

- there is uncertainty as to whether any protected species at risk or habitats are present at or near the proposed location of the activity; or
- the potential impacts of the proposed activity are uncertain; or
- ministry staff anticipate the proposed activity is likely to contravene the ESA.

3.0 Information Sources

Land Information Ontario (LIO) and the Natural Heritage Information Centre (NHIC) maintain and provide information about species at risk, as well as related information about fisheries, wildlife, crown lands, protected lands and more. This information is made available to organizations, private individuals, consultants, and developers through online sources and is often considered under various pieces of legislation or as part of regulatory approvals and planning processes.

The information available from LIO or NHIC and the sources listed in this guide should not be considered as a substitute for site visits and appropriate field surveys. Generally, this information can be regarded as a starting point from which to conduct further field surveys, if needed. While this data represents best available current information, it is important to note that a lack of information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in more remote parts of the province. The absence of species at risk location data at or near your site does not necessarily mean no species at risk are present at that location. On-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats.

Information on the location (i.e. observations and occurrences) of species at risk is considered sensitive and therefore publicly available only on a 1km square grid as opposed to as a detailed point on a map. This generalized information can help you understand which species at risk are in the general vicinity of your proposed activity and can help inform field level studies you may want to undertake to confirm the presence, or absence of species at risk at or near your site.

Should you require specific and detailed information pertaining to species at risk observations and occurrences at or near your site on a finer geographic scale; you will be required to demonstrate your need to access this information, to complete data sensitivity training and to obtain a Sensitive Data Use License from the NHIC. Information on how to obtain a license can be found online at https://www.ontario.ca/page/get-natural-heritage-information.

Many organizations (e.g. other Ontario ministries, municipalities, conservation authorities) have ongoing licensing to access this data so be sure to check if your organization has this access and consult this data as part of your preliminary screening if your organization already has a license.

3.1 Make a Map: Natural Heritage Areas

The Make a Natural Heritage Area Map (available online at http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US provides public access to natural heritage information, including species at risk, without the user needing to have Geographic Information System (GIS) capability. It allows users to view and identify generalized species at risk information, mark areas of interest, and create and print a custom map directly from the web application. The tool also shows topographic information such as roads, rivers, contours and municipal boundaries.

Users are advised that sensitive information has been removed from the natural areas dataset and the occurrences of species at risk has been generalized to a 1-kilometre grid to mitigate the risks to the species (e.g. illegal harvest, habitat disturbance, poaching).

The web-based mapping tool displays natural heritage data, including:

- Generalized Species at risk occurrence data (based on a 1-km square grid),
- Natural Heritage Information Centre data.

Data cannot be downloaded directly from this web map; however, information included in this application is available digitally through Land Information Ontario (LIO) at https://www.ontario.ca/page/land-information-ontario.

3.2 Land Information Ontario (LIO)

Most natural heritage data is publicly available. This data is managed in a large provincial corporate database called the LIO Warehouse and can be accessed online through the LIO Metadata Management Tool at https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home. This tool provides descriptive information about the characteristics, quality and context of the data. Publicly available geospatial data can be downloaded directly from this site.

While most data are publicly available, some data may be considered highly sensitive (i.e. nursery areas for fish, species at risk observations) and as such, access to some data maybe restricted.

3.3 Additional Species at Risk Information Sources

- The Breeding Bird Atlas can be accessed online at http://www.birdsontario.org/atlas/index.jsp?lang=en
- eBird can be accessed online at https://ebird.org/home
- iNaturalist can be accessed online at https://www.inaturalist.org/
- The Ontario Reptile and Amphibian Atlas can be accessed online at https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas
- Your local Conservation Authority. Information to help you find your local Conservation Authority can be accessed online at https://conservationontario.ca/conservation-authorities/find-a-conservation-authority/

  Local naturalist groups or other similar community-based organizations
- Local Indigenous communities
- Local land trusts or other similar Environmental Non-Government Organizations
- Field level studies to identify if species at risk, or their habitat, are likely present or absent at or near the site.
- When an activity is proposed within one of the continuous caribou ranges, please be sure to consider the caribou Range Management Policy. This policy includes figures and maps of the continuous caribou range, can be found online at https://www.ontario.ca/page/range-management-policy-support-woodland-caribou-conservation-and-recovery

3.4 Information Sources to Support Impact Assessments

- Guidance to help you understand if your activity is likely to adversely impact species at risk or their habitat can be found online at https://www.ontario.ca/page/policy-guidance-harm-and-harass-under-endangered-species-act and https://www.ontario.ca/page/categorizing-and-protecting-habitat-under-endangered-species-act
- A list of species at risk in Ontario is available online at https://www.ontario.ca/page/species-risk-ontario. On this webpage, you can find out more about each species, including where is lives, what threatens it and any specific habitat protections that apply to it by clicking on the photo of the species.

4.0 Check-List

Please feel free to use the check list below to help you confirm you have explored all applicable information sources and to support your discussion with Ministry staff at the preliminary screening stage.

- ✓ Land Information Ontario (LIO)
- ✓ Natural Heritage Information Centre (NHIC)
- ✓ The Breeding Bird Atlas
- ✓ eBird
- ✓ iNaturalist
- ✓ Ontario Reptile and Amphibian Atlas
- ✓ List Conservation Authorities you contacted:_____

  _____
- ✓ List local naturalist groups you contacted:_____

  _____
- ✓ List local Indigenous communities you contacted:_____

  _____
- ✓ List any other local land trusts or Environmental Non-Government Organizations you contacted:_____

  _____
- ✓ List and field studies that were conducted to identify species at risk, or their habitat, likely to be present or absent at or near the site: _____

  _____
- ✓ List what you think the likely impacts of your activity are on species at risk and their habitat (e.g. damage or destruction of habitat, killing, harming or harassing species at risk):_____

  _____

Ministry of Citizenship and Multiculturalism

Heritage Planning Unit
Heritage Operations Branch
Citizenship, Inclusion and Heritage Division
5th Flr, 400 University Ave
Toronto, ON M5G 1S7
Tel.: 416-305-0757

Ministère des Affaires civiques et du Multiculturalisme

Planification relative au patrimoine
Opérations relatives au patrimoine
Division des affaires civiques, de l'inclusion et du patrimoine
5e étage, 400, av. University
Toronto, ON M5G 1S7
Tél.: 416-305-0757

September 10, 2024 EMAIL ONLY

Matthew Marcuccio, P.Eng.
Senior Environmental Engineer
J.L. Richards & Associates Limited
mmarcuccio@jlrichards.ca

MCM File	**:**	**0022225**
Proponent	**:**	**Municipality of North Grenville**
Subject	**:**	**Municipal Class Environmental Assessment – Notice of Commencement – Master Plan Approach 1**
Project	**:**	**Water and Wastewater Master Plan Update**
Location	**:**	**Municipality of North Grenville, United Counties of Leeds and Grenville**

Dear Matthew Marcuccio:

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Notice of Commencement for the above-referenced project.

MCM understands that master plans are long range plans which integrate infrastructure requirements for existing and future land use with environmental assessment planning principles. The Municipal Class Environmental Assessment (MCEA) outlines a framework for master plans and associated studies which should recognize the planning and design Process of this Class EA and should incorporate the key principles of successful environmental assessment planning identified in Section A.1.1. The master planning process will, at minimum, address Phases 1 and 2 of the Planning and Design Process of the MCEA.

This letter provides advice on how to incorporate consideration of cultural heritage in the above-mentioned master planning process by outlining the technical cultural heritage studies and the level of detail required to address cultural heritage in master plans. In accordance with the MCEA, cultural heritage resources should be identified early in the process in order to determine known and potential resources and potential impacts.

Master Plan Summary
The Municipality of North Grenville has initiated a Master Planning process in accordance with Approach 1 of the Municipal Engineers Association (MEA) Class EA to undertake an update to the Water and Wastewater Master Plan that was prepared in 2015.

The Master Plan will identify and assess options to improve the ability of North Grenville's water and wastewater systems to accommodate the current and future population within the Municipality. This Study is being conducted according to the requirements of Approach 1 of a Master Plan under the Ontario Municipal Class Environmental Assessment process (October 2000, as amended in 2015 and 2023).

Identifying Cultural Heritage Resources
MCM understands that the master plan would typically be done at a broad level of assessment thereby requiring more detailed investigations at the project-specific level. Therefore, a description of the existing conditions related to cultural heritage resources needs to be included in the master plan document.

Archaeological Resources
The existing conditions sub-section should indicate if the master plan includes areas of archaeological potential or not and acknowledge that archaeological assessments will be required for future project-specific projects. The proponents should refer to an archaeological management plan or a data sharing agreement, should they exist. In their absence, the Ministry's screening checklists can help determine whether archaeological assessments will be needed for subsequent project undertakings: *Criteria for Evaluating Archaeological Potential* and *Criteria for Evaluating Marine Archaeological Potential*.

A statement should be included that archaeological assessments are to be undertaken by an archaeologist licensed under the *Ontario Heritage Act* and that archaeological assessment reports must be submitted for MCM review prior to the completion of the environmental assessment and prior to any ground disturbance. Some municipalities may also elect to have a Stage 1 archaeological assessment undertaken for a master plan area.

Built Heritage Resources and Cultural Heritage Landscapes
MCM recommends that an Existing Conditions Report be undertaken by a qualified person, which will include a historical summary of the study area's development, identifying all known or potential built heritage resources and cultural heritage landscapes within the study area. The findings of the existing conditions report should be included in the existing conditions subsection of the master plan document.

Community input should be sought to identify locally recognized and potential cultural heritage resources. Sources include, but are not limited to, Municipal Heritage Committees, community heritage registers, historical societies and other local heritage organizations.

Cultural heritage resources are often of critical importance to Indigenous communities. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and any engagement with Indigenous communities should include a discussion about known or potential cultural heritage resources that are of value to them.

Subsequent Municipal Class EA Undertakings
The recommendations outlined above can be used in support of any future technical cultural heritage studies required for any Schedule B and C MCEA undertakings identified within the master planning area. Technical cultural heritage studies are to be undertaken by a qualified person who has expertise, recent experience, and knowledge relevant to the type of cultural heritage resources being considered and the nature of the activity being proposed. Please advise MCM whether any technical cultural heritage studies will be completed for this master plan and provide them to MCM before issuing a Notice of Completion.

Please note that the responsibility for administration of the *Ontario Heritage Act* and matters related to cultural heritage have been transferred from the Ministry of Tourism, Culture and Sport (MTCS) to the Ministry of Citizenship and Multiculturalism (MCM). Individual staff roles and contact information remain unchanged. Please continue to send any notices, report and/or documentation to both Karla Barboza and myself.

- Karla Barboza, Team Lead - Heritage | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-660-1027 | karla.barboza@ontario.ca
- Erika Leclerc, Heritage Planner | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-305-0757 | erika.leclerc@ontario.ca

Thank you for consulting MCM on this project. Please continue to do so through the master plan process and contact me for any questions or clarification.

Sincerely,

Erika Leclerc
Heritage Planner
Erika.leclerc@ontario.ca

Copied to: Nicholas Shepherd, Water & Wastewater Technologist, Municipality of North Grenville
Karla Barboza, Team Lead, Heritage Planning Unit, MCM

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with *Ontario Regulation 30/11* the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

Ministry of Natural Resources

Land Use Planning and Strategic Issues Section
Southern Region

Regional Operations Division
300 Water Street
Peterborough, ON K9J 3C7
Tel.: 705 761-4839

Ministère des Richesses naturelles

Section de l'aménagement du territoire et desquestions stratégiques
Région du Sud

Division des opérations régionales300, rue Water
Peterborough (ON) K9J 3C7
Tél. : 705 761-4839

August 8, 2024

To Matthew Marcuccio, P.Eng.
J.L. Richards & Associates Limited
203 - 863 Princess Street
Kingston, ON, K7L 5N4

SUBJECT: Notice of Study Commencement for North Grenville Water and Wastewater Master Plan Update

The Ministry of Natural Resources (MNR) received your Notice of Study Commencement on August 6, 2024. Thank you for circulating this to our office. Please note that we have not competed a screening of natural heritage or other resource values for the project at this time. This response, however, does provide information to guide you in identifying and assessing natural features and resources as required by applicable policies and legislation, as well as engaging with the Ministry for advice as needed.

Please also note that it is the proponent's responsibility to be aware of, and comply with, all relevant federal or provincial legislation, municipal by-laws or other agency approvals.

Natural Heritage

MNR's natural heritage and natural resources GIS data layers can be obtained through the Ministry's Land Information Ontario (LIO) website. You may also view natural heritage information online (e.g., Provincially Significant Wetlands, ANSI's, woodlands, etc.) using the Make a Map: Natural Heritage Areas tool.

We recommend that you use the above-noted sources of information during the review of your project proposal.

Natural Hazards

A series of natural hazard technical guides developed by MNR are available to support municipalities and conservation authorities implement the natural hazard policies in the Provincial Policy Statement (PPS). For example, standards to address flood risks and the potential impacts and costs from riverine flooding are addressed in the *Technical Guide River and Stream Systems: Flooding Hazard Limit (2002)*. We recommend that you consider these technical guides as you assess specific improvement projects that can be undertaken to reduce the risk of flooding.

Petroleum Wells & Oil, Gas and Salt Resources Act

There may be petroleum wells within the proposed project area. Please consult the Ontario Oil,

Gas and Salt Resources Library website (www.ogsrlibrary.com) for the best-known data on any wells recorded by MNR. Please reference the 'Definitions and Terminology Guide' listed in the publications on the library website to better understand the well information available. Any oil and gas wells in your project area are regulated by the *Oil, Gas and Salt Resource Act*, and the supporting regulations and operating standards. If any unanticipated wells are encountered during development of the project, or if the proponent has questions regarding petroleum operations, the proponent should contact the Petroleum Operations Section at POSRecords@ontario.ca or 519-873-4634.

Fish and Wildlife Conservation Act

Please note, that should the project require:

- The relocation of fish outside of the work area, a Licence to Collect Fish for Scientific Purposes under the *Fish and Wildlife Conservation Act* will be required.
- The relocation of wildlife outside of the work area (including amphibians, reptiles, and small mammals), a Wildlife Collector's Authorization under the *Fish and Wildlife Conservation Act* will be required.

Public Lands Act & Lakes and Rivers Improvement Act

Some Projects may be subject to the provisions of the *Public Lands Act* or *Lakes and River Improvement Act*. Please review the information on MNR's web pages provided below regarding when an approval is, or is not, required. Please note, *Lakes and Rivers Improvement Act* approval from the Ministry is not required for certain activities within the area of jurisdiction of a Conservation Authority. Please see the *Lakes and Rivers Improvement Act* administrative guide for more information and contact your local Conservation Authority where unsure if work is subject to regulation under the *Conservation Authorities Act*.

- For more information about the *Public Lands Act*: https://www.ontario.ca/page/crown-land-work-permits
- For more information about the *Lakes and Rivers Improvement Act*: https://www.ontario.ca/page/lakes-and-rivers-improvement-act-administrative-guide

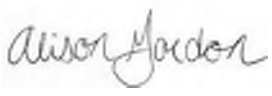
Provincial Plans

This project may lie within the boundary of one or more Provincial Plans. Provincial plans build upon the policy foundation for regulating land use and development established by the Provincial Policy Statement (PPS). Many provincial plans contain policies specific to infrastructure projects undergoing an Environmental Assessment. The provincial plans themselves should be consulted for the full policies and to understand how they apply to your specific project.

After reviewing the information provided, if you have not identified any of MNR's interests stated above, there is no need to circulate any subsequent notices to our office. If you have identified any of MNR's interests and/or may require permit(s) or further technical advice, please direct your specific questions to the undersigned.

If you have any questions or concerns, please feel free to contact me.

Best Regards,



Alison Gordon
Regional Planner, Land Use Planning and Strategic Issues Section,
Southern Region, Regional Operations Division,
Ministry of Natural Resources

Matthew Marcuccio

From: Kelly, Tate <Tate.Kelly@infrastructureontario.ca>
Sent: September 6, 2024 8:48 AM
To: Matthew Marcuccio; nshepherd@northgrenville.on.ca
Cc: Mike Finley; Sousa, Madeleine (IO); Abraham, Ernest (IO); Notice Review
Subject: Re: Notice of Study Commencement - The Municipality of North Grenville Water and Wastewater Master Plan Update
Attachments: 33023-000 North Grenville MP NOC_Final.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hello,

Thank you for circulating Infrastructure Ontario (IO) on the Notice of Study Commencement for the Municipality of North Grenville's Water and Wastewater Master Plan Update. As you may be aware, Infrastructure Ontario, the Ministry of Infrastructure, and the Ministry of the Solicitor General are in the planning stages for the future Eastern Ontario Correctional Complex which will be located at 51 Research Lane, at the northeast corner of County Road 44 and College Road, within the Master Plan Study Area. The Province and the Municipality of North Grenville have been working collectively to allocate and plan for adequate municipal water and wastewater services for the future Correctional Complex.

We welcome and appreciate the opportunity to be consulted throughout the process and ask that the anticipated demand from the future Correctional Complex be considered and incorporated into the updated Water and Wastewater Master Plan.

Please continue to include myself, Madeleine Sousa – IO, Project Manager, and Ernest Abraham – IO, Senior Manager (cc'd) on correspondence or project updates. We would be happy to schedule a meeting to discuss in more detail.

Kind regards,
Tate

Infrastructure Ontario

Tate Kelly, RPP, MCIP
Infrastructure Ontario
Senior Planner, Portfolio Planning & Pre-Construction Services

tate.kelly@infrastructureontario.ca
Mobile: 416.578.8783

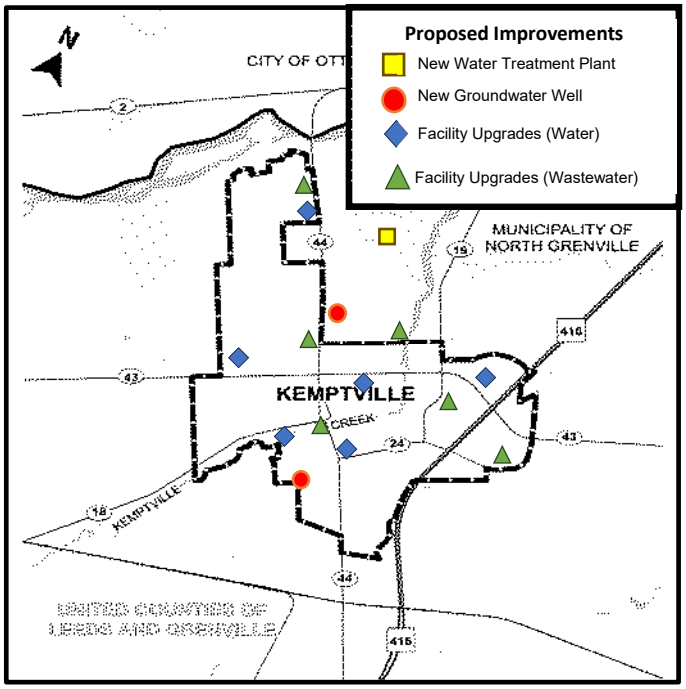
Notice of Public Information Centre

Municipality of North Grenville
Water and Wastewater Servicing Master Plan Update

The Municipality of North Grenville has initiated a Master Planning process in accordance with Approach 1 of the Municipal Engineers Association (MEA) Class Environmental Assessment (Class EA) to develop a Water and Wastewater Master Plan for the Municipality.

The Master Plan study assessed various options to improve the ability of North Grenville's water and wastewater systems to accommodate the current and future population growth within the Kemptville Urban Serviced Area.

Public and agency consultation is a key part of the Master Planning process. The Public Information Centre provides an opportunity for the public and stakeholder agencies to speak directly to the Project Team. The Public Information Centre will provide the recommended servicing solutions of the problems identified in the study.



Event Information	**Date:** Monday October 27, 2025 **Time:** 5:00 p.m. to 7:00 p.m. (Drop-in any time) **Location:** North Grenville Municipal Centre, Suite C (285 County Road 44, Kemptville ON K0G 1J0)

Additional Information:
Project information will also be provided on the Municipality's website at www.northgrenville.ca/projects. If you have any questions regarding the study, please contact one of the people listed below. We welcome your feedback.

Matthew Marcuccio, P.Eng.
Senior Environmental Engineer
J.L. Richards & Associates Limited
Phone: 1-343-803-4554
Email: mmarcuccio@jlrichards.ca

Nicholas Shepherd
Water & Wastewater Technologist
Municipality of North Grenville
Phone: 613-258-9569 ext. 179
Email: nshepherd@northgrenville.on.ca

This study is being conducted according to the requirements of Approach 1 of a Master Plan under the Ontario Municipal Class Environmental Assessment process (October 2000, as amended in 2015 and 2023). Please note that ALL personal information included in your request – such as name, address, telephone number and property location – is collected, maintained and disclosed by the Ministry of the Environment and Climate Change for the purpose of transparency and consultation. The information is collected under the authority of the Environmental Assessment Act or is collected and maintained for the purpose of creating a record that is available to the public as described in s.37 of the Freedom of Information and Protection of Privacy Act. Personal information you submit will become part of a public record that is available to the general public unless you request that your personal information remain confidential.

This Notice Was Issued on October 10th, 2025

Municipality of North Grenville
Water & Wastewater Servicing Master Plan

Public Information Centre

October 27, 2025

Welcome! Please sign in.

NORTH GRENVILLE WATER and WASTE WATER MASTER PLAN

The Municipal Class Environmental Assessment Master Plan Process

North Grenville

Class EA Process

The *Ontario Environmental Assessment (EA) Act*, R.S.O., 1990 requires that projects corresponding to municipal infrastructure projects, including roads, water, and wastewater projects follow an approved planning process set out in the Municipal Class EA document prepared by the Municipal Engineers Association (MEA).

Master Plan Process

Master Plans are conducted under the framework of the MEA Class EA Process. They are a planning tool that identifies infrastructure and other requirements for the existing and future land use, through the application of environmental assessment principles. The current Master Plan is intended to satisfy Phases 1 and 2 of the Municipal Class EA process (i.e., *Approach 1*).

Master Plan Approach 1

This approach concludes at the end of Phases 1 and 2. With this approach, the Master Plan is being completed at a **broad level of assessment** and may require further detailed assessment at the project-specific level.

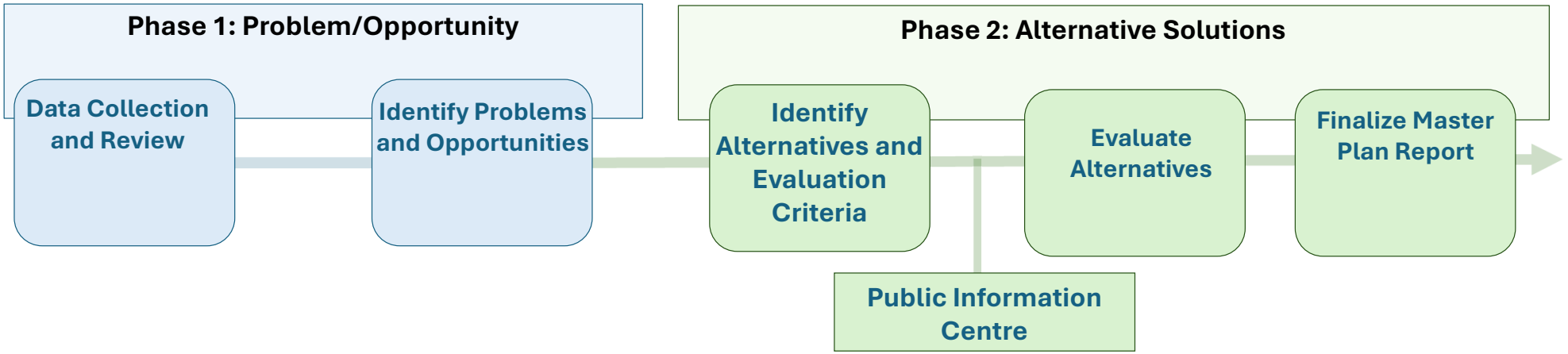
North Grenville Water and Wastewater Infrastructure Master Plan (Approach 1)

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

NORTH GRENVILLE WATER and WASTE WATER MASTER PLAN

The Municipal Class Environmental Assessment Master Plan Process

North Grenville



Phase 1 – Problem / Opportunity

- **Collect and review background documents.**
- Confirm future growth and planning projections.
- Establish a design basis and future water and wastewater demands.
- **Review water supply capacity.**
- **Review wastewater treatment capacity.**
- Confirm Problem and Opportunity Statement

Phase 2 – Alternative Solutions

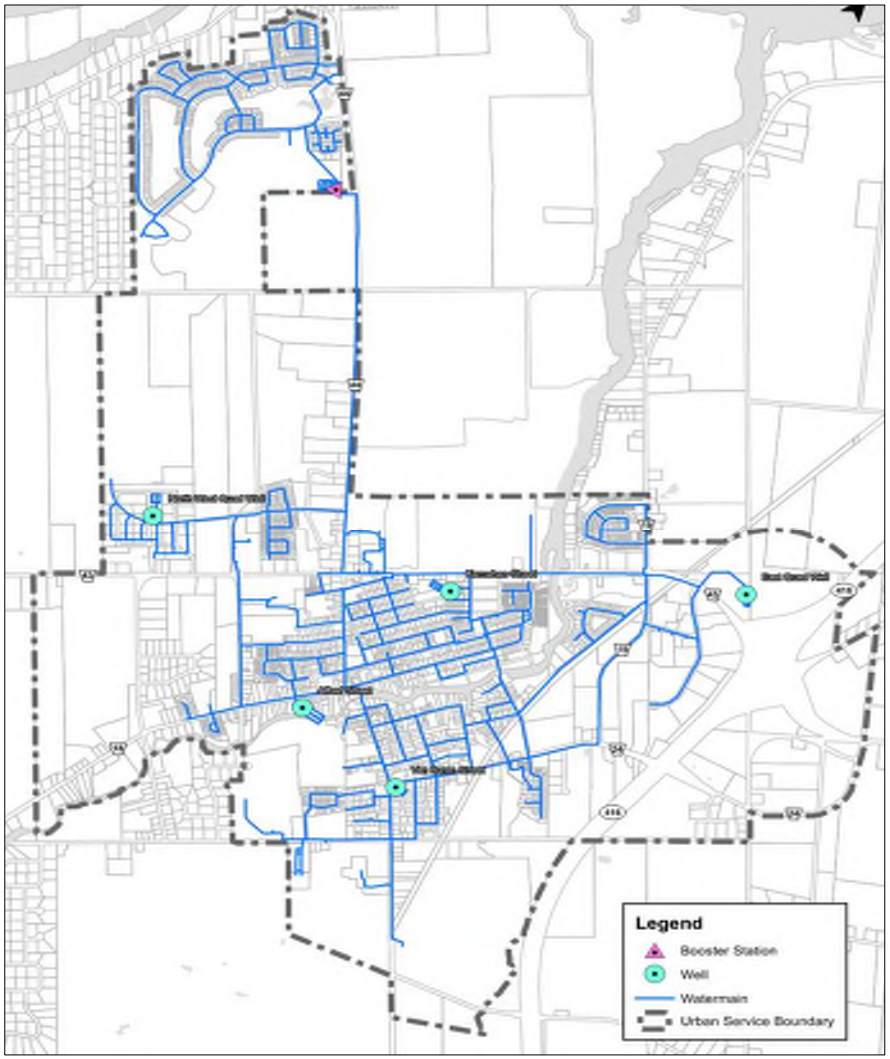
- Review **alternative water and wastewater servicing options** and **selecting preferred alternatives**.
- Prepare a draft Master Plan Report for review.
- Hold a **Public Information Center** to present the proposed alternatives and preferred solutions to the public.
- Re-evaluate servicing concepts based on comments received
- Filing the Master Plan for 30-day public review period.
- Issuing **Notice of Completion** and finalizing report

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

NORTH GRENVILLE
WATER and
WASTE WATER
MASTER PLAN

The Municipality of North Grenville
Existing Water Distribution System

North Grenville



Existing Water Distribution System

Consists of five (5) **groundwater wells**, six (6) **storage reservoirs** and six (6) **booster pumping stations**.

- Each drilled well is protected by a stainless-steel casing and equipped with a submersible well pump. Sodium hypochlorite is injected into the raw water for disinfection before it enters a storage reservoir for contact time. Duty/standby centrifugal pumps discharge the treated water into the distribution system
- Each facility is interconnected to help manage water pressure, storage, and flow more efficiently across different parts of the Urban Serviced Area.

Existing Well Sites:

- Alfred Street
- Van Buren Street
- Kernahan Street
- East Quadrant
- Northwest Quadrant

Existing Storage Reservoirs and Booster Pumping Stations:

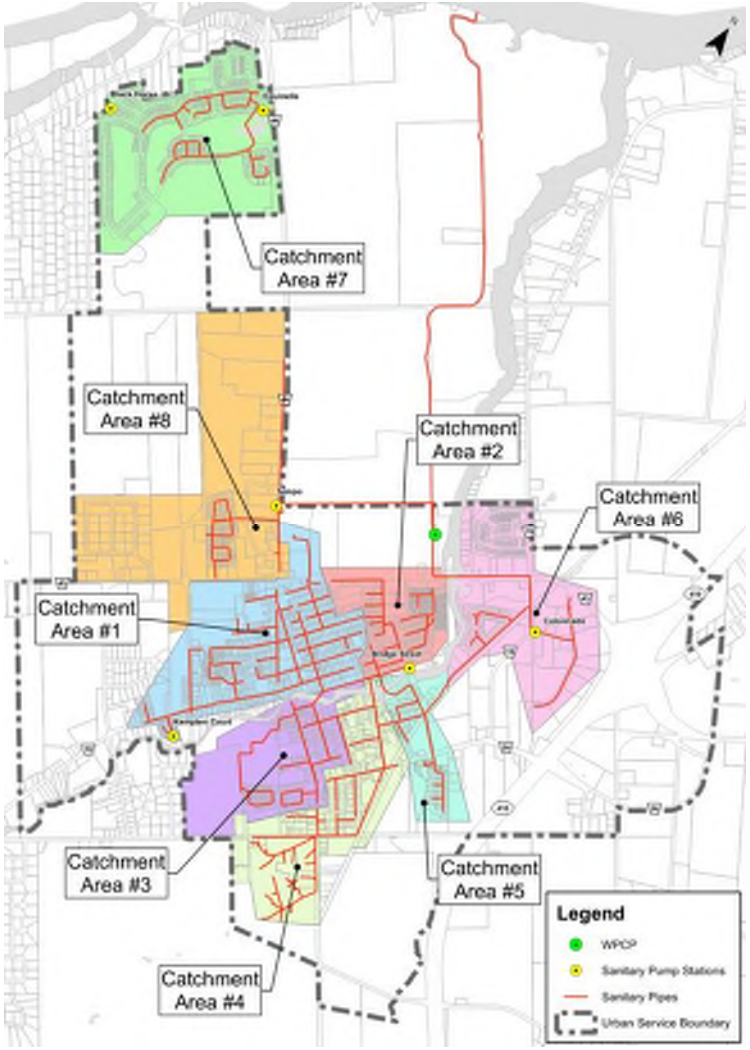
- Alfred Street
- Van Buren Street
- Kernahan Street
- East Quadrant
- Northwest Quadrant
- eQuinelle

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

NORTH GRENVILLE WATER and WASTE WATER MASTER PLAN

The Municipality of North Grenville Existing Wastewater System

North Grenville



Existing Wastewater System

Consists of several **catchment areas -** geographic regions or zones from which wastewater is collected and directed to a specific treatment facility.

It includes local **infrastructure to collect and transport sewage:**

- **Sanitary Pipes:** Transports collected wastewater to treatment plant, can be gravity fed or pressurized
- **Sanitary Pumping Stations (SPS):** Forcibly moves wastewater by adding pressure in areas where gravity fed piping is ineffective
- **Wastewater is transported to the Water Pollution Control Plant (WPCP) for treatment**.

Wastewater Collection at Catchment Area → **Wastewater Transportation Pipes and SPS** → **Wastewater Treatment at WPCP**

Existing Sanitary Pumping Stations (SPS):

- Bridge Street SPS
- eQuinelle SPS
- Tempo SPS
- Colonnade SPS
- Blackhorse SPS
- Kempten Court SPS

WPCP Capabilities:

- **Primary Treatment:** Removes solids and grit.
- **Secondary Treatment:** Uses biological processes to break down organic matter.
- **Tertiary Treatment**: Further cleans the water, removing nutrients and contaminants.

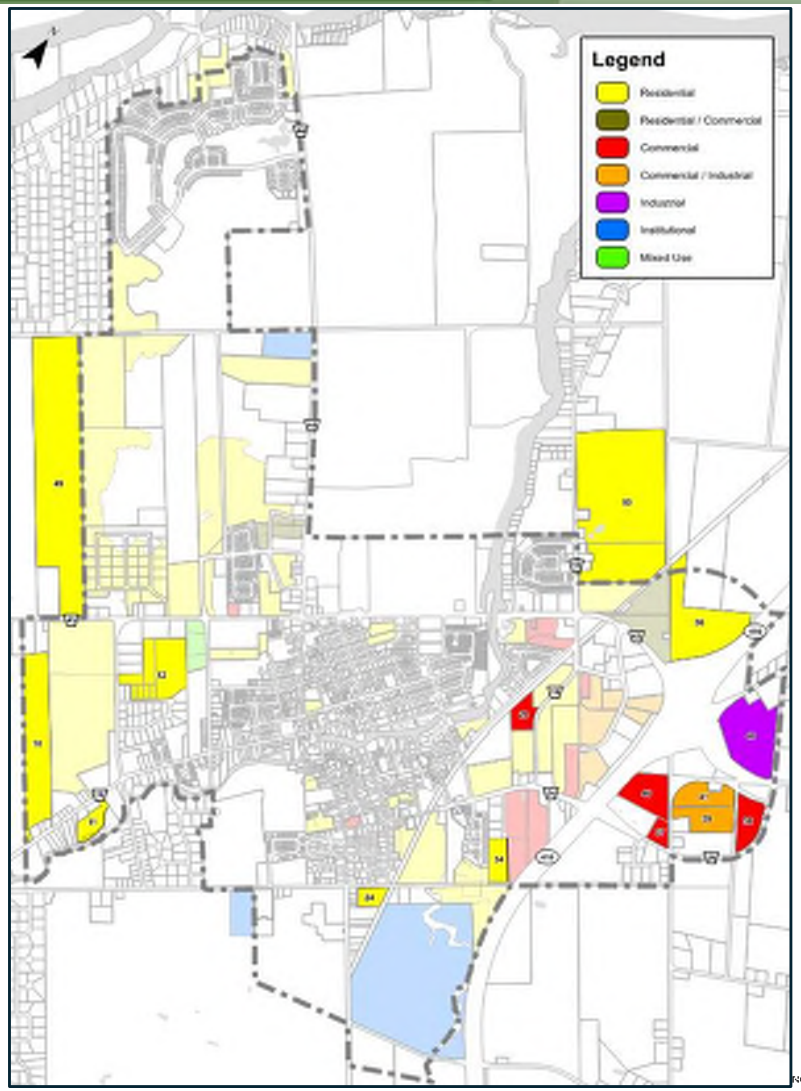
J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

NORTH GRENVILLE WATER and WASTE WATER MASTER PLAN

The Municipality of North Grenville Future Population Growth Projections

North Grenville

Projection Period	Population Estimate
Existing (2025)	7,386
Short-Term (0-5 Years; 2026-2031)	9,366
Mid-Term (5-10 Years; 2031-2036)	11,986
Long-Term (10-20 Years; 2036-2046)	22,401
Buildout (2046 +)	36,764



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Phase 1 Problem and Opportunity Summary

North Grenville

	Short –Term 0-5 years (2025-2031)	Mid–Term 5-10 years (2031-2036)	Long –Term 10-20 years (2036-2046)	Build –Out 20+ years (2046+)
Water Distribution	Upgrade select trunk watermains and pumping stations to supply minimum pressures and fire flows throughout Kemptville, and service new developments. Condition upgrades of select aged watermains.			
Water Storage	No storage deficits	573m^3 deficit	5,742m^3 deficit	12,814m^3 deficit
Water Supply (1)	No supply deficits	1,554m^3 deficit	7,419m^3 deficit	15,092m^3 deficit
Wastewater Conveyance (Curry St and Syphons)	Upgrades required.	Upgrades required.	Upgrades required.	Upgrades required.
Wastewater Pumping	Bridge Street SPS upgrade required.	Bridge Street SPS upgrade required.	Bridge Street SPS upgrade required.	Colonnade and Bridge Steet SPS upgrades required.
Wastewater Treatment (2)	No treatment deficits	No treatment deficits	3,453m^3 deficit	8,205m^3 deficit

Notes:

1)Water supply capacity with largest well out of service.
2)Wastewater Treatment rated capacity upon completion of ongoing upgrades

Problem and Opportunity Statement:

The community of Kemptville in the Municipality of North Grenville is anticipating increased development pressures over the next 20 years. The drinking water system consists of five groundwater wells and six storage reservoirs and one booster pumping station. The wastewater system consists of four pumping stations and a wastewater treatment plant.

There is an opportunity through the Master Planning process to review the water and wastewater systems holistically and develop a strategic plan of actions that can be implemented over a logical time period and in a prioritized fashion with the intended goal of addressing future servicing needs and ensuring appropriate performance and reliability of the water and wastewater systems in the 20-year planning horizon.

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NORTH GRENVILLE WATER and WASTE WATER MASTER PLAN

Overview of Evaluation Criteria

North Grenville

Natural Environment

- **Impact on natural areas may be affected** by construction, including ecosystems and wetlands.
- **Wildlife impacts** could occur, especially to aquatic and terrestrial species and their habitats.
- **Water Quality and Supply**

Climate Change Resiliency

- **Climate change may affect the project** through more rain, droughts, and extreme weather.
- **The project's impact on climate** includes greenhouse gas emissions and effects on natural carbon storage.
- **Resilience matters**, so the systems would be able to adapt to climate challenges and stay reliable over time.

Social & Cultural Heritage Environment

- **Cultural and heritage sites** may be affected, including archaeological areas and historic buildings.
- **Air and noise impacts** could occur during construction and operation.
- **Community effects** include changes to daily life, local businesses, and Indigenous lands or traditions.

Technical Feasibility

- **Constructability**, depending on site conditions and system complexity.
- **Operational flexibility as some systems are easier to run**, offering more flexibility and simpler operations.
- **Future expansion** should be considered to handle growing water demand.

Financial Considerations

- **Capital costs** refer to the upfront expenses of building the system.
- **Operating costs** include ongoing expenses for running and maintaining it.

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Potable Water

Future Water Supply Options

North Grenville

Option 1: Do Nothing

- **None** of the proposed alternatives are implemented

Option 2: Expand Existing Wells

- **Hydrogeological Investigations** to check if existing well sites can operate at a higher capacity
- **Investigations can include** pump tests of the well to confirm yield, extending a well deeper into the aquifer, installing a second well, etc.
- **May only yield a small increase in capacity,** unlikely to address projected demands on its own.

Not recommended for detailed evaluation on its own but could support other solutions as part of a larger plan.

Option 3: Develop New Wells

- **Build a new well** by choosing a site, testing it, drilling, and adding treatment systems and watermain connections.
- **Groundwater is reliable** but needs long-term monitoring to stay resilient against climate change.
- **Several new wells are needed** to meet future demand, which requires permits, studies, and careful planning to ensure reliable and sustainable water supply.

Option 4: New Surface Water Treatment Plant

- **Build a new water treatment plant** by choosing a site, constructing the building, and installing systems to clean and move water.
- **Use the Rideau River** as a possible water source, but more studies are needed to confirm if it's sustainable minimizes environmental impacts.
- **This option needs permits and studies**, and may take years to complete, so it might not solve short-term water needs.

Option 5: Hybrid Servicing Strategy

- **Investigate expansion** of existing wells.
- **Add new wells** to meet short-term water needs while planning for future growth.
- **Build a water treatment plant** using the Rideau River to supplement the existing system, or replace the groundwater system entirely.
- **This combined approach** gives flexibility for both immediate and long-term water supply, but needs permits, studies, and time to complete.

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Potable Water

Water Supply Options Evaluation

North Grenville

Criteria	Option 1: Do Nothing	Option 3: Develop New Wells	Option 4: New Surface Water Treatment Plant	Option 5: Hybrid Servicing Strategy
Natural Environment	No impact on water quality or quantity.	It is expected the local aquifer can support additional water supply from some new well(s) based on the available information, but additional studies are required to assess sustainability for long term or buildout flow demands.	Additional studies required to assess if surface water can support a new WTP.	It is expected the local aquifer can support additional water supply from a new well(s) based on the available information. Additional studies required to assess if surface water can support a new WTP.
Evaluation	No Impact	Slight Negative Impact	Slight Negative Impact	Slight Negative Impact
Climate Change Resiliency	Makes the potable water infrastructure vulnerable to impacts of climate change (e.g., drought conditions).	Less infrastructure to develop and maintain water supply, which results in the least GHG emissions of the options. Increases redundancy by developing additional wells. Aquifer is expected to remain a reliable source but reliance on groundwater limits the system's resiliency.	Larger infrastructure produces more GHG emissions from long-term operations and construction. The WTP will allow for more resiliency in the water supply system.	Larger infrastructure produces more GHG emissions from long-term operations and construction. While Groundwater wells are potentially vulnerable to impacts of climate change, the WTP will allow for more resiliency in the water supply system.
Evaluation	Slight Negative Impact	Slight Negative Impact	Slight Positive Impact	Slight Positive Impact
Social, Cultural, Heritage Environment	No impacts on social, cultural, and heritage resources, air quality, or the community. No construction or operation impacts.	Lower individual impacts for each well site on social, cultural, and heritage resources, air quality, or the community. Lower construction or operation impacts for each well site. However, impacts increase as more wells are developed.	Impacts on social, cultural, and heritage resources, air quality, or the community. Possible construction or operation impacts.	Impacts on social, cultural, and heritage resources, air quality, or the community. Possible construction or operation impacts.
Evaluation	No Impact	Slight Negative Impact	Strong Negative Impact	Strong Negative Impact
Technical Feasibility	Will not be able to supply water for mid-term growth and beyond.	Several new well sites are required to supply water for long term growth, increasing O&M demands. Easily integrated into existing distribution system, but new wells need to be located to avoid interferences with existing sites.	Will be able to supply water for mid-term growth and beyond. Challenging to integrate WTP into the existing distribution system. A blended system may require additional treatment measures.	Will be able to supply water for mid-term growth and beyond. New wells are easily integrated into the existing distribution system. WTP will be challenging to integrate into the existing distribution system. A blended system may require additional treatment measures.
Evaluation	Strong Negative Impact	Slight Negative Impact	Strong Negative Impact	Slight Negative Impact
Financial Considerations	No capital costs. Inaction may lead to high financial impacts in the future.	Lower initial capital and operational costs but will increase as more wells are developed.	High capital and operational costs.	Highest capital and operational costs.
Evaluation	Slight Negative Impact	Strong Negative Impact	Strong Negative Impact	Strong Negative Impact
Overall Evaluation	Not Preferred	Not Preferred	Not Preferred	**Preferred**

Potable Water

Future Water Storage Options

North Grenville

Option 1: Do Nothing

- **None** of the proposed alternatives are implemented

Option 2: Expand Water Storage

- **Install new drinking water storage tanks** at **existing well sites,** and at **new well sites** to support future growth and improve system reliability.
- **East Quadrant and Northwest Quadrant well sites** are already set up to accommodate a second storage tank.
- **At-grade reservoirs** are preferred for easier maintenance and integration with the existing system.

Option 3: New Elevated Tank

- **Build an elevated water tank** to centralize water supply and storage. Well sites would pump directly to fill the elevated tank.
- Elevated tank water level sets the pressure in the system, maintaining it without the need extra pumps.
- **Lower maintenance needs**, and simpler operation to maintain system pressures.
- **Not readily compatible** with current water distribution system. Major upgrades would be needed to centralize water supply to the new tower.

Option 4: Hybrid Servicing Strategy

- **Add ground level water storage tanks** at new and existing well sites to support current and future water needs.
- **Initiate additional studies to plan for long-term storage**, including assessing the potential for an elevated tank.
- **Provides flexibility** to meet near-term growth while preparing for future demand and system upgrades.

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Potable Water

Water Storage Options Evaluation

North Grenville

Criteria	Option 1: Do Nothing	Option 2: Expand Water Storage	Option 3: New Elevated Tank	Option 4: Hybrid Storage Strategy
Natural Environment	No impact on water quality or quantity.	Some impact due to new construction.	Some impact due to new construction.	Some impact due to new construction.
Evaluation	No Impact	Slight Negative Impact	Slight Negative Impact	Sight Negative Impact
Climate Change	Leaves Kemptville potable water system vulnerable to impacts of climate change (ex. droughts).	Expanded infrastructure makes community more resilient.	New infrastructure makes community more resilient. Lower GHG emissions from less energy to maintain system pressure	Expanded infrastructure makes community more resilient.
Evaluation	Strong Negative Impact	Slight Positive Impact	Strong Positive Impact	Strong Positive Impact
Social & Cultural Heritage Environment	No impacts on social, cultural heritage resources, air quality, or the community. No construction or operation impacts.	Some impacts on social, cultural, and heritage resources, air quality, or the community. Some construction impacts.	High impacts on social, cultural, and heritage resources, air quality, or the community. High construction impacts.	Some impacts on social, cultural, and heritage resources, air quality, or the community. Some construction impacts.
Evaluation	No Impact	Slight Negative Impact	Strong Negative Impact	Slight Negative Impact
Technical Feasibility	Will not be able to support mid-term growth demands.	Improves water distribution system. Size of storage reservoirs may be restricted by property availability. Easy to maintain. Easy to integrate into current water distribution system	Improves water distribution system. Requires extensive modification to integrate existing system to a centralized location. But once established, operation of pumps is simplified.	Improves water distribution system. Offers Municipality flexibility to address near-term needs while determining overall storage strategy for the future.
Evaluation	Strong Negative Impact	Slight Positive Impact	Slight Negative Impact	Strong Positive Impact
Financial	No capital costs. Inaction may lead to high financial impacts in the future from system failures.	Lower individual capital cost for each storage reservoir installation. Low Operational costs	High capital costs to construct elevated tank and modify existing distribution system. Operational costs are lowest of all options.	High capital cost depending on long-term storage strategy selected.
Evaluation	Slight Negative Impact	Slight Negative Impact	Strong Negative Impact	Slight Negative Impact
Overall Evaluation	Not Preferred	Not Preferred	Not Preferred	**Preferred**

NORTH GRENVILLE WATER and WASTE WATER MASTER PLAN

Potable Water

Future Water Distribution Analysis

North Grenville

How is Potable Water Currently Distributed ?

Watermains are large underground pipes that carry clean drinking water from treatment plants to homes, businesses, and fire hydrants. They are part of the city's water supply system and help make sure water is available where it's needed.

Problem / Opportunity

Problem: With the new development in the community, the existing watermain system will need to be upgraded to compensate for additional demand.

Opportunity: Additional watermains and watermain support infrastructure will be installed.

Proposed Upgrades:

Short Term (2026 -2031)	• Watermain Condition and Growth Upgrades • Duty Pump Upgrades
Mid Term (2031 -2036)	• Watermain Condition and Growth Upgrades • Duty Pump Upgrades • Possible Decommissioning of eQuinelle BPS to remove isolated pressure zone.
Long Term (2036 -2046)	• Watermain Condition and Growth Upgrades • Duty Pump Upgrades
Build-Out (2046+)	• Watermain Condition and Growth Upgrades • New Watermain Crossing Hwy 416 for watermain looping to service developments east of Hwy 416.

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Potable Water

Proposed Implementation Plan

North Grenville

Project Type	Project	Short-Term (0-5 years)	Mid-Term (5-10 years)	Long Term (10-20 years)	Buildout (20+ years)
Water Distribution	Northwest Quad Duty Pump 2 Upgrade	$1M	-	-	-
	Kernahan Duty Pump 2 Upgrade	$1M	-	-	-
	East Quad Duty Pump 2 Upgrade		$1M	-	-
	Decommissioning eQuinelle BPS	-	$575,000	-	-
	Alfred Duty Pump 2 Upgrades	-	-	$1M	-
	Van Buren Duty Pump 2 Upgrade	-	-	$1M	-
	Highway 416 Crossing (Open Cut Segment)	-	-	-	$2M
	Highway 416 Crossing (Trenchless Segment)	-	-	-	$3M
Water Supply	Test well drilling and pump test – Well site #1	-	$500,000	-	-
	New Well site #1 installation	-	$5M	-	-
	Test well drilling and pump test – Well site #2	-	-	$500,000	-
	New Well site #2 installation	-	-	$5M	-
	New Surface Water Treatment Plant and intake pipe from Rideau River Supplement existing supply; or Supply entire buildout demand	-	-	 $48M, or $75M	-
Water Storage	New above grade reservoir at new well site #1	-	$2M	-	-
	Additional above grade Reservoir at East Quad well site	-	-	$1.5M	-
	Additional above grade Reservoir at Northwest Quad well site	-	-	$1.5M	-
	New above grade reservoir at new well site #2	-	-	$2M	-
Studies	Exploratory Studies to expand existing Well capacities (all five well sites)	$1M	-	-	-
	Schedule 'B' Class EA to establish new well locations	$300,000	-	-	-
	Schedule 'C' Class EA to construct a new Surface Water Treatment Plant	-	$400,000	-	-
	Schedule 'B' Class EA to review future water storage strategies	-	$300,000	-	-
	Geotechnical feasibility study for crossing Highway 416.	-	-	-	$200,000
	Schedule 'B' class EA for crossing Highway 416	-	-	-	$200,000
TOTAL		**$ 3.3M**	**$ 9.8M**	**$ 60.5M - $ 87.5M**	**$ 5.4M**

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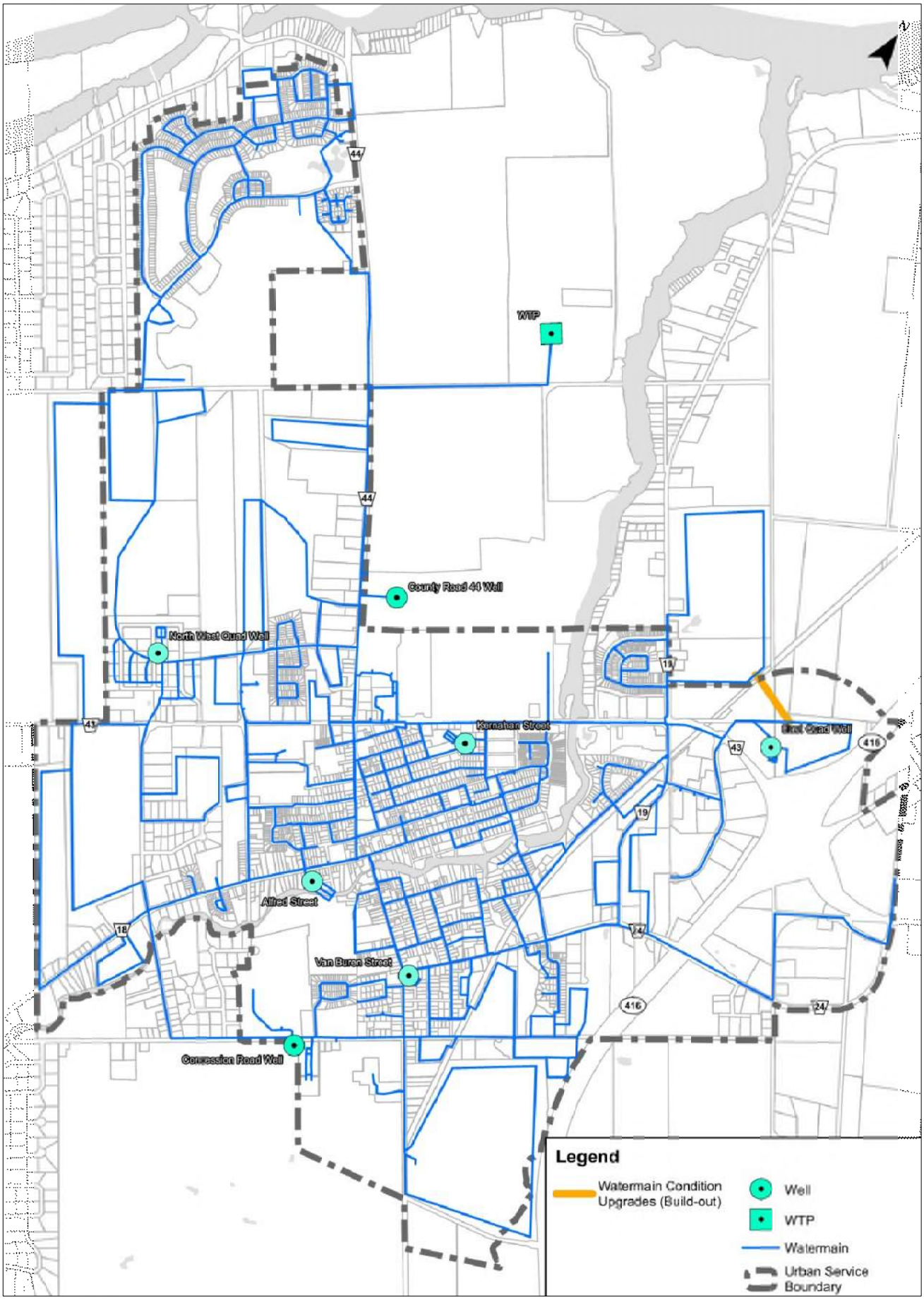
Potable Water Distribution Projections (Build-out)



Wastewater

Future Wastewater Treatment Options

North Grenville

Option 1: Do Nothing

- **None** of the proposed alternatives are implemented

Option 2: Optimize WPCP Capacity

- **Improve the existing wastewater plant** by optimizing how it runs, without expanding it.
- **Strategies include** process modeling, optimizing chemical usage, and testing processes above their rated capacities.
- Capacity gains unlikely to meet long-term needs.
- Not recommended on its own but could support other solutions as part of a larger plan.

Option 3: Expansion of Existing WPCP

Option 3A: Expand Existing Plant

- **Expand the WPCP** to increase capacity to support long-term needs.
- **Upgrades can include** additional processes, as well as retrofitting existing processes with newer technologies to boost treatment performance.

Option 3B: Expand + Optimize Existing Plant

- **Optimize and expand plant** to increase capacity to support long-term needs.
- **Optimizing treatment processes** can help handle more flow with existing infrastructure and reduce the size of upgrades

Option 4: Additional Treatment Plant

Option 4A: New Plant in New Location

- **Build a second treatment plant** to handle future demand beyond the current WPCP capacity.
- **Site selection and approvals** are needed, with careful review of environmental, cultural, and community impacts.
- **Splitting flow between two plants** could support growth but adds maintenance needs for operating both facilities.

Option 4B: New Plant + Optimize Existing

- **Build a treatment plant** and **optimize the existing one** to support long-term needs.
- **Optimizing existing processes** helps to reduce the size and cost of the new facility.

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Wastewater

Wastewater Treatment Option Evaluation

North Grenville

Criteria	Option 1: Do Nothing	Option 3a: Expand Existing WWTP	Option 3b: Expand and Optimize Existing WWTP	Option 4a: Additional Treatment Plant in New Location	Option 4a: Additional Treatment Plant in New Location and Optimize Existing WPCP
Natural Environment	Negative impact on environment due to inability to treat high wastewater flows.	Will improve system's ability to treat wastewater flows and limit bypasses. Reduced environmental impact in comparison to other options.	Will improve system's ability to treat wastewater flows and limit bypasses. Optimization to minimize the footprint of WPCP expansion would further reduce environmental impacts.	Will improve system's ability to treat wastewater flows and limit bypasses. Potential environmental impact due to construction for new facility. Requires additional investigations to assess new plant site and discharge location.	Will improve system's ability to treat wastewater flows and limit bypasses. Potential environmental impact due to construction for new facility. Requires additional investigations to assess new plant site and discharge location. Optimization of existing WPCP may reduce footprint of new plant.
Evaluation:	Strong Negative impact	Slight Positive Impact	Strong Positive Impact	Slight Negative impact	Strong Negative impact
Climate Change	Makes Kemptville's wastewater infrastructure vulnerable to impacts of climate change (ex. Floods resulting in bypasses).	Improved infrastructure makes community more resilient. Less GHG production from facility expansions.	Improved infrastructure makes community more resilient. Least GHG production from smaller expansion footprints.	Additional infrastructure makes community more resilient. Some GHG production from new facility.	Additional infrastructure makes community more resilient. Some GHG production from new facility.
Evaluation:	Strong Negative Impact	Slight Negative Impact	Slight Positive Impact	Slight Negative Impact	Slight Negative Impact
Social & Cultural Heritage Environment	Bypasses due to high flows impact the community, air quality, and operation. Limited capacity restricts population growth.	Municipality-owned land adjacent to WCPC available for expansion. Some construction or operation impacts.	Municipality-owned land adjacent to WCPC available for expansion. Some construction or operation impacts.	Higher impacts on social, cultural heritage resources, air quality, or the community. Higher construction or operation impacts.	Higher impacts on social, cultural heritage resources, air quality, or the community. Higher construction or operation impacts.
Evaluation:	Strong Negative Impact	Slight Negative Impact	Slight Negative Impact	Strong Negative Impact	Strong Negative Impact
Technical Feasibility	Will not be able to support long-term growth.	Will be able to support long-term growth.	Will be able to support long-term growth. Optimization can reduce extent of expansions required.	Will be able to support long-term growth. Challenging to integrate into the existing wastewater collection system.	Will be able to support long-term growth. Challenging to integrate into the existing wastewater collection system.
Evaluation:	Strong Negative Impact	Slight Positive Impact	Strong Positive Impact	Slight Negative Impact	Slight Negative Impact
Financial	No capital costs. Inaction may lead to high financial impacts in the future.	Higher capital and operational costs.	Higher capital and operational costs. Optimization may reduce cost of new infrastructure.	Highest capital and operational costs.	Highest capital and operational costs. Optimization may reduce cost of new infrastructure
Evaluation:	Slight Negative Impact	Slight Negative Impact	Slight Negative Impact	Strong Negative Impact	Strong Negative Impact
Overall Evaluation:	Not Preferred	Not Preferred	**Preferred**	Not Preferred	Not Preferred

NORTH GRENVILLE WATER and WASTE WATER MASTER PLAN

Wastewater

Future Wastewater Collection Analysis

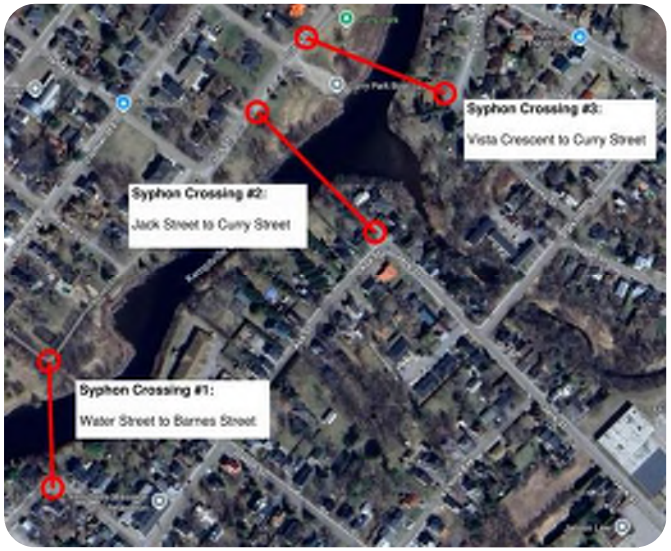
North Grenville

How is Wastewater Currently Distributed ?

Sanitary Sewers:
Underground pipes that carry wastewater by gravity from homes, businesses, and buildings to a treatment plant.

Sanitary Pumping Station (SPS):
A facility that pushes wastewater uphill or across long distances when it can't flow by gravity alone.

Syphon Crossing:
A Syphon Crossing allows for wastewater to flow under pressure to pass under a water body.



Problem/Opportunity

Problem : Capacity of some existing pumping stations, syphons and sanitary sewage lines will be insufficient to meet future wastewater demand.

Opportunity : Select pumping stations and sanitary sewers will be upgraded. The aging syphons will be upgraded and twinned to improve wastewater conveyance.

Proposed Upgrades:

Short Term (2026 -2031)
- Bridge Street SPS expansion
- Curry Street Sewer Upgrades
- Jack Street Syphon Replacement and Twinning

Mid Term (2031 -2036)
- Water Street Syphon Replacement and Twinning

Long Term (2036-2046)
- Vista Crescent Syphon Replacement and Twinning

Build-Out (2046+)
- Colonnade SPS Expansion and new forcemain.
- New SPS and forcemain to service development east of Hwy 416.

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Wastewater

Proposed Implementation Plan

North Grenville

Project Type	Project	Short-Term (0-5 years)	Mid-Term (5-10 years)	Long Term (10-20 years)	Buildout (20+ years)
Wastewater Treatment	WPCP Optimization and Expansion – Long Term	-	-	$130M	-
	WPCP Optimization and Expansion – Buildout	-	-	-	$175M
Wastewater Pumping	Bridge Street SPS (new SPS)	$16M	-	-	-
	Colonnade SPS (new SPS)	-	-	-	$12.5M
	New SPS – East of Highway 416	-	-	-	$3M
Wastewater Collection	Curry Street Sewer - Midway of James Street and Parliament Street (SAMH-10004 to SAMH-10003 and SAMH-10003 to SAMH-10002)	$250,000	-	-	-
	Replacement and Twinning Syphon - Jack Street to Curry Street (Catchment Area #4)	$9.8M	-	-	-
	Replacement and Twinning Syphon - Water Street to Barnes Street (Catchment Area #3)	-	$7M	-	-
	Replacement and Twinning Syphon - Vista Crescent to Curry Street (Catchment Area #5)	-	-	$14M	-
	New Forcemain from New SPS to County Road 19 (Open Cut Segment)	-	-	-	$6M
	New Forcemain from New SPS to County Road 19 (Trenchless Segment crossing Highway 416)	-	-	-	$3M
	New Forcemain – Colonnade SPS to WPCP	-	-	-	$4.5M
Studies	Flow Monitoring Program - Curry Street and Syphons	$100,000			
	Trunk Sewer Model Development	$150,000			
	Schedule 'B' Class EA for Bridge St SPS Expansion	$250,000	-	-	-
	Schedule 'C' Class EA for WPCP Expansion	-	$350,000	$350,000	-
	Schedule 'B' Class EA for New SPS and Forcemain Crossing of Highway 416	-	-	-	$250,000
	Geotechnical feasibility study for crossing Highway 416.	-	-	-	$200,000
	Schedule 'B' Class EA for Colonnade SPS Expansion	-	-	-	$250,000
TOTAL		**$26.55M**	**$7.35M**	**$144.35M**	**$204.7M**

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Future Steps and Community Engagement

North Grenville

1

October 2025: Collect and address comments from Public Information Centre.

2

November 2025: Finalize recommendations of the Phase 2 Master Plan.

3

November 2025: Issue Notice of Completion and place Master Plan on public record for 30 days.

4

Winter/Spring 2026: Municipality commences further studies selected from Master Plan recommendations

Comments and Concerns?

For More Information:

To provide comments, preserve appeal rights, and stay updated, please visit:

www.northgrenville.ca/projects

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Municipality of North Grenville Water and Wastewater Servicing Master Plan
Public Information Centre

October 27, 2025

Sign-in Sheet

Please Print Clearly

Name	Address	Postal Code	Email	Telephone
PETER FRIEDRICHS	[redacted]			
MIKE ELLWOOD				
Donald Thomson				
Gilles Boisebois				
Demetrius Yannaulopsulos				
Louise Huang				
Stef Kaminski				
Joe Bennett				
S. Hunt.				
Andrew Beverdge				

Memo

SUBJECT
Preliminary Growth Management Assessment: Municipality of North Grenville Water and Wastewater Masterplan

DATE
November 13, 2025

DEPARTMENT
Real Estate, Economics and Planning

COPIES TO

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TO
JL Richards, Municipality of North Grenville

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Executive Summary

Arcadis Professional Services (Canada) Inc., (Arcadis) was retained by LA Developments Inc. and Lioness Developments (the "Clients") to evaluate the population and employment projections used in the Municipality of North Grenville's (the "Municipality") Water and Wastewater Servicing Master Plan (Servicing Master Plan) prepared by J.L. Richards & Associates Limited (J.L. Richards) with those prepared by KPMG LLP (KPMG) in 2023 to inform the Municipality's growth projections through to 2046. Given that the Municipality of North Grenville is in the midst of an ongoing long-term municipal strategy planning for growth, definitive population and employment growth projections for Kemptville cannot be established at this time with the available data.

Below is our summary of findings:

- **Limitations of Using Historical Permit Data for Future Housing Allocation:** Building permits from 2016-2021 were used to determine the allocation of units within and outside the Urban Serviced Areas. Relying on historical trends to predict future development may lead to misallocation of future growth within the Urban Serviced Area, impacting infrastructure needs. Further clarification is needed from the Municipality to determine when and where growth will occur.
- **Potential Overstatement of Projected Population Due to Inclusion of Residential Supply:** J.L. Richards' study includes the potential population accommodated on residential land holdings and expansion areas in addition to KPMG's original population projections. The population that may be accommodated on residential land holdings and expansion areas should be considered as an assumption of residential capacity rather than a forecast of the Municipality's population growth.
- **Uncertainty in Expansion Area Potential:** J.L. Richards' conservative approach of assuming high-density residential development within expansion areas may overstate future servicing and infrastructure requirements, potentially resulting in unnecessary fiscal impacts for the Municipality. Additionally, potential

employment that could be associated with high-density development in these expansion areas has not been addressed.

- **Absence of Employment Forecast:** While J.L. Richards acknowledges the development of future commercial, institutional and industrial on existing land supply, further clarification of the assumptions and methodology used by the consultant is required to understand the projected population-related and employment land within Kemptville.
- **Appendix A:** Contains specific comments regarding inconsistencies, missing information, and incorrectly displayed figures in the Master Plan that may affect the accuracy of portions of the analysis and reflect a need for further review and updated data once available.

Recommendation

The completion of the Servicing Master Plan in advance of the ongoing United Counties of Leeds and Grenville Growth Management Strategy process may be premature as the findings of the land needs assessment should inform the findings of the servicing study. It is recommended that North Grenville Water and Wastewater Master Plan not be finalized but rather be continually updated to reflect the Growth Management Strategy, so that plans are based on the most current land needs and growth forecasts.

Sincerely,
Arcadis Professional Services (Canada) Inc.

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Appendix A

- The Master Plan does not consider that Municipality of North Grenville has imposed development restrictions due to lack of capacity, affecting Oxford Village (OV) Phase 1 findings and Short-Term (2026-2031) findings.
- Population projections are understated when looking at Tempo SPS Constraints, resulting in lower flows reported. There is also no medium or long-term analysis for Tempo SPS in Appendix D.
- Several figures and tables do not accurately reflect the timing or extent of approved and constructed developments in Section 2.2:
    - The draft plan for OV Phase 1 is incorrect, and OV Phase 1 is already approved and built.
    - OV Phase 2 and Lioness' developments should be included in the 0-5 years timeline with accurate draft plans.
    - Areas 2 and 10 should be in the 5-10 year timeline and area 49 should be in the 10-20 year timeline and is missing a portion of the site.
    - The Wastewater Infrastructure catchment area 8 does not include several wastewater connections in the Northwest Quadrant.
- Some technical criteria is incorrect or missing, such as in Figure 7 which incorrectly identifies certain areas south and east of OV lands as wetlands, and the absence of infiltration allowance in Table 26.
- There are inconsistencies in between water infrastructure improvement timelines in Figure 12 and timing mentioned in previous sections. Further, there is no water main proposed along Settlers Trail and the draft plan for OV Phase 2 and Lioness' lands are needed along with the concept plan for OV Phase 3.

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

MEMO

Date: March 2, 2026

To: Matthew Heather, Arcadis Professional Services (Canada)
Nick Sutherland, Arcadis Professional Services (Canada)
Demetrius Yannoulopoulos, Arcadis Professional Services (Canada)

From: Matthew Marcuccio, P.Eng., J.L. Richards & Associates Limited

CC: Mike Finley, P.Eng., Municipality of North Grenville
Nicolas Shepherd, Municipality of North Grenville
Jordan Morrissette, M.Eng., P.Eng., J.L. Richards & Associates Limited

Subject: North Grenville Water & Wastewater Servicing Master Plan – Response to Comments from PIC

JLR No.: 33023-000

To whom it may concern,

On behalf of the Municipality of North Grenville (Municipality), J.L. Richards & Associates Limited (JLR) offers the following responses to the comments received November 13, 2025 from Arcadis Professional Services (Arcadis) regarding the draft report for the North Grenville Water & Wastewater Master Plan (Master Plan).

Arcadis Comment	Response
Limitations of Using Historical Permit Data for Future Housing Allocation: Building permits from 2016- 2021 were used to determine the allocation of units within and outside the Urban Serviced Areas. Relying on historical trends to predict future development may lead to misallocation of future growth within the Urban Serviced Area, impacting infrastructure needs. Further clarification is needed from the Municipality to determine when and where growth will occur.	Population and growth projections were developed in collaboration between JLR and the Municipality, with input from the Municipality's Planning Department. The purpose of this Master Plan is meant to be a high-level assessment of infrastructure needs, and will be further assessed in subsequent EAs and studies. The intention of the Master Plan is not for determining the acceptance of new developments. Note the assumptions from KPMG study are not being replaced or superseded with the Phase 1 Master Plan Report from an official plan or lands need perspective.
Potential Overstatement of Projected Population Due to Inclusion of Residential Supply: J.L. Richards' study includes the potential population accommodated on residential land holdings and expansion areas in addition to KPMG's original population projections. The population that may be accommodated on residential land holdings and expansion areas should be considered as an assumption of residential capacity rather than a forecast of the Municipality's population growth.	In order to estimate future W&WW demands, population projections were estimated based on the potential areas for additional growth with input from the Municipality. Without a project population and potential ICI growth, we would not be able to determine potential future infrastructure upgrades in the Municipality.

Arcadis Comment	Response
Uncertainty in Expansion Area Potential: J.L. Richards' conservative approach of assuming high-density residential development within expansion areas may overstate future servicing and infrastructure requirements, potentially resulting in unnecessary fiscal impacts for the Municipality. Additionally, potential employment that could be associated with high-density development in these expansion areas has not been addressed.	The density of the expansion areas was assigned in collaboration with the Municipality Planning Department. The Municipality is aware of the fiscal impacts associated with the scenarios that have been considered.
Absence of Employment Forecast: While J.L. Richards acknowledges the development of future commercial, institutional and industrial on existing land supply, further clarification of the assumptions and methodology used by the consultant is required to understand the projected population-related and employment land within Kemptville.	Employment forecasts for the purpose of estimating water and wastewater demands were developed in collaboration with the Municipality Planning Department. It was decided with the Municipality that ICI developments assumed a population per Ha, similar to nearby municipalities. Demands were calculated based on MECP guidelines based on area size and type of development, not employment population
Recommendation: The completion of the Servicing Master Plan in advance of the ongoing United Counties of Leeds and Grenville Growth Management Strategy process may be premature as the findings of the land needs assessment should inform the findings of the servicing study. It is recommended that North Grenville Water and Wastewater Master Plan not be finalized but rather be continually updated to reflect the Growth Management Strategy, so that plans are based on the most current land needs and growth forecasts.	The Municipality cannot wait for other plans to be completed. Master Plan will be finalized. The Municipality will be able to provide comments on the United Counties of Leeds and Grenville Growth strategy process, which will impact their findings.
Appendix A-1: The Master Plan does not consider that Municipality of North Grenville has imposed development restrictions due to lack of capacity, affecting Oxford Village (OV) Phase 1 findings and Short-Term (2026-2031) findings.	The purpose of the Master plan is not to comment on development restrictions, but to identify potential infrastructure needs to accommodate future growth.
Appendix A-2: Population projections are understated when looking at Tempo SPS Constraints, resulting in lower flows reported. There is also no medium or long-term analysis for Tempo SPS in Appendix D.	Appendix D can be revised to include the medium and long term flow analysis for Tempo SPS.
Appendix A-3: Several figures and tables do not accurately reflect the timing or extent of approved and constructed developments in Section 2.2:	All input of approved and constructed developments were provided by the Municipality in 2024. In general, the amount of development considered throughout the urban service area allowed for the evaluation of infrastructure needs.
Appendix A-3.1: The draft plan for OV Phase 1 is incorrect, and OV Phase 1 is already approved and built.	OV Phase 1 has been accounted for in the existing population estimate, as shown in Table 2 of the Phase 2 Report.

Arcadis Comment	Response
Appendix A-3.2: OV Phase 2 and Lioness' developments should be included in the 0-5 years timeline with accurate draft plans.	Timelines and development information were provided by the Municipality based on information they received at the time of developing the population projections.
Appendix A-3.3: Areas 2 and 10 should be in the 5-10 year timeline and area 49 should be in the 10-20 year timeline and is missing a portion of the site.	Timelines and development information were provided by the Municipality based on information they received at the time of developing the population projections. The figure can be corrected to include the missing portion. This does not impact the overall conclusions of the Master Plan.
Appendix A-3.4: The Wastewater Infrastructure catchment area 8 does not include several wastewater connections in the Northwest Quadrant.	Figure was based on the Municipality's available GIS data, which has not been updated to reflect the new Northwest Quadrant wastewater connections. This does not impact the overall conclusions of the Master Plan.
Appendix A-4: Some technical criteria is incorrect or missing, such as in Figure 7 which incorrectly identifies certain areas south and east of OV lands as wetlands, and the absence of infiltration allowance in Table 26.	Figure 7 was based off of data provided by the Ontario GeoHub. It was not in the scope of the Master Plan to validate this data. This does not impact the overall conclusions of the Master Plan. Infiltration rates were accounted for in the average day rate estimates.
Appendix A-5: There are inconsistencies in between water infrastructure improvement timelines in Figure 12 and timing mentioned in previous sections. Further, there is no water main proposed along Settlers Trail and the draft plan for OV Phase 2 and Lioness' lands are needed along with the concept plan for OV Phase 3.	The system-wide water model is a high level study, the watermains were drawn around the boundaries of the proposed developments, rather than attempting to match draft site drawings.

If there are any further questions regarding the responses provided, please contact the undersigned.

J.L. RICHARDS & ASSOCIATES LIMITED

Prepared by:

Matthew Marcuccio, P.Eng.
Senior Environmental Engineer

Reviewed by:

Jordan Morrissette, M.Eng., P.Eng.,
Associate; Manager, Ottawa Environmental Department; Senior Environmental Engineer

MM/JM:mm

Outlook

Re: North Grenville WWMP (Draft) IO Questions/Comments

From Matthew Marcuccio <mmarcuccio@jlrichards.ca>
Date Wed 3/11/2026 5:00 PM
To Marc.Telmosse@stantec.com <Marc.Telmosse@stantec.com>
Cc Nicholas Shepherd <nshepherd@northgrenville.on.ca>; kris.kilborn@stantec.com <kris.kilborn@stantec.com>; posen@fotenn.com <posen@fotenn.com>; tate.kelly@infrastructureontario.ca <tate.kelly@infrastructureontario.ca>; ernest.abraham@infrastructureontario.ca <ernest.abraham@infrastructureontario.ca>; Mike Finley <mfinley@northgrenville.on.ca>; Jordan Morrissette <jmorrissette@jlrichards.ca>

1 attachment (97 KB)
33023-000_PIC Memo_Stantec comments_00.pdf;

Good afternoon,

On behalf of the Municipality of North Grenville, please find attached responses to the comments submitted for the North Grenville Water and Wastewater Servicing Master Plan.

Best regards,
Matthew

Matthew Marcuccio, P.Eng.
Senior Environmental Engineer

1000-343 Preston Street
Ottawa ON K1S 1N4
Work: 343-803-4554
mmarcuccio@jlrichards.ca

From: Nicholas Shepherd <nshepherd@northgrenville.on.ca>
Sent: Monday, December 8, 2025 10:04 AM
To: Matthew Marcuccio <mmarcuccio@jlrichards.ca>; Jordan Morrissette <jmorrissette@jlrichards.ca>
Cc: Eric Sly <esly@northgrenville.on.ca>; Mike Finley <mfinley@northgrenville.on.ca>
Subject: FW: North Grenville WWMP (Draft) IO Questions/Comments

emails, if you are unsure, please send a separate message to Helpdesk.

Hello Matthew,

Infrastructure Ontario and their consultant on the Eastern Ontario Correctional Complex (EOCC), Stantec, have provided four comments, which can be seen in the email below.

Let us know if you have any questions or concerns,
Thanks

Nick Shepherd (he/him)
Water & Wastewater Technologist
Municipality of North Grenville
613-258-9569 ext.179
www.northgrenville.ca

From: Telmosse, Marc <Marc.Telmosse@stantec.com>
Sent: Monday, December 8, 2025 9:50 AM
To: Nicholas Shepherd <nshepherd@northgrenville.on.ca>
Cc: Kilborn, Kris <kris.kilborn@stantec.com>; Jaime Posen <posen@fotenn.com>; Kelly, Tate(IO) <tate.kelly@infrastructureontario.ca>; Abraham, Ernest(IO) <ernest.abraham@infrastructureontario.ca>
Subject: North Grenville WWMP (Draft) IO Questions/Comments
Importance: High

Good morning Nick,

I hope you had a nice weekend. I offer the following questions from Infrastructure Ontario's (IO) consideration to share with North Grenville for Stantec Consulting's (Stantec) review of the North Grenville Water & Wastewater Master Plan (WWMP) (Draft). The provided comments are limited to consideration of the Eastern Ontario Correctional Complex (EOCC).

Stantec Comment	Elaboration & Action by IO
01 - EOCC Contributing Flow The Phase 1 Report identifies the Kemptville Correctional Facility (KCF) ***(updated nomenclature to Eastern Ontario Correctional Complex (EOCC))*** as a short-term horizon (2026-2031) average day flow of 250m^3/d (2.89L/s) and max day flow of 995m^3/d (11.5L/s) (*Table 25: Existing and Future Wastewater Demands*). Note a slightly lower EOCC flow of 10.8L/s is mentioned in *section*	**IO to confirm if these considerations for the EOCC align with current (December 2025) flow projections. Request updates if warranted.**

5.5.3.2 *Industrial, Commercial, and Institutional (ICI) Lands*, the difference is not significant.	
02 – Collection System Assessment (General Approach & Inclusion of EOCC Flow) The collection system was assessed using the sanitary design sheet methodology in accordance with the Ministry of the Environment, Conservation and Parks (MECP) /North Grenville design rates referenced previously. This method remains the industry standard for evaluating new developments and accepted for evaluating existing systems. Nevertheless, we concur with the *Phase 2 Repor*t's recommendation that implementing a trunk sewer model would be advantageous. A georeferenced hydraulic model could deliver accurate conduit velocity data, improve insights into flow integration within the collection network, and simplify the review of hydraulic profiles. Additionally, it is not evident from the documentation i*n Appendix D – Wastewater Model Appendices – Compiled.p*df where the EOCC contribution has been incorporated.	**IO is interested in understanding what the implications might be on infrastructure needs (and timing/phasing implications) if flow generation parameters aligned with existing flow generation characteristics in North Grenville are used (see comment 03). This might consist of applying flow monitoring supported flow generation rates for existing development and maintaining design parameters for new development. (i.e., an Operational scenario is of interest).** **Stantec's assessment of collected flow monitoring data identified that there are unexpected flow contributors (possibly existing sump pump connections) and higher inflow and infiltration (I/I) sources present contributing flow to the existing collection system. Remediation/elimination of these sources of I/I may impact the WWMP's infrastructure recommendations. Understanding the impacts of I/I reduction on the infrastructure needs is of interest.** **There is mention that the EOCC flows are calculated differently than the other ICI flows in the collection system, please clarify where the EOCC contribution is accounted for in the actual sewer design sheet (i.e., there is no mention of EOCC in Appendix D).**
03 – Collection System Assessment (Dry Weather Flow (DWF) and Wet Weather Flow (WWF) Generation Approach) Residential development contributions (Section 5.5.3.1) for current and future properties were calculated using 300L/cap/day and the Harmon peaking factor (K=0.8), consistent with North Grenville's and MECP standards. IO's flow monitoring from December 2021 to May 2022 showed per capita rates between 120-254L/cap/day (Harmon correction factor not established) in the adjacent sewershed. These rates are less than the design rates currently being used in the WWMP assessment. Extraneous flows (Section 5.5.3.3) used an MECP design value of 0.28L/ha/s for all relevant properties. IO's collected data in the adjacent sewershed indicated peak rainfall derived inflow and infiltration (RDII) rates between 0.15-1.43L/ha/s, plus groundwater infiltration (GWI) rates of 0.01–0.15L/ha/s, resulting in a total extraneous flow up to	**IO and Stantec collected flow monitoring data from December 2021 to May 2022 and offer this for the Municipality's consideration. Inclusion of "as monitored" flow generation parameters as part of an Operational scenario is of interest.**

1.58L/ha/s in recent analysis. These rates were larger for certain rainfall events than those currently being used in the WWMP assessment.	
04 – Siphon Assessment Approach The siphon capacity has been evaluated using the same flow calculation method as the sewer design sheet, relying on theoretical flow rates. The resulting velocities are noted to exceed the minimum self-cleaning velocities required by the MECP. However, when these results are compared to the Municipality's real-world operations, where siphon surcharging has been observed, it becomes clear that actual siphon flows often surpass the theoretical values. This observation highlights the importance of using flow parameters based on actual operations. If lower DWF rates were assumed, it is possible the necessary self-cleaning velocities would not be reached, leading to sediment build-up and a decrease in siphon capacity. Additionally, even though larger WWF occasionally occur, they may not happen frequently enough to clean out the siphon barrels effectively.	**IO is interested in the implications of applying the Operational scenario to the siphon for existing and future growth assessments. The findings may influence the WWMP recommendations if the cleansing velocities are not reached and the projected ultimate flows are lower than currently considered.** **IO is concerned that if the existing siphons are an issue (either performance and/or frequency of cleaning), that these existing issues may be impacted with the introduction of EOCC flows in the future.**

Please let us know if you have any questions following your review.

Marc Telmosse, P.Eng.
Senior Associate, Water Delivery Canada

Mobile: (613) 415-7655
marc.telmosse@stantec.com

Stantec

With every community, we redefine what's possible.

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

MEMO

Date: March 2, 2026

To: Marc Telmosse, P.Eng. Stantec

From: Matthew Marcuccio, P.Eng., J.L. Richards & Associates Limited

CC: Mike Finley, P.Eng., Municipality of North Grenville
Nicolas Shepherd, Municipality of North Grenville
Jordan Morrissette, M.Eng., P.Eng., J.L. Richards & Associates Limited
Kris Kilborn, Stantec
Jaime Posen, Fotenn
Tate Kelly, Infrastructure Ontario
Ernest Abraham, Infrastructure Ontario

Subject: North Grenville Water & Wastewater Servicing Master Plan – Response to Comments from PIC

JLR No.: 33023-000

Dear Mr. Telmosse,

On behalf of the Municipality of North Grenville (Municipality), J.L. Richards & Associates Limited (JLR) offers the following responses to the comments received December 8, 2025 from Stantec and Infrastructure Ontario (IO) regarding the draft report for the North Grenville Water & Wastewater Master Plan (Master Plan).

Stantec Comment	Response
01 - EOCC Contributing Flow: The Phase 1 Report identifies the Kemptville Correctional Facility (KCF) (updated nomenclature to Eastern Ontario Correctional Complex (EOCC)) as a short-term horizon (2026-2031) average day flow of 250m3/d (2.89L/s) and max day flow of 995m3/d (11.5L/s) (Table 25: Existing and Future Wastewater Demands). Note a slightly lower EOCC flow of 10.8L/s is mentioned in section 5.5.3.2 Industrial, Commercial, and Institutional (ICI) Lands, the difference is not significant. **IO Comment:** IO to confirm if these considerations for the EOCC align with current (December 2025) flow projections. Request updates if warranted.	Noted.
02 – Collection System Assessment (General Approach & Inclusion of EOCC Flow): The collection system was assessed using the sanitary design sheet methodology in accordance with the Ministry of the Environment, Conservation and Parks (MECP) /North Grenville design rates referenced previously. This method	Noted, the report recommends additional flow monitoring. The design sheets were reviewed and the EOCC contribution was not included in Appendix D. The contribution will be added to the sewer design sheet (shown as an increase in the Commercial/Institutional

Stantec Comment	Response
remains the industry standard for evaluating new developments and accepted for evaluating existing systems. Nevertheless, we concur with the Phase 2 Report's recommendation that implementing a trunk sewer model would be advantageous. A georeferenced hydraulic model could deliver accurate conduit velocity data, improve insights into flow integration within the collection network, and simplify the review of hydraulic profiles. Additionally, it is not evident from the documentation in Appendix D – Wastewater Model Appendices – Compiled.pdf where the EOCC contribution has been incorporated. **IO Comment:** IO is interested in understanding what the implications might be on infrastructure needs (and timing/phasing implications) if flow generation parameters aligned with existing flow generation characteristics in North Grenville are used (see comment 03). This might consist of applying flow monitoring supported flow generation rates for existing development and maintaining design parameters for new development. (i.e., an Operational scenario is of interest). Stantec's assessment of collected flow monitoring data identified that there are unexpected flow contributors (possibly existing sump pump connections) and higher inflow and infiltration (I/I) sources present contributing flow to the existing collection system. Remediation/elimination of these sources of I/I may impact the WWMP's infrastructure recommendations. Understanding the impacts of I/I reduction on the infrastructure needs is of interest. There is mention that the EOCC flows are calculated differently than the other ICI flows in the collection system, please clarify where the EOCC contribution is accounted for in the actual sewer design sheet (i.e., there is no mention of EOCC in Appendix D).	Area) and the report will be updated accordingly. This does not impact the overall conclusions of the Master Plan.
03 – Collection System Assessment (Dry Weather Flow (DWF) and Wet Weather Flow (WWF) Generation Approach): Residential development contributions (Section 5.5.3.1) for current and future properties were calculated using 300L/cap/day and the Harmon peaking factor (K=0.8), consistent with North Grenville's and MECP standards. IO's flow monitoring from December 2021 to May 2022 showed per capita rates between 120-254L/cap/day (Harmon correction factor not established) in the adjacent	Noted. Flow monitoring data can be reviewed as part of a future project.

Stantec Comment	Response
sewershed. These rates are less than the design rates currently being used in the WWMP assessment. Extraneous flows (Section 5.5.3.3) used an MECP design value of 0.28L/ha/s for all relevant properties. IO's collected data in the adjacent sewershed indicated peak rainfall derived inflow and infiltration (RDII) rates between 0.15-1.43L/ha/s, plus groundwater infiltration (GWI) rates of 0.01–0.15L/ha/s, resulting in a total extraneous flow up to 1.58L/ha/s in recent analysis. These rates were larger for certain rainfall events than those currently being used in the WWMP assessment. **IO Comment:** IO and Stantec collected flow monitoring data from December 2021 to May 2022 and offer this for the Municipality's consideration. Inclusion of "as monitored" flow generation parameters as part of an Operational scenario is of interest.	
04 – Siphon Assessment Approach: The siphon capacity has been evaluated using the same flow calculation method as the sewer design sheet, relying on theoretical flow rates. The resulting velocities are noted to exceed the minimum self-cleaning velocities required by the MECP. However, when these results are compared to the Municipality's real-world operations, where siphon surcharging has been observed, it becomes clear that actual siphon flows often surpass the theoretical values. This observation highlights the importance of using flow parameters based on actual operations. If lower DWF rates were assumed, it is possible the necessary self-cleaning velocities would not be reached, leading to sediment build-up and a decrease in siphon capacity. Additionally, even though larger WWF occasionally occur, they may not happen frequently enough to clean out the siphon barrels effectively. **IO Comment:** IO is interested in the implications of applying the Operational scenario to the siphon for existing and future growth assessments. The findings may influence the WWMP recommendations if the cleansing velocities are not reached and the projected ultimate flows are lower than currently considered. IO is concerned that if the existing siphons are an issue (either performance and/or frequency of cleaning), that these existing issues may be impacted with the introduction of EOCC flows in the future.	Noted. There are recommendations in the report for the syphons to be assessed in further detail to confirm velocities and required upgrades. In addition, the Municipality has started completing regular annual cleaning of the syphons.

If there are any further questions regarding the responses provided, please contact the undersigned.

Best Regards,

J.L. RICHARDS & ASSOCIATES LIMITED

Prepared by:

Matthew Marcuccio, P.Eng.
Senior Environmental Engineer

Reviewed by:

Jordan Morrissette, M.Eng., P.Eng.,
Associate; Manager, Ottawa Environmental Department; Senior Environmental Engineer

MM/JM:mm