Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix A

Sewer Design Tables and Figures

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix A1

Storm Design Tables and Drainage Plan

Dillon Consulting Limited
Breithaupt
Kitchener, ON

CITY OF HAMILTON
STORM SEWER DESIGN

Project: Block 2
Design by: DV / MH / DO
Date: 20-Jun-17

Minimum Tc 10 min
Min. dia. 0.3 m

Design Storm
Frequency 5 yr
Location Mount Hope Airport
a 1049.5
b 8
c 0.803

1 - 45 0.03
45 - 90 0.06

Mannings n = 0.013
Design (Full Design Capacity) = 0.85
Min.Velocity (Flowing Full) = 0.75 m/s
Max. Velocity = 3.65 m/s

Minimum Cover 1.2 m
Minimum Drop 0.03 m

Area No.	Street Name	From MH No.	To MH No.	Area (ha)	Total Area (ha)	C Value	Area x C	Cumm. A x C	Cumm. Tc	I (mm/hr)	Total Flow (l/s)	D (m)	Pipe Slope m/m	n	Length (m)	A Full m2	Q Full (l/s)	V Full (m/s)	% Flow Capacity	Actual Velocity (m/s)	Time of Flow (min)	Cover at USMH	US Inv	DS Inv	Cover at DSMH	Drop to DS Pipe	Remarks
A10	Local Road 1	10A	9A	0.943	0.943	0.77	0.727	0.727	10.0000	103.03828	208.2108	0.525	0.0050	0.013	97.880	0.2165	304.1	1.40477852	68.47%	1.513	1.078	3.466	90.909	90.420	2.935	0.075	
A9	Local Road 1	9A	8A	0.625	1.568	0.75	0.469	1.196	11.0783	98.335062	326.8421	0.600	0.0050	0.013	79.990	0.2827	434.172	1.535568363	75.28%	1.687	0.790	2.935	90.345	89.945	3.393	0.075	
A8	Local Road 1	8A	7A	0.800	2.368	0.75	0.600	1.797	11.8688	95.180984	475.0400	0.675	0.0050	0.013	118.490	0.3578	594.386	1.661004609	79.92%	1.845	1.070	3.393	89.870	89.278	3.037	0.225	
A28	Local Road 2	28A	29A	0.866	0.866	0.77	0.670	0.670	10.0000	103.03828	191.8595	0.525	0.0050	0.013	92.420	0.2165	304.1	1.40477852	63.09%	1.485	1.037	3.506	90.289	89.827	3.258	0.150	
A31	Collector	31A	29A	0.330	0.330	0.75	0.248	0.248	10.0000	103.03828	70.8979	0.375	0.0050	0.013	66.940	0.1104	123.977	1.122507283	57.19%	1.160	0.962	3.613	90.312	89.977	3.258	0.300	
A30	Local Road 2	30A	29A	0.498	0.498	0.75	0.374	0.374	10.0000	103.03828	106.9222	0.450	0.0050	0.013	71.920	0.1590	201.6	1.267583755	53.04%	1.286	0.932	2.396	90.262	89.902	3.258	0.225	
A29	Collector	29A	7A	0.253	1.947	0.75	0.190	1.481	11.0369	98.50674	405.3497	0.675	0.0050	0.013	79.840	0.3578	594.386	1.661004609	68.20%	1.787	0.745	3.258	89.677	89.278	3.037	0.225	
A7	Collector	7A	6A	0.466	4.782	0.75	0.349	3.627	12.9392	91.254039	919.5395	0.900	0.0040	0.013	84.170	0.6362	1144.94	1.799734003	80.31%	2.001	0.701	3.037	89.053	88.716	2.574	0.150	
A21	Local Road 2	21A	20A	0.528	0.528	0.75	0.396	0.396	10.0000	103.03828	113.4474	0.450	0.0050	0.013	51.490	0.1590	201.6	1.267583755	56.27%	1.305	0.658	1.513	90.931	90.674	1.384	0.075	
A20	Local Road 3	20A	19A	0.452	0.981	0.75	0.339	0.735	10.6576	100.11165	204.5274	0.525	0.0050	0.013	57.090	0.2165	304.1	1.40477852	67.26%	1.507	0.631	1.384	90.599	90.314	1.241	0.075	
A19	Local Road 5	19A	18A	0.211	1.192	0.75	0.158	0.894	11.2890	97.471555	241.9992	0.600	0.0050	0.013	79.910	0.2827	434.172	1.535568363	55.74%	1.577	0.844	1.241	90.239	89.839	2.894	0.060	
A18	Local Road 5	18A	17A	0.650	1.842	0.75	0.488	1.381	12.1335	94.174991	361.3882	0.600	0.0050	0.013	106.540	0.2827	434.172	1.535568363	83.24%	1.718	1.034	2.954	89.779	89.246	2.634	0.030	
A17	Local Road 5	17A	6A	0.147	1.988	0.75	0.110	1.491	13.1671	90.463963	374.7832	0.600	0.0055	0.013	36.290	0.2827	455.363	1.610517686	82.30%	1.798	0.336	2.664	89.216	89.016	2.574	0.450	
A27	Local Road 5	27A	6A	0.726	0.726	0.52	0.379	0.379	10.0000	103.03828	108.6230	0.450	0.0050	0.013	99.120	0.1590	201.6	1.267583755	53.88%	1.291	1.279	2.918	89.662	89.166	2.574	0.600	
A6	Collector	6A	5A	0.427	7.923	0.71	0.304	5.802	13.6402	88.872417	1432.4424	1.050	0.0040	0.013	79.170	0.8659	1727.06	1.994525142	82.94%	2.230	0.592	2.574	88.566	88.249	2.271	0.030	
A26	Local Road 5	26A	5A	0.893	0.893	0.71	0.635	0.635	10.0000	103.03828	181.7439	0.525	0.0050	0.013	106.900	0.2165	304.1	1.40477852	59.76%	1.467	1.214	2.568	89.279	88.745	2.300	0.526	
A5	Collector	5A	4A	0.418	9.235	0.75	0.314	6.751	14.2319	86.968012	1630.9432	1.050	0.0050	0.013	81.830	0.8659	1930.91	2.2299469	84.46%	2.501	0.545	2.301	88.219	87.810	2.110	0.150	
A25	Local Road 12	25A	4A	0.473	0.473	0.75	0.355	0.355	10.0000	103.03828	101.5369	0.450	0.0050	0.013	65.840	0.1590	201.6	1.267583755	50.37%	1.270	0.864	2.111	88.739	88.410	2.110	0.750	
A4	Collector	4A	3A	0.678	10.386	0.75	0.509	7.614	14.7773	85.291855	1804.0587	1.200	0.0030	0.013	111.230	1.1310	2135.42	1.888128053	84.48%	2.117	0.876	2.110	87.660	87.326	1.659	0.030	
A3	Collector	3A	2A	0.869	11.255	0.75	0.652	8.266	15.6529	82.747293	1900.0219	1.200	0.0035	0.013	98.800	1.1310	2306.52	2.039411386	82.38%	2.278	0.723	1.689	87.296	86.950	1.250	0.060	
A2	Local Road 8	2A	1A	0.245	11.500	0.75	0.184	8.449	16.3759	80.770629	1895.8208	1.200	0.0035	0.013	80.000	1.1310	2306.52	2.039411386	82.19%	2.277	0.586	1.310	86.890	86.610	0.990	0.060	
A24	Local Road 13	24A	22A	0.864	0.864	0.75	0.648	0.648	10.0000	103.03828	185.4855	0.525	0.0050	0.013	117.160	0.2165	304.1	1.40477852	60.99%	1.474	1.325	2.281	88.184	87.598	1.257	0.075	
A22	Local Road 13	22A	1A	0.302	1.166	0.75	0.227	0.875	11.3247	97.326968	236.4760	0.600	0.0050	0.013	74.690	0.2827	434.172	1.535568363	54.47%	1.568	0.794	1.257	87.523	87.150	1.050	0.600	
A1	SWM Pond Outfall	1A	HWA1	0.000	12.666	0.00	0.000	9.324	16.9615	79.245327	2052.5623	1.200	0.0040	0.013	12.900	1.1310	2465.77	2.180222479	83.24%	2.439	0.088	1.050	86.550	86.498	0.000	Low End MH	
A16	Local Road 12	16A	15A	0.748	0.748	0.53	0.393	0.393	10.0000	103.03828	112.5755	0.450	0.0050	0.013	92.300	0.1590	201.6	1.267583755	55.84%	1.303	1.181	2.530	88.500	88.039	3.651	0.061	
A15	Local Road 14	15A	14A	0.178	0.926	0.25	0.044	0.438	11.1810	97.912035	119.0532	0.450	0.0050	0.013	40.780	0.1590	201.6	1.267583755	59.05%	1.320	0.515	3.712	87.978	87.774	3.309	0.075	
A14	Local Road 14	14A	13A	0.558	1.484	0.25	0.140	0.577	11.6960	95.851244	153.6944	0.525	0.0050	0.013	109.740	0.2165	304.1	1.40477852	50.54%	1.409	1.298	3.309	87.699	87.150	2.025	0.030	
A13	Local Road 14	13A	12A	0.211	1.695	0.25	0.053	0.630	12.9944	91.061111	159.3683	0.525	0.0050	0.013	50.400	0.2165	304.1	1.40477852	52.41%	1.421	0.591	2.055	87.120	86.868	1.839	0.030	
A12	Local Road 14	12A	11A	0.229	1.924	0.48	0.111	0.741	13.5854	89.053647	183.2320	0.525	0.0030	0.013	70.920	0.2165	235.555	1.088136762	77.79%	1.203	0.983	1.869	86.838	86.625	1.550	0.075	
A23	Local Road 15	23A	11A	1.191	1.191	0.52	0.618	0.618	10.0000	103.03828	176.9858	0.525	0.0050	0.013	87.870	0.2165	304.1	1.40477852	58.20%	1.458	1.005	2.737	87.064	86.625	1.550	0.075	
A11	SWM Pond Outfall	11A	HWA11	0.000	3.115	0.00	0.000	1.359	14.5682	85.925879	324.3889	0.600	0.0040	0.013	10.000	0.2827	388.335	1.373454098	83.53%	1.537	0.108	1.550	86.550	86.510	0.000	Low End MH	

NOTES
(1) Naming convention: Letter of designated area block + number of starting manhole (ex. A5 in block A, pipe starts at MH 5)
(2) Natural wooded lot, multiuse trail, and parkland taken to have same coefficient of imperviousness (0.25)
(3) Low 2, low 3, and medium density residential housing falls under the townhomes classification with a coefficient of imperviousness of 0.75
(4) Length measurements taken from centrepoint of MH

Dillon Consulting Limited
Breithaupt
Kitchener, ON

CITY OF HAMILTON
STORM SEWER DESIGN

Project: Block 2
Design by: DV / MH / DO
Date: 20-Jun-17

Minimum Tc 10 min
Min. dia. 0.3 m

Design Storm
Frequency 5 yr
Location Mount Hope Airport
a 1049.5
b 8
c 0.803

1 - 45 0.03
45 - 90 0.06
Minimum Cover 1.8 m
Minimum Drop 0.03 m

Mannings n = 0.015
esign Capacity) = 0.85
Min.Velocity = 0.75 m/s
Max. Velocity = 3.65 m/s

Area No.	Street Name	From MH No.	To MH No.	Area (ha)	Total Area (ha)	C Value	Area x C	Cumm. A x C	Cumm. Tc	I (mm/hr)	Total Flow (l/s)	D (m)	Pipe Slope m/m	n	Length (m)	A Full m2	Q Full (l/s)	V Full (m/s)	% Flow Capacity	Actual Velocity (m/s)	Time of Flow (min)	Cover at USMH	US Inv	DS Inv	Cover at DSMH	Remarks
B13	Local Road 6	13B	12B	0.585	0.585	0.75	0.438	0.438	10.0000	103.03828	125.4969	0.450	0.0030	0.013	78.120	0.1590	156.159	0.981866155	80.36%	1.092	1.193	1.200	91.066	90.832	1.258	
B19	Local Road 7	19B	12B	1.097	1.097	0.37	0.407	0.407	10.0000	103.03828	116.5270	0.450	0.0040	0.013	69.520	0.1590	180.317	1.133761378	64.62%	1.205	0.961	1.650	91.110	90.832	1.258	
B12	Local Road 7	12B	11B	1.687	3.369	0.33	0.552	1.397	11.1926	97.86483	379.9067	0.675	0.0040	0.013	82.230	0.3578	531.635	1.485647687	71.46%	1.614	0.849	1.258	90.607	90.278	2.307	
B11	Local Road 7	11B	10B	0.110	3.480	0.75	0.083	1.480	12.0415	94.522069	388.6884	0.675	0.0040	0.013	37.440	0.3578	531.635	1.485647687	73.11%	1.622	0.385	2.367	90.218	90.068	2.207	
B18	Local Road 7	18B	10B	0.353	0.353	0.75	0.265	0.265	10.0000	103.03828	75.7935	0.375	0.0040	0.013	51.750	0.1104	110.889	1.004001036	68.35%	1.081	0.798	1.310	90.575	90.368	2.207	
B10	Local Road 9	10B	9B	0.303	4.136	0.75	0.227	1.972	12.4261	93.089947	509.9969	0.750	0.0040	0.013	63.660	0.4418	704.098	1.593752301	72.43%	1.737	0.611	2.207	89.993	89.738	1.972	
B17	Local Road 10	17B	9B	0.382	0.382	0.75	0.287	0.287	10.0000	103.03828	82.0291	0.375	0.0040	0.013	58.630	0.1104	110.889	1.004001036	73.97%	1.099	0.889	2.037	90.348	90.113	1.972	
B9	Local Road 9	9B	8B	0.596	5.114	0.75	0.447	2.706	13.0370	90.913008	683.3022	0.825	0.0040	0.013	73.190	0.5346	907.849	1.698306017	75.27%	1.865	0.654	1.972	89.663	89.370	1.710	
B8	Local Road 9	8B	1B	0.600	5.714	0.75	0.450	3.156	13.6910	88.705269	777.6052	0.825	0.0040	0.013	71.160	0.5346	907.849	1.698306017	85.65%	1.909	0.621	1.740	89.340	89.055	1.470	
B7	Local Road 11	7B	6B	0.802	0.802	0.75	0.602	0.602	10.0000	103.03828	172.1985	0.525	0.0040	0.015	105.000	0.2165	235.729	1.088942491	73.05%	1.189	1.472	-0.412	91.230	90.810	2.195	
B6	Local Road 10	6B	5B	0.533	1.335	0.75	0.400	1.002	11.4721	96.735142	269.1568	0.600	0.0040	0.013	69.630	0.2827	388.335	1.373454098	69.31%	1.483	0.783	2.195	90.735	90.456	1.934	
B5	Local Road 10	5B	4B	0.569	1.904	0.75	0.427	1.428	12.2546	93.722367	371.8777	0.675	0.0040	0.013	70.800	0.3578	531.635	1.485647687	69.95%	1.607	0.734	1.934	90.381	90.098	1.677	
B4	Local Road 8	4B	3B	0.438	2.342	0.75	0.329	1.757	12.9888	91.080583	444.5257	0.675	0.0040	0.013	89.120	0.3578	531.635	1.485647687	83.61%	1.663	0.893	1.737	90.038	89.682	1.363	
B16	Local Road 10	16B	15B	0.496	0.496	0.75	0.372	0.372	10.0000	103.03828	106.4537	0.450	0.0040	0.013	88.920	0.1590	180.317	1.133761378	59.04%	1.181	1.255	2.452	91.018	90.662	2.125	
B15	Local Road 10	15B	14B	0.402	0.898	0.75	0.302	0.674	11.2553	97.608822	182.6883	0.525	0.0040	0.013	91.020	0.2165	271.995	1.256472105	67.17%	1.347	1.126	2.125	90.587	90.223	1.822	
B14	Local Road 10	14B	3B	0.437	1.335	0.75	0.328	1.001	12.3811	93.254933	259.4457	0.600	0.0040	0.013	97.760	0.2827	388.335	1.373454098	66.81%	1.471	1.107	1.822	90.148	89.757	1.363	
B3	Local Road 8	3B	2B	0.400	4.078	0.75	0.300	3.059	13.8818	88.083586	748.4171	0.900	0.0030	0.013	53.290	0.6362	991.548	1.558615367	75.48%	1.713	0.519	1.363	89.457	89.297	1.153	
B2	Local Road 8	2B	1B	0.341	4.419	0.75	0.255	3.314	14.4004	86.442389	795.8190	0.900	0.0030	0.013	85.750	0.6362	991.548	1.558615367	80.26%	1.733	0.825	1.213	89.237	88.980	1.470	
B1	Storm Pond Outfall	1B	HWB1	0.000	10.132	0.00	0.000	6.470	15.2253	83.96842	1509.1239	1.050	0.0045	0.013	9.280	0.8659	1831.83	2.11551338	82.38%	2.363	0.065	1.470	88.830	88.788	0.000	

NOTES
(1) Naming convention: Letter of designated area block + number of starting manhole (ex. A5 in block A, pipe starts at MH 5)
(2) Natural wooded lot, multiuse trail, and parkland taken to have same coefficient of imperviousness (0.25)
(3) Low 2, low 3, and medium density residential housing falls under the townhomes classification with a coefficient of imperviousness of 0.75
(4) Length measurements taken from centrepoint of MH

Dillon Consulting Limited
Breithaupt
Kitchener, ON

CITY OF HAMILTON
STORM SEWER DESIGN

Project: Block 2
Design by: DV / MH / DO
Date: 20-Jun-17

Minimum Tc 10 min
Min. dia. 0.3 m

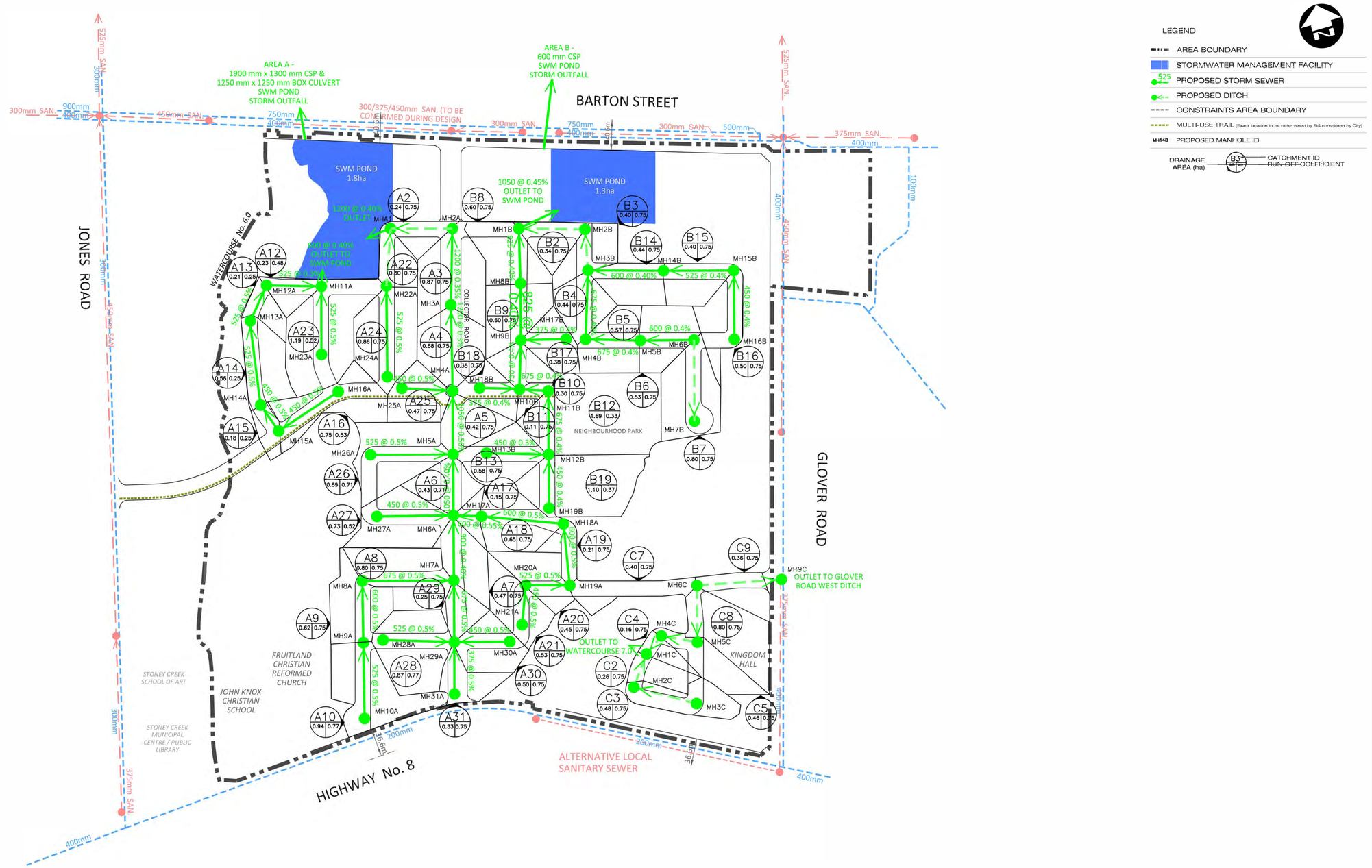
Design Storm
Frequency 5 yr
Location Mount Hope Airport
a 1049.5
b 8
c 0.803

Alignment change MH drop 0 degree Grade
1 - 45 0.03
45 - 90 0.06
1 - 45 0.03
45 - 90 0.06
Minimum Cover 1.2 m
Minimum Drop 0.03 m

Maximum Design Capacity 0.85
Mannings n = 0.013
Min.Velocity = 0.75 m/s
Max. Velocity = 3.65 m/s

Area No.	Street Name	From MH No.	To MH No.	Area (ha)	Total Area (ha)	C Value	Area x C	Cumm. A x C	Cumm. Tc	I (mm/hr)	Total Flow (l/s)	D (m)	Pipe Slope m/m	n	Length (m)	A Full m2	Q Full (l/s)	V Full (m/s)	% Flow Capacity	Actual Velocity (m/s)	Time of Flow (min)	Cover at USMH	US Inv	DS Inv	Cover at DSMH	Remarks
C3	Local Road 16	3C	2C	0.482	0.482	0.75	0.361	0.361	10.0000	103.03828	103.4252	0.450	0.0050	0.013	84.000	0.1590	201.6	1.267583755	51.30%	1.276	1.097	0.590	92.525	92.105	0.380	
C2	Local Road 16	2C	1C	0.256	0.738	0.75	0.192	0.553	11.0974	98.256348	150.9864	0.525	0.0050	0.013	46.000	0.2165	304.1	1.40477852	49.65%	1.402	0.547	0.380	92.030	91.800	0.265	
C8	Local Road 16	6C	5C	0.795	0.795	0.75	0.597	0.597	10.0000	103.03828	170.7522	0.525	0.0050	0.013	47.000	0.2165	304.1	1.40477852	56.15%	1.445	0.542	0.960	92.335	92.100	0.535	
C5	Local Road 16	5C	4C	0.455	1.250	0.75	0.341	0.938	10.5419	100.61294	262.0963	0.600	0.0050	0.013	30.000	0.2827	434.172	1.535568363	60.37%	1.607	0.311	0.535	92.025	91.785	0.379	
C4	Local Road 16	4C	1C	0.159	1.410	0.75	0.120	1.057	10.8530	99.277744	291.5990	0.600	0.0050	0.013	30.000	0.2827	434.172	1.535568363	67.16%	1.647	0.304	0.439	91.725	91.575	0.415	
C1	Watercourse 7.0	1C	HWC1	0.000	2.147	0.00	0.000	1.610	11.6441	96.054507	429.7346	0.675	0.0050	0.013	10.000	0.3578	594.386	1.661004609	72.30%	1.809	0.092	0.415	91.500	91.450	0.000	
C7	Local Road 3			0.400		0.75	0.300																			
C9	Local Road 3	6C	9C	0.360	0.360	0.75	0.270	0.270	10.0000	103.03828	77.2772	0.375	0.0050	0.013	110.000	0.1104	123.977	1.122507283	62.33%	1.184	1.549	0.650	92.795	92.245	0.840	
C6	Glover Road Ditch	9C	HWC9	0.000	0.360	0.00	0.000	0.270	11.5488	96.430096	72.3211	0.375	0.0050	0.013	3.000	0.1104	123.977	1.122507283	58.33%	1.166	0.043	0.840	92.215	92.200	0.000	

NOTES
(1) Naming convention: Letter of designated area block + number of starting manhole (ex. A5 in block A, pipe starts at MH 5)
(2) Natural wooded lot, multiuse trail, and parkland taken to have same coefficient of imperviousness (0.25)
(3) Low 2, low 3, and medium density residential housing falls under the townhomes classification with a coefficient of imperviousness of 0.75
(4) Length measurements taken from centrepoint of MH



FILENAME: C:\PROJECTWISE\WORKING DIRECTORY\ACTIVE\31RL\DMS91474\151936 STM DRAINAGE PLAN.DWG PLOTTED BY: LECOMPTE, ROZANNE
PLOT DATE: 2018-05-25 @ 2:40:30 PM PLOT SCALE: 1:1 PLOT STYLE: DILLON-STANDARD.CTB

Conditions of Use

Verify elevations and/or dimensions on drawing prior to use. Report any discrepancies to Dillon Consulting Limited.

Do not scale dimensions from drawing.

Do not modify drawing, re-use it, or use it for purposes other than those intended at the time of its preparation without prior written permission from Dillon Consulting Limited.

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No.	ISSUED FOR	DATE	BY
03	FOR FINAL REPORT	18.04.11	RLL/DYO
02	FOR REVISED DRAFT REPORT	18.03.29	RLL/DYO
01	ISSUED FOR DRAFT REPORT	17.06.19	RLL/DYO

DESIGN: MH	REVIEWED BY: DYO
DRAWN: RLL	CHECKED BY: DV
DATE: MAY 2018	
SCALE: 1:2500	

Block 2 - Fruitland-Winona
Block Servicing Strategy

Storm Drainage Plan

PROJECT NO. 15 1936

SHEET NO. **Fig 5.6**

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix A2

Sanitary Design Table and Drainage Plan

Dillon Consulting Limited
51 Breithaupt St., Suite 200
Kitchener, ON

CITY OF HAMILTON
SANITARY SEWER DESIGN TABLE

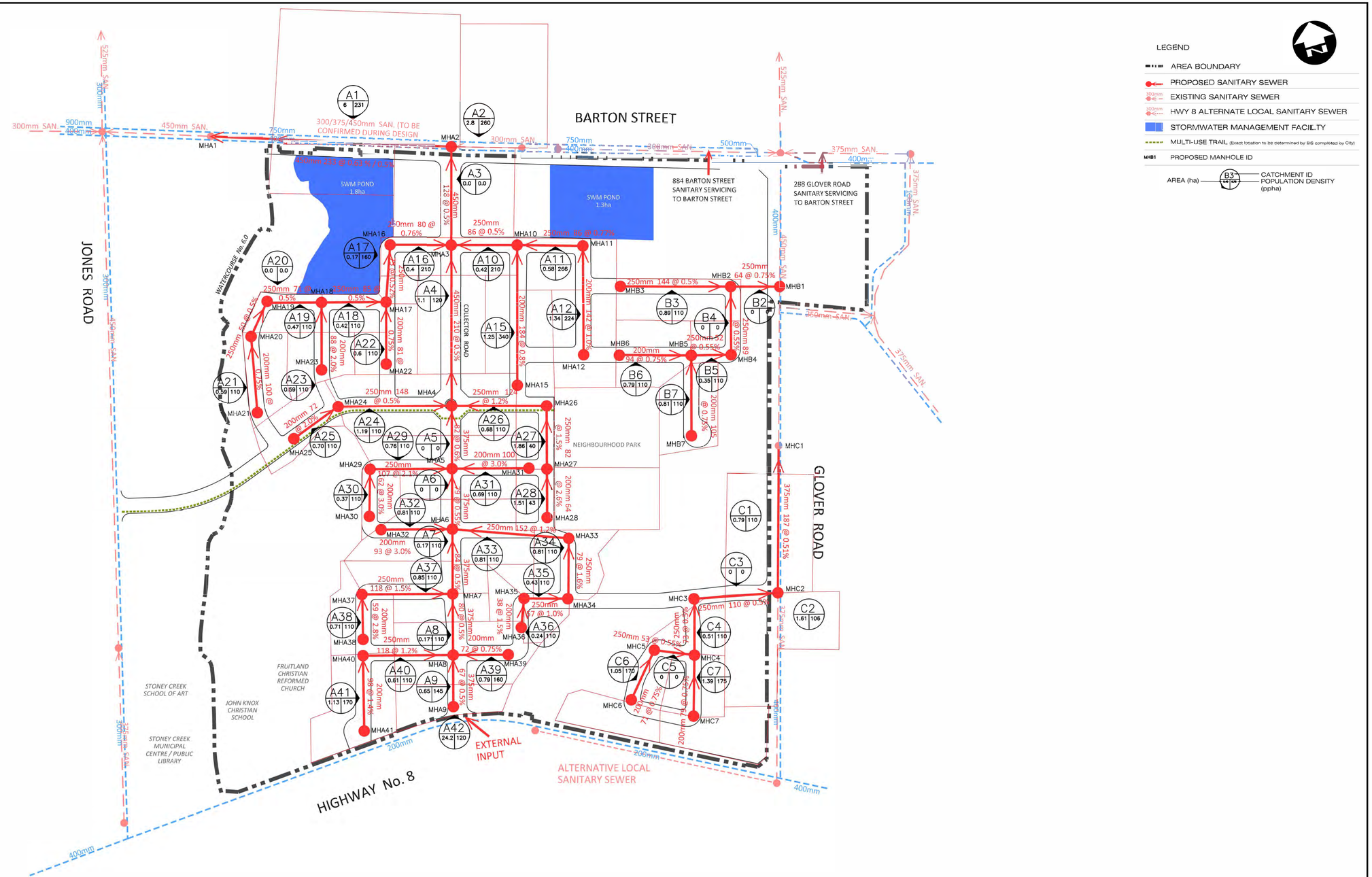
Project: Block 2
Design by: DV / MH / DO
Date: February 22, 2018
pw:\\pwintsrv.dillon.ca:Active_Prod\Documents\Projects\2015\151936 Fruitland-Winona Block Servicing\Project Workspace\2. Technical Workspace\1. Engineering\Design, Analysis and M

Flow Factor: 360 l/day/cap
Peaking Factor: M 5*(P^-0.2) 2≤M≤5
Infiltration: 0.6 0.2 l/s/ha for areas with deep storm sewers
0.4 l/s/ha for areas with shallow storm sewers

Min Drop at Bend 0.06 m
Minnimum Cover 2.75 m
Minimum Drop 0.03 m

Capacity (Up to 450 mm) = 0.75
Mannings n = 0.015 dia. < 0.6 m
0.013 dia. => 0.6 m
Min.Velocity = 0.75 m/s
Max. Velocity = 2.75 m/s

Area No.	Street Name	From MH No.	To MH No.	Pop. Density (ppha)	Area ha	Cumm. Area (ha)	Equiv. Pop	Cumm. Pop	Pop. In Thousands	Peaking Factor	Design Peaking Factor	Sanitary Flow Q Avg. (l/s)	Sanitary Flow Q Peak (l/s)	Infilt. (l/s)	Total Flow (l/s)	D (m)	Pipe Slope m/m	n	A Full m2	Q Full (l/s)	V Full (m/s)	% Flow Capacity	Actual Velocity (m/s)	Cover at USMH	US Inv	Length (m)	DS Inv	Cover at DSMH	Drop to DS Pipe	Remarks
A1	Barton Street	A2	A1	231	6	56.95	1384	8188	8.1878	3.2835	3.2835	34.1158	112.0192088	34.1700	146.1892	0.450	0.0063	0.015	0.1590	196.123	1.233144671	74.54%	1.352	5.402	82.448	233.000	80.980	5.705	Low End	
A3	Collector Road	A3	A2	0	0	48.15	0	6076	6.0756	3.4854	3.4854	25.315	88.23279649	28.8900	117.1228	0.450	0.0050	0.015	0.1590	174.72	1.098572588	67.03%	1.178	5.802	83.148	128.000	82.508	5.342	0.060	
A2	Barton Street	AExt1	A2	260	2.8	2.80	728	728	0.7280	5.32775	5	3.03333	15.16666667	1.6800	16.8467	0.300	0.0029	0.015	0.0707	45.1316	0.638481888	37.33%	0.592	4.160	84.280	111.000	83.960	4.040	1.512	
A4	Collector Road	A4	A3	120	1.1	41.26	132	4691	4.6911	3.67042	3.67042	19.5462	71.74263611	24.7560	96.4986	0.450	0.0050	0.015	0.1590	174.72	1.098572588	55.23%	1.126	6.292	84.228	210.000	83.178	5.772	0.030	
A5	Collector Road	A5	A4	0	0	34.22	0	4136	4.1365	3.76396	3.76396	17.2352	64.87255246	20.5320	85.4046	0.375	0.0060	0.015	0.1104	117.702	1.065692437	72.56%	1.162	6.400	84.795	82.000	84.303	6.292	0.075	
A6	Collector Road	A6	A5	0	0	32.40	0	3936	3.9363	3.80149	3.80149	16.401	62.34834093	19.4400	81.7883	0.375	0.0055	0.015	0.1104	112.691	1.020322828	72.58%	1.112	6.555	85.260	79.000	84.826	6.369	0.031	
A7	Collector Road	A7	A6	110	.17	29.30	19	3595	3.5953	3.87101	3.87101	14.9802	57.98852185	17.5800	75.5685	0.375	0.0050	0.015	0.1104	107.447	0.972839645	70.33%	1.054	6.905	85.710	84.000	85.290	6.525	0.030	
A8	Collector Road	A8	A7	110	.17	27.57	19	3405	3.4050	3.91334	3.91334	14.1873	55.51973106	16.5420	72.0617	0.375	0.0050	0.015	0.1104	107.447	0.972839645	67.07%	1.043	7.095	86.140	80.000	85.740	6.875	0.030	
A9	Collector Road	A9	A8	145	.65	24.87	94	3001	3.0007	4.01353	4.01353	12.5027	50.18004379	14.9220	65.1020	0.375	0.0050	0.015	0.1104	107.447	0.972839645	60.59%	1.019	7.420	86.505	67.000	86.170	7.065	0.030	
A10	Local Road 8	A10	A3	210	.42	3.59	88	967	0.9670	5.03365	5	4.02923	20.14614583	2.1540	22.3001	0.250	0.0050	0.015	0.0491	36.4432	0.742415598	61.19%	0.780	7.322	83.778	86.000	83.348	5.802	0.200	
A11	Local Road 8	A11	A10	266	.58	1.92	154	454	0.4544	5.8543	5	1.8935	9.4675	1.1520	10.6195	0.250	0.0077	0.015	0.0491	45.2249	0.921313529	23.48%	0.753	6.630	84.470	86.000	83.808	7.292	0.030	
A12	Local Road 8	A12	A11	224	1.34	1.34	300	300	0.3002	6.36062	5	1.25067	6.253333333	0.8040	7.0573	0.200	0.0100	0.015	0.0314	28.4253	0.904805872	24.83%	0.751	6.310	85.940	142.000	84.520	6.630	0.050	
A15	Local Road 9	A15	A10	340	1.25	1.25	424	424	0.4244	5.93499	5	1.76823	8.841145833	0.7500	9.5911	0.200	0.0080	0.015	0.0314	25.4244	0.809282975	37.72%	0.753	7.230	85.300	184.000	83.828	7.322	0.050	
A16	Local Road 13	A16	A3	210	.46	3.30	97	418	0.4175	5.95441	5	1.73958	8.697916667	1.9800	10.6779	0.250	0.0076	0.015	0.0491	44.9302	0.915311422	23.77%	0.750	4.594	83.96	80.000	83.348	5.802	0.200	
A17	Local Road 13	A17	A16	160	.17	2.84	27	321	0.3209	6.27619	5	1.33708	6.685416667	1.7040	8.3894	0.250	0.0052	0.015	0.0491	37.165	0.757118325	22.57%	0.612	4.724	84.406	75.000	84.016	4.534	0.060	
A18	Local Road 14	A18	A17	110	.42	2.07	46	228	0.2277	6.72198	5	0.94875	4.74375	1.2420	5.9858	0.250	0.0050	0.015	0.0491	36.4432	0.742415598	16.42%	0.548	3.559	84.891	85.000	84.466	4.664	0.060	
A19	Local Road 14	A19	A18	110	.47	1.06	52	117	0.1166	7.68476	5	0.48583	2.429166667	0.6360	3.0652	0.250	0.0050	0.015	0.0491	36.4432	0.742415598	8.41%	0.451	3.707	85.276	71.000	84.921	3.529	0.030	
A20	Local Road 14	A20	A19	0	0	0.59	0	65	0.0649	8.64015	5	0.27042	1.352083333	0.3540	1.7061	0.250	0.0050	0.015	0.0491	36.4432	0.742415598	4.68%	0.379	3.864	85.586	50.000	85.336	3.647	0.060	
A21	Local Road 14	A21	A20	110	.59	0.59	65	65	0.0649	8.64015	5	0.27042	1.352083333	0.3540	1.7061	0.200	0.0075	0.015	0.0314	24.617	0.783584871	6.93%	0.450	4.784	86.386	100.000	85.636	3.864	0.050	
A22	Local Road 13	A22	A17	110	.6	0.60	66	66	0.0660	8.61115	5	0.275	1.375	0.3600	1.7350	0.200	0.0075	0.015	0.0314	24.617	0.783584871	7.05%	0.452	5.072	85.064	81.000	84.457	4.723	0.051	
A23	Local Road 15	A23	A18	110	.59	0.59	65	65	0.0649	8.64015	5	0.27042	1.352083333	0.3540	1.7061	0.200	0.0200	0.015	0.0314	40.1995	1.279588736	4.24%	0.635	3.427	86.701	88.000	84.941	3.559	0.050	
A24	Local Road 12	A24	A4	110	1.19	1.89	131	208	0.2079	6.8454	5	0.86625	4.33125	1.1340	5.4653	0.250	0.0050	0.015	0.0491	36.4432	0.742415598	15.00%	0.534	6.062	85.168	148.000	84.428	6.292	0.200	
A25	Local Road 12	A25	A24	110	.7	0.70	77	77	0.0770	8.34972	5	0.32083	1.604166667	0.4200	2.0242	0.200	0.0200	0.015	0.0314	40.1995	1.279588736	5.04%	0.668	5.282	86.658	72.000	85.218	6.062	0.050	
A26	Local Road 7	A26	A4	110	.68	4.05	75	215	0.2147	6.80127	5	0.89473	4.473625	2.4300	6.9036	0.250	0.0120	0.015	0.0491	56.4576	1.1501453	12.23%	0.780	7.094	85.916	124.000	84.428	6.292	0.200	
A27	Local Road 7	A27	A26	40	1.86	3.37	74	140	0.1399	7.40944	5	0.58306	2.915291667	2.0220	4.9373	0.250	0.0150	0.015	0.0491	63.1215	1.285901537	7.82%	0.765	5.084	87.206	82.000	85.976	7.034	0.060	
A28	Local Road 7	A28	A27	43	1.51	1.51	66	66	0.0655	8.62336	5	0.27306	1.365291667	0.9060	2.2713	0.200	0.0260	0.015	0.0314	45.8344	1.458955631	4.96%	0.759	3.900	88.920	64.000	87.256	5.084	0.050	
A29	Local Road 5	A29	A5	110	.76	1.13	84	124	0.1243	7.5871	5	0.51792	2.589583333	0.6780	3.2676	0.250	0.0210	0.015	0.0491	74.6864	1.521499217	4.38%	0.762	4.955	87.167	107.000	84.920	6.400	0.125	
A30	Local Road 5	A30	A29	110	.37	0.37	41	41	0.0407	9.4853	5	0.16958	0.847916667	0.2220	1.0699	0.200	0.0300	0.015	0.0314	49.2341	1.567169742	2.17%	0.637	3.560	89.077	62.000	87.217	4.955	0.050	
A31	Local Road 6	A31	A5	110	.69	0.69	76	76	0.0759	8.37378	5	0.31625	1.58125	0.4140	1.9953	0.200	0.0300	0.015	0.0314	49.2341	1.567169742	4.05%	0.767	4.589	87.970	100.000	84.970	6.400	0.175	
A32	Local Road 5	A32	A6	110	.81	0.81	89	89	0.0891	8.10951	5	0.37125	1.85	0.4860	2.3360	0.200	0.0300	0.015	0.0314	49.2341	1.567169742	4.74%	0.804	4.600	88.225	93.000	85.435	6.555	0.175	
A33	Local Road 4	A33	A6	110	.81	2.29	89	252	0.2519	6.58756	5	1.04958	5.247916667	1.3740	6.6219	0.250	0.0120	0.015	0.0491	56.4576	1.1501453	11.73%	0.771	5.482	87.209	152.000	85.385	6.555	0.125	
A34	Local Road 4	A34	A33	110	.81	1.48	89	163	0.1628	7.18851	5	0.67833	3.391666667	0.8880	4.2797	0.250	0.0160	0.015	0.0491	65.1917	1.328073397	6.56%	0.751	3.297	88.533	79.000	87.269	5.422	0.060	
A35	Local Road 3	A35	A34	110	.43	0.67	47	74	0.0737	8.42319	5	0.30708	1.535416667	0.4020	1.9374	0.200	0.0100	0.015	0.0491	51.5385	1.049934208	3.76%	0.503	3.095	89.183	57.000	88.593	3.237	0.060	
A36	Local Road 3	A36	A35	110	.24	0.24	26	26	0.0264	10.3431	5	0.11	0.55	0.1440	0.6940	0.200	0.0150	0.015	0.0314	34.8138	1.108156352	1.99%	0.439	2.805	89.783	38.000	89.213	3.095	0.050	
A37	Local Road 1	A37	A7	110	.85	1.56	94	172	0.1716	7.11323	5	0.715	3.575	0.9360	4.5110	0.250	0.0150	0.015	0.0491	63.1215	1.285901537	7.15%	0.745	6.079	87.607	118.000	85.835	6.905	0.125	
A38	Local Road 1	A38	A37	110	.71	0.71	78	78	0.0781	8.32607	5	0.32542	1.627083333	0.4260	2.0531	0.200	0.0280	0.015	0.0314	47.5646	1.51402981	4.32%	0.755	4.899	89.307	59.000	87.655	6.079	0.050	
A39	Local Road 3	A39	A8	160	.79	0.79	126	126	0.1264	7.56172	5	0.52667	2.633333333	0.4740	3.1073	0.200	0.0075	0.015	0.0314	24.617	0.783584871	12.62%	0.536	6.015	86.855	72.000	86.315	7.095	0.175	
A40	Local Road 2	A40	A8	110	.61	1.74	67	259	0.2592	6.55003	5	1.08	5.4	1.0440	6.4440	0.250	0.0120	0.015	0.0491	56.4576	1.1501453	11.41%	0.765	5.949	87.681	118.000	86.265	7.095	0.125	
A41	Local Road 1	A41	A40	170	1.13	1.13	192	192	0.1921	6.95448	5	0.80042	4.002083333	0.6780	4.6801	0.200	0.0140	0.015	0.0314	33.6333	1.070580746	13.92%	0.754	5.597	89.103	98.000	87.731	5.949	0.050	
A42	External Drainage (South of Hwy. 8)	AExt2	A9	120	24.22	24.22	2906	2906	2.9064	4.03923	4.03923	12.11	48.91511406	14.5320	63.4471	0.375	0.0050	0.015	0.1104	107.447	0.972839645	59.05%	1.013				86.535	7.390		ppha of 120 Assume for external input, Sewer from AExt2 to A9 just dummy for input
B2	Easement	B2	B1	0	0	2.84	0	312	0.3124	6.30998	5	1.30167	6.508333333	1.7040	8.2123	0.250	0.0075	0.015	0.0491	44.6337	0.909269697	18.40%	0.693	7.012	85.991	64.000	85.511	5.100	Low End	
B3	Local Road 10	B3	B2	110	.89	0.89	98	98	0.0979	7.95817	5	0.40792	2.039583333	0.5340	2.5736	0.250	0.0050	0.015	0.0491	36.4432	0.742415598	7.06%	0.429	5.212	86.711	144.000	85.991	7.012	0.000	
B4	Local Road 10	B4	B2	0	0	1.95	0	215	0.2145	6.80275	5	0.89375	4.46875	1.1700	5.6388	0.250	0.0055	0.015	0.0491	38.222	0.778652049	14.75%	0.557	7.129	86.541	89.000	86.051	6.952	0.060	
B5	Local Road 10	B5	B4	110	.35	1.95	39	215	0.2145	6.80275	5	0.89375	4.46875	1.1700	5.6388	0.250	0.0055	0.015	0.0491	38.222	0.778652049	14.75%	0.557	6.393	86.887	52.000	86.601	7.069	0.060	
B6	Local Road 10	B6	B5	110	.79	0.79	87	87	0.0869	8.15016	5	0.36208	1.810416667	0.4740	2.2844	0.200	0.0075	0.015	0.0314	24.617	0.783584871	9.28%	0.490	4.983	87.642	94.000	86.937	6.393	0.050	
B7	Local Road 11	B7	B5	110	.81	0.81	89	89	0.0891	8.10951	5	0.37125	1.85625	0.4860	2.3423	0.200	0.0075	0.015	0.0314	24.617	0.783584871	9.51%	0.494	3.076	87.724	105.000	86.937	6.393	0.050	
C1	Glover Road	C2	C1	110	1.79	6.35	197	845	0.8454	5.17079	5	3.52254	17.61270833	3.8100	21.4227	0.375	0.0051	0.015	0.1104	108.516	0.98251988	19.74%	0.764	5.419	87.206	187.000	86.252	4.640	Low End	
C2	Glover Road	CExt1	C2	106	1.61	1.61	171	171	0.1707	7.12104	5	0.71108	3.555416667	0.9660	4.5214	0.375	0.0040	0.015	0.1104	96.1034	0.870134231	4.70%	0.445	5.200	88.623	45.000	88.500	4.125	1.294	
C3	Local Road 3	C3	C2	0	0	2.95	0	478	0.4779	5.79578	5	1.99104	9.955208333	1.7700	11.7252	0.250	0.0050	0.015	0.0491	36.4432	0.742415598	32.17%	0.662	5.689	87.881	110.000	87.331	5.419	0.125	
C4	Local Road 16	C4	C3	110	.51	2.95	56	478	0.4779	5.79578	5	1.99104	9.955208333	1.7700	11.7252	0.250	0.0050	0.015	0.0491	36.4432	0.742415598	32.17%	0.662	4.604	88.306	73.000	87.941	5.629	0.060	
C5	Local Road 16	C5	C4	0	0	1.05	0	179	0.1785	7.05736	5	0.74375	3.71875	0.6300	4.3488	0.250	0.0055	0.015	0.0491	38.222	0.778652049	11.38%	0.517	3.330	88.658	53.000	88.366	4.544	0.060	
C6	Local Road 16	C6	C5	170	1.05	1.05	179	179	0.1785	7.05736	5	0.74375	3.71875	0.6300	4.3488	0.200	0.0075	0.015	0.0314	24.617	0.783584871	17.67%	0.591	3.416	89.240	71.000	88.708	3.330	0.050	
C7	Local Road 16	C7	C4	175	1.39	1.39	243	243	0.2433	6.63376	5	1.01354	5.067708333	0.8340	5.9017	0.200	0.0075	0.015	0.0314	24.617	0.783584871	23.97%	0.644	3.068	89.300	79.000	88.708	4.252	0.402	



FILENAME: C:\PROJECTWISE\WORKING DIRECTORY\ACTIVE\31RL\DMS91474\151936 SAN DRAINAGE PLAN.DWG PLOTTED BY: LECOMPTE, ROZANNE
PLOT DATE: 2018-05-25 @ 2:58:14 IN PLOT SCALE: 1:1 PLOT STYLE: DILLON-STANDARD.CTB

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DESIGN	MH
REVIEWED BY	DYO
DRAWN	RLL
CHECKED BY	DV
DATE	MAY 2018
SCALE	1:2500

Block 2 - Fruitland-Winona
Block Servicing Strategy

Sanitary Drainage Plan

PROJECT NO. 15 1936

SHEET NO. **Fig 5.12**

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix B

Watermain Hydraulic Report

MEMO

TO: Dave Maunder, P.Eng., Principal (Aquafor Beech Limited)

FROM: Matthew Murdock, P.Eng.
Doug Onishi, P.Eng.

cc: Margaret Fazio, Senior Project Manager, Infrastructure Planning (City of Hamilton)

DATE: May 31, 2018

SUBJECT: Fruitland-Winona Block 2 Servicing Strategy– Watermain Hydraulic Report (Revised)

OUR FILE: 15-1936

Introduction

Dillon Consulting Limited (Dillon) was retained by **Aquafor Beech Limited** to evaluate the infrastructure servicing for the Fruitland-Winona Block 2 Servicing Strategy. This memorandum provides an analysis of the proposed water system servicing at a functional design level consistent with the City development guidelines (City of Hamilton, 2016). In particular, the present analysis is consistent with the evaluation criteria described in Appendix A.4 of that document under *"Uncertain high density residential or ICI usage associated with Block Servicing"*. Consequently, the demand criteria assessed are outlined in detail in this document. Additional design criteria are adapted from provincial guidelines (Ontario Ministry of the Environment and Climate Change, 2008).

The study area is bounded in the north and south by Barton Street and Highway No. 8 respectively. The west and east are bounded by Watercourse 6 and Glover Road respectively. The area is predominantly planned for residential use with park and greenspace. The total serviceable area, based on proposed zoning approach and secondary plan densities, includes an estimated demand population of approximately 3,900 capita equivalent. Existing serviced lands include institutional and arterial commercial already serviced by water systems on Highway No. 8 and Glover Road and are not included in the above capita equivalency estimate. These properties are not considered further in the present analysis as they do not represent additional projected demands.

Criteria

The following sections outline the analysis criteria for the proposed block servicing.

Domestic Demand

The study area design criteria are established on the basis of existing data as extracted from the hydraulic model provided by the City and the provincial design guidelines. A design basis is established from the more conservative of the available sources and is summarized in **Table 1** below.

Table 1: Watermain Design Demand Basis for Evaluation

Demand Scenario	MOECC Design Basis [1]	City Model [2]	Design Basis
Per Capita Demand [L/c/d]	270 to 450	281	420 [4]
Maximum Day Peak Factor [xADD]	2.00 [3]	2.00	2.00
Peak Hour Peak Factor [xADD]	3.00 [3]	2.99 (3.80) [5]	3.80

1. Refer to (Ontario Ministry of the Environment and Climate Change, 2008) Chapter 3, Part 3.4.2 Domestic Water Demands
2. City of Hamilton coarse trunk system water model version 7.2 as provided by the City, present demand and factors based on model 2011 average day demand of 212,595.3 m^3/d and census population of 756,600 (Statistics Canada, 2012). Maximum day and peak hour peaking factors are calculated from model 2011 maximum day and maximum hour demands of 424,979.6 m^3/d and 636,217.5 m^3/d respectively. All demands and peaking factors are based on blended sources including residential and ICI.
3. Peaking factors per Table 3-1 (Ontario Ministry of the Environment and Climate Change, 2008) for population between 3001 to 10000.
4. The per capita demand of 360 L/c/d is used for design of sanitary sewers as adapted from the sanitary sewer design flow per engineering guidelines (City of Hamilton, 2016), (City of Hamilton, 2012). A factor of approximately 85% is allowed as the recovery rate for potable water to sanitary flow resulting in a per capita demand of 420 L/c/d. This value is considered conservative versus existing average day demand represented in the model and is between the design values provided by MOECC.
5. A peak hour factor, based on capital value of 2052, of 3.80 is calculated from the Harmon formula for a population of 3900 equivalent and is conservatively applied as the design basis as noted.

Fire Flow Demand

With regard to fire flow, the typical approach for development servicing is to calculate a flow requirement according to a standard methodology (Fire Underwriters Survey,

1999). The methodology requires detailed knowledge of the architectural design of proposed buildings. This level of detail is not known at this time. Consequently, the alternative approach used in this evaluation is to overlay anticipated available fire flow capacity as observed by hydrants within the development watermain network as calculated within a water system model. This approach is consistent with the City's policies, specifically, Appendix A.4, as noted earlier. The future site-specific development applications would be required to identify actual fire requirements and confirm that the requirements do not exceed the design allowance of this evaluation. See **Attachment A** for further details. In particular, future detailed design of the proposed development shall be required to demonstrate that alteration and development of the drinking water system will comply with Form 1 requirements, including the requirement that district pressure meet or exceed 140 kPa (20 psi) supply pressure under year 2031 maximum day demand with fire flow.

A hydrant capacity approach is used to establish a design basis for fire flow requirements, with a standard classification adopted from NFPA 291 (National Fire Protection Association, 2016) as summarized in **Table 2** below. This evaluation will seek an available fire flow capacity equal or superior to Class AA.

Table 2: NFPA 291 Fire Hydrant Flow Classification

Hydrant Class	Flow Capacity	
	[US GPM]	[L/s]
Class AA	> 1500	**> 94.6**
Class A	1000 to 1499	63.1 to 94.6
Class B	500 to 999	31.5 to 63.0
Class C	< 500	< 31.5
FUS 1999 Credit Range	-	16.7 to 33.3

Boundary Conditions

The simulations were performed using boundary condition parameters according to the default settings in the coarse water model provided by the City. In particular, the following boundary conditions relevant to the study are observed for all model scenarios:

- Grimsby Supply (Reservoir): 151.16 m HGL
- HDR1C Tank: 132.16 m HGL
- HWHLP-PMP-2: Active
- HWHLP-PMP-3: Active
- HD04B-PMP-1: Active
- HD05A-PMP-2: Active
- HD05A-PMP-3: Active
- HD05A-PMP-4: Active

The water distribution network surrounding the study area as potential points of connection include (clockwise from north-west):

- 400 mm Barton Street between Jones Road and Glover Road;
- 400 mm Glover Road between Barton Street and Highway No. 8;
- 200 mm Highway No. 8 between Glover Road and Jones Road; and,
- 300 mm Jones Road between Highway No. 8 and Barton Street.

This system is further reinforced along the northern segment with interconnection to a 750 mm watermain along Barton Street. See
Figure 1 below for a summary of the proposed study area and existing watermains.

Subdivision Computer Model

The design pressures for services on the watermain network are defined in Section 10.2.2 of the provincial guideline (Ontario Ministry of the Environment and Climate Change, 2008) and are summarized in **Table 3** below.

Table 3: Watermain Design Pressure for Evaluation

Condition	Maximum	Normal Operation	Fire Flow
Pressure [kPa]	700	350 to 480	> 140

The watermain network was modeled using road rights-of-way and a main north-south spine with box-grid services along collector roads. The model assumes Hazen-Williams coefficient of friction (C-Factor) in accordance with Table 10-1 of the provincial guideline for distribution design (Ontario Ministry of the Environment and Climate Change, 2008). The resulting C-Factors are 100, 110, and 120 for pipe sizes of 150 mm. 200 mm. and 300 mm respectively. These friction factors are considered conservative versus new PVC pipe with documented long-term C-factors in excess of 140. The water model elevations were set to grade elevation based on topographical contour data. This approach slightly underestimates service pressure observed at pipe depth, but provides results closer to hydrant pressure. The proposed watermain network is presented with pipe diameters in **Figure 1** below.

Figure 1: Fruitland-Winona Block Servicing Model Representation (BSS Drawing Fig-5.11)

Analysis

Water demands were applied to the network according to proposed land use and per capita demand. The total build-out demand is 20.7 L/s under average day conditions. The network was simulated under the following future conditions representing year 2031 background system demand within the coarse pipe model provided by the City:

- Scenario 1: future peak hour conditions (PHD 2031);
- Scenario 2: future maximum day (MDD 2031);
- Scenario 3: present average day (MDD 2011); and,
- Scenario 4: future maximum day plus fire flow (MDD 2031 + FF).

The hydraulic results are summarized in the following sections.

System Pressures and Available Fire Flow

The pressure and available fire flow results are summarized in **Table 4** below according to the scenarios described above. The 200 mm east-west lateral through the proposed roundabout and the 300 mm north-south main from Barton Street to the roundabout were both upsized to meet fire flow design basis for all but two locations as noted.

Table 4: Model Results for Block Servicing

Statistic	Scenario 1 PHD 2031	Scenario 2 MDD 2031	Scenario 3 ADD 2011	Scenario 4 MDD+FF
	[kPa]	[kPa]	[kPa]	[L/s]
Minimum	349.7	365.9	377.0	71.1
Maximum	414.1	430.2	442.2	> 150
Average	375.9	392.4	403.8	> 95
Meets Evaluation Criteria	**Yes**	**Yes**	**Yes**	**See Note 1**

1. The proposed evaluation criterion for available fire flow is met at all model nodes except the two cul-de-sac locations. These two locations are anticipated to meet the NFPA 291 Class A flow conditions.

The Fruitland-Winona block study area pressure district was reviewed under the fire flow analysis (Scenario 4) for residual pressure within the system. All model nodes were found to have residual pressure of greater than 140 kPa within the broader study area context, including pressure districts No. 1, No. 4, and No. 10 as shown in **Figure 2** below.

The hydraulic modelling demonstrates that the servicing study will meet the requirements of anticipated fire flow including supply pressure greater than or equal to 140 kPa (20 psi) under 2031 maximum day plus fire flow demand and within the

limitation of available design detail. Detailed design of the future development shall be required to demonstrate at the draft site plan stage that alteration and development of the drinking water system will comply with Form 1 requirements.

Figure 2: Model Study Area (Circled) and Pressure District Context (Red)

Transient Pressures

The system is not evaluated for transient pressures at this stage of design as final materials have not been selected. A transient analysis should be performed at the detailed design stage.

System Flushing

The system is not evaluated for final flushing arrangement as the location of hydrants and final watermain configuration should be established at detailed design. The proposed configuration includes two cul-de-sac locations with potential dead-end connections that will require consideration. Developers will be required to maintain an adequate chlorine residual through water quality flushing or other means until adequate chlorine residual is established. The system needs to be evaluated for final flushing arrangement during detailed design when the hydrant placement is being finalized along with alternative connections and valve placement.

System Resilience

The block servicing geometry provides for two potential interconnection opportunities to Jones Road and to Glover Road. One or both of these alternatives could be used to reinforce the Highway No. 8 interconnection or possibly defer the connection according to build-out phasing. The Jones Road connection could be extended through the buffer area with directional drilling or other alternative construction means to reduce impacts. The hydraulic benefit of these two alternative connections should be reviewed for merit during detailed design. Overall impacts to water age were not reviewed, but could be considered during detailed design particularly if development phasing is anticipated to span a long period.

The draft site plan submissions shall comply with City standards for minimum number of system connections; in particular, at the time of this report, the standard for servicing areas with more than 100 units shall require a secondary connection. Based on the information available at the time of this report, a watermain connection on Local Road 3 west of Local Road 16 across Watercourse 7.0 could be considered during detailed design.

Conclusions

The block servicing strategy for the proposed study area is evaluated according to City and provincial standards. The coarse water model provided by the City was used to evaluate the proposed watermain network and projected build-out demands under a number of scenarios. The following conclusions from the analysis and evaluation are made:

- The service pressures under ultimate build-out (currently 2031) conditions are expected to range between 350 kPa and 442 kPa, which are within standards established by the MOECC and the City of Hamilton guidelines;

- Required fire flows can be achieved under maximum day demand conditions for the proposed development under existing and ultimate build-out (currently 2031) conditions with the exceptions as noted for Table 4; and,
- Under maximum day plus required fire flows for ultimate build-out conditions, the pressure area bounding the study area is not observably impacted per model results and the system is expected to maintain pressures above 140 kPa at ground level at all points in the study area.

The system presented may benefit from one or more alternatives for interconnection at Jones Road or Glover Road. Hydraulic merit of these interconnections should be reviewed at detailed design as a means to facilitate development phasing. Anticipated water age could be evaluated in more detail; however, the City model would require extended period simulation validation data.

Works Cited

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Attachment A

M.1.4. Appendix A.4 of City Development Guidelines (City of Hamilton, 2016)

M.1.4. Appendix A.4 - Guide to Technical Documents Required for Various Applications

Water Distribution System Evaluation Criteria for Development			
Type of Development	**Peak Demand Calculation**	**Required Fire Flow (RFF) Calculation**	**Hydraulic Modeling (WaterCAD)**
Parking lots, restaurant patios, street furniture additions, site plans in areas not serviced by municipal water	Not required	Not required	Not required
1-2 Single Family residential or 1 semi-detached unit on an infill lot	Not required; will use assessment, census, MP values for modeling	Not required unless planning documents indicate abnormally large floor area (i.e. monster homes)	Will look at hydrant flow tests in Hansen and identify if there is a low flow/pressure issue; may result in programming a Capital work
Groups of 3-5 single family homes	Not required; will use assessment, census, MP values for modeling	Required; need proponent to identify spacing of units, materials of construction, floor areas	Typically screen RFF at location versus flow tests to determine strength/adequacy of supply Where system is weak (district boundary, extremity of system, older area) may ask for investigation
Subdivision developments in excess of 5 homes (Note this typically means watermain extensions and hence Form 1 application)	Required in order to modify model demands to analyse pre- and post-development	Required; need proponent to identify spacing of units, materials of construction, floor areas	Required to support Form 1 application and demonstrate that no point in district will fall below 140 kPa under Max Day + fire demands
Townhouse Blocks (1 or 2 blocks, 2-4 units/block, separation > 3m)	Required; fixture unit method recommended	Required; need proponent to identify spacing of blocks, materials of construction, total floor areas	Will screen location against flow test results For small townhouse blocks and where system is weak may ask for impact investigation May involve redesign of building to incorporate fire walls, brick exterior to reduce Required Fire flows
Townhouse Blocks (3 or more blocks, 4-8 units/block, separation 3m +/-)	Required; fixture unit method recommended	Required; need proponent to identify spacing of blocks, materials of construction, total floor areas	Will screen location versus flow test results In most cases will ask for demonstration that required flows can be delivered May involve redesign of building to incorporate fire walls, brick exterior to reduce Required Fire flows
Uncertain high density residential or ICI usage associated with Block Servicing	Estimate required which will be compared to submission at site plan stage	Estimate typical of zoning required which will be compared to submission at site plan stage	Hydraulic analysis required based on Block servicing assumptions to establish an upper limit on development. At site plan submission proposal will be compared to assumption and 1. if usage or RFF less than Block servicing assumption no need for further analysis 2. If usage or RFF greater than Block servicing assumption, supplemental analysis required
Nursing homes, senior's residences, dormitories , hotels(new construction and additions)	Required; fixture unit method recommended	Required; need proponent to identify materials of construction, total floor area(addition or entire building depending on fire separation)	Will screen location versus flow test results For small addition separated by 2hr rated fire walls likely no modeling required but where system is weak may ask for impact investigation regardless For larger buildings with <2hr fire separation will ask for demonstration that required flows can be delivered May involve redesign of building to incorporate fire walls, brick exterior to reduce Required Fire flows
Schools, hospitals	Required; fixture unit method recommended number of students, beds, special fixtures (pools, equipment) to be defined	Required; need proponent to identify materials of construction, total floor areas(addition or entire building depending on separation)	Will screen location versus flow test results For small addition separated by 2hr rated fire walls likely no modeling required but where system is weak may ask for impact investigation regardless For larger buildings with <2hr fire separation will ask for demonstration that required flows can be delivered May involve redesign of building to incorporate fire walls, brick exterior to reduce Required Fire flows

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix C

Air Drainage Analysis Report

Dillon Consulting Limited:
Air Drainage Analysis for Block 2-Fruitland-Winona Block Servicing Strategy (Stoney Creek Urban Boundary Expansion), City of Hamilton, ON, Canada

To: Dillon Consulting Limited
Suite 200-51 Breithaupt Street, Kitchener, ON, N2H 5G5

Date June 12, 2017

From: Dr. Diar Hassan, Ron Bianchi, and André Poirier
Amec Foster Wheeler, Ottawa

Dr. Kevin Ker (Agrobiologist)
KCMS Applied Research and Consulting, Fenwick ON

Executive Summary – Air Drainage Analysis Dillon Consulting Limited

The City of Hamilton requires an Air Drainage Analysis for the Block 2-Fruitland-Winona Block Servicing Strategy Area, Urban Hamilton Official Plan, Stoney Creek Urban Boundary Expansion (the SC-Plan) area located within the City of Hamilton in southern Ontario, Canada.

The desktop analysis includes a review of the area's topography and an analysis of the area's climatology.

The objective of this analysis is to study the effect of the proposed development within the SC-Plan to the micro-climate in the region. Of particular interest to the study is the impact of the positioning of a cul-de-sac within the SC-Plan.

Archived climate data for three nearby weather stations indicates that the predominant winds will be from the west and southwest direction. Furthermore, the data have shown December and February being the months with the highest number of fog occurrences while freezing fog was more frequent during February.

There are two types of low temperature injury conditions: advection frost and radiation frost during the growing season and advection freeze and radiation freeze during the dormant period. Advection frost is a regional frost event and it occurs when low temperature air masses which originate from northern regions move into the area. This kind of event can be understood through the analysis of climatological data and the topography of the region. Radiation frost is a micro-scale climate event and is generally site specific. Radiation frost is typically caused by cold air accumulation near the ground surface, which can occur in the spring or fall. Low temperature freeze events occur during the winter months when plants are not actively growing but are in a dormant state to survive winter conditions.

Tender fruit trees and wine grapes can be damaged in the winter due to very low temperatures that go below their acclimation points. The damage often includes cracking of trunks and branches, the death of flower and leaf buds or total death of trees and vines.

Following the desktop analysis of the microclimate and the topography in the area contained by the current SC-Plan (Figure 3), the proposed development is not expected to block the southwesterly-to-northeasterly direction air flow. The new development is not expected to impede the natural air movement and may assist in mixing the boundary air layer (a layer near the ground) by creating eddies (turbulences), thus aid in streaming any cold air descending from the Niagara Escarpment, i.e. preventing air stagnation. Meanwhile, the roads (existing and proposed), the Watercourses and the natural open spaces outlined in the SC-Plan will help to channel the air downstream toward Lake Ontario.

The current position of the cul-de-sac outlined in Figure 3 (adjacent to Highway No. 8 to the west of the Collector Road) with its narrow opening on Highway No. 8 may aid in the air drainage process (south-to-north), but its contribution is expected to be minimal. Relocating the Cul-de-sac further north is not expected to affect the overall air drainage process. It is recommended to retain the narrow opening on Highway No.8 if the cul-de-sac is to be relocated.

CONTENTS

1. INTRODUCTION

The City of Hamilton requires an Air Drainage Analysis for the Block 2-Fruitland-Winona Block Servicing Strategy Area, Urban Hamilton Official Plan, Stoney Creek Urban Boundary Expansion Tertiary Plan (hereafter called the SC-Plan) area in Ontario, Canada. The subject lands are shown in Figure 1 and are generally bounded by Barton Street to the north, Highway 8 to the south, Glover Road to the East, and Jones Road to the West.

Amec Foster Wheeler was retained by Dillon Consulting Limited to conduct a desktop Air Drainage Analysis for a proposed development on the subject lands. The analysis evaluates the effect of the proposed development on the micro-climate in the region.

Topography influences the air flow movement and microclimatology of any area. Nocturnal cooling caused by radiation (emission of longwave radiation from the ground) is the main reason for cold air draining from mountains or higher elevations into valleys or lower ground under the influence of gravity. A katabatic wind is a term used to describe downslope air movement (e.g. downslope air movement from the Niagara Escarpment toward Lake Ontario). Solar et al. (2002) found that within an hour after sunset, larger variations in surface temperature developed with localized cooling were found in wind sheltered locations. The authors also found that stronger stratification conditions and weaker air flow produce deeper drainage current.

Downward heat fluxes and intermittent turbulences are expected to break down the air drainage flow few times during each night. Boundary layer flow acceleration and the reduction of Richardson number (buoyancy to flow shear ratio) are likely to increase mixing of the air near the ground with the air several meters higher (Solar et al. 2002).

New urban developments can alter the natural air flow pattern by blocking and/or affecting the air mixing and turbulences in the area. Such changes can, therefore, affect the micro-climate in that area. To study such effects, it is important to analyze the topography, current air flow, and climate conditions of the area.

Data from three nearby weather stations: Vineland, Burlington Piers, and Hamilton Airport, were collected for this purpose. Based on the archived data availability, the Burlington Piers and Vineland data were compiled for the period of January 2003 through the end of December 2015, whereas the Hamilton Airport data was compiled for the period of December 2011 through the end of December 2015.

The following sections will provide a geographical overview of the area, the SC-Plan, climatological maximum and minimum temperatures, prevailing winds, topography, and summary and conclusions of the air drainage analysis.

2.0 STONEY CREEK URBAN BOUNDARY EXPANSION (BLOCK 2)

The Stoney Creek community is located in the eastern part of the City of Hamilton, also known as Hamilton East, in southern Ontario, Canada. The community is situated between Lake Ontario to the north, the Niagara Escarpment to the south, the Hamilton city center to the west, and the Town of Grimsby to the east as shown in Figure 1 below. The unique climate and rich soil conditions in the area are favorable to the cultivation of fruits and vegetables.

Figure 1. Stoney Creek Urban Boundary Expansion (Block 2) area in light shaded pink. © Google Earth.

The Niagara Escarpment and Lake Ontario play a major role in moderating the temperature during winter and summer producing almost ideal climate conditions for wine and ice wine production in the area. In addition to the wine industry, the area is also well known for a variety of fruit crops including peaches, cherries, grapes, apples, pears, and strawberries. Figure 2 below shows the proposed development area in relation to the 2005 Greenbelt Area (dark green) produced by the Ministry of Agriculture and Food, Ministry of Municipal Affairs and Housing and Ministry of Natural Resources.

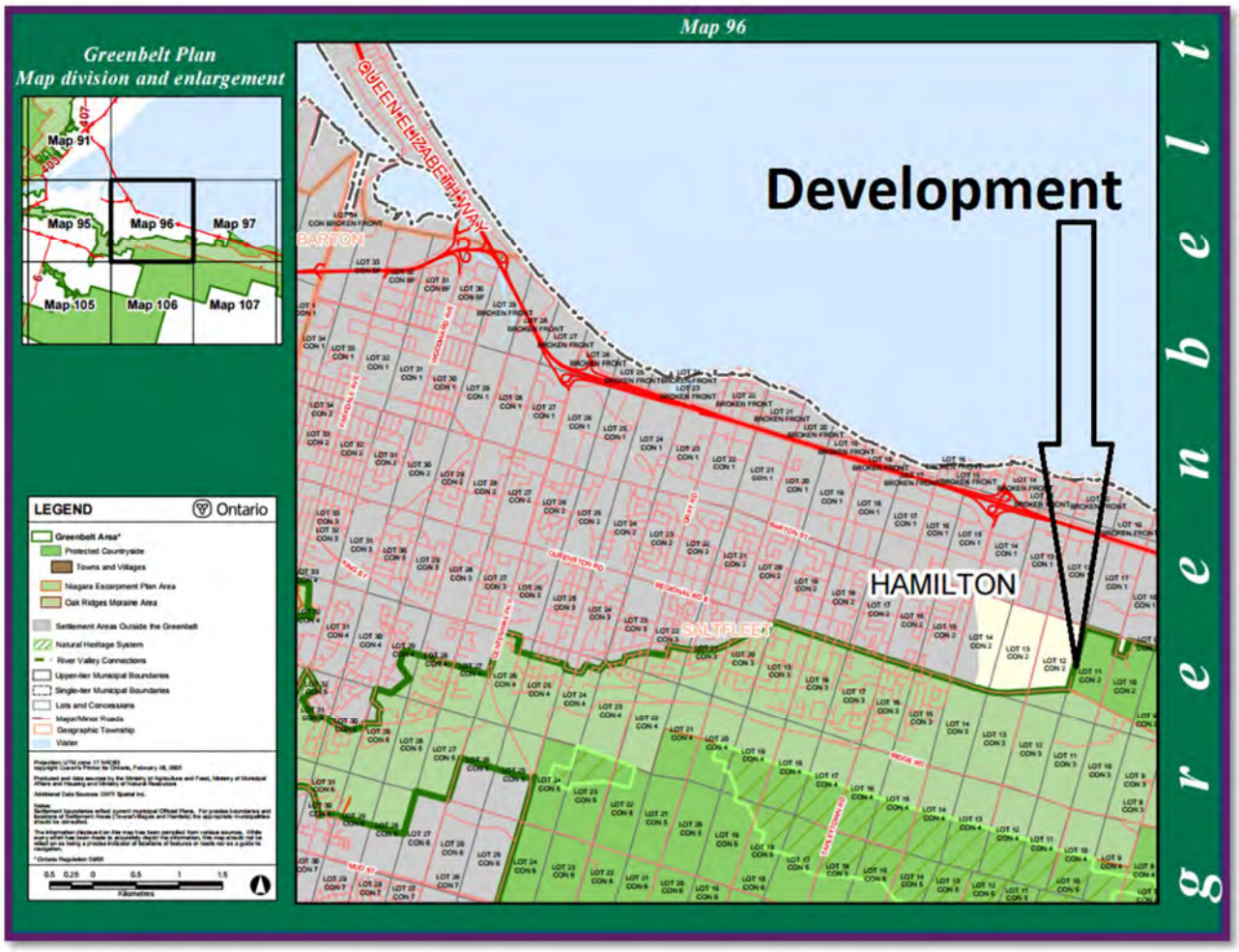


Figure 2. Map showing the Greenbelt Plan produced by the Ministry of Agriculture and Food, Ministry Affairs and Housing and Ministry of Natural Resources (2005).

3.0 BLOCK 2-FRUITLAND-WINONA BLOCK SERVICING STRATEGY TERTIARY PLAN (SC-PLAN)

The proposed development inside the SC-Plan consists of dwelling development in the area bounded by Barton Street to the north, Highway 8 to the south, Watercourse 6.0 to the west, and Glover Road to the east. Figure 3 shows the Block 2-Fruitland-Winona Block Servicing Strategy map provided by Dillon Consulting Limited. The major roads have north-north-east to south-south-west alignment (Jones Road, Collector Road, and Glover Road) and east to west alignment (Barton Street, Highway No. 8).

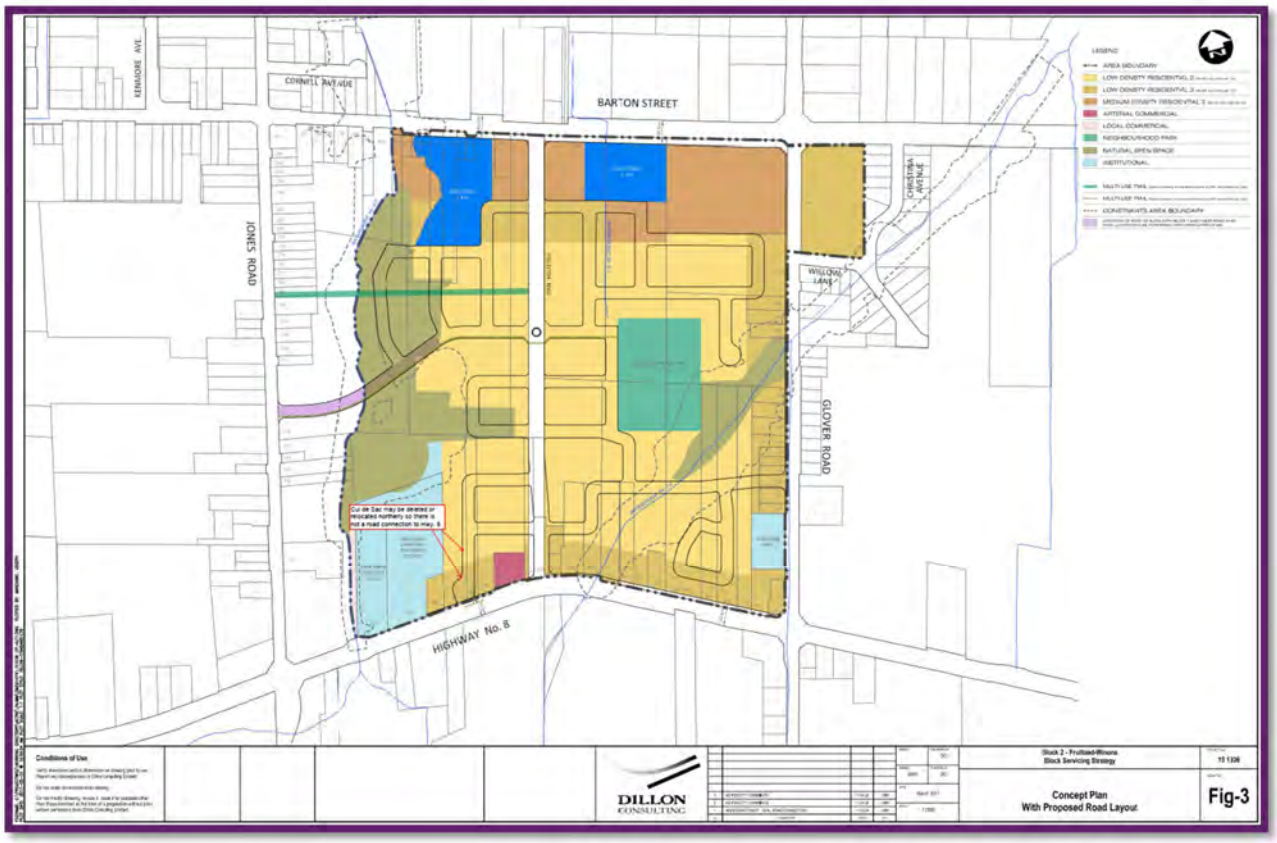


Figure 3. Stoney Creek Urban Boundary Expansion (Block 2) Tertiary Plan.

The proposed and uses in the SC-Plan are primarily mixed residential units (low and medium density), other land uses include commercial, Parklands, Stormwater Management (SWM), and Natural Open Spaces. The plan also features a new collector road (aligned south-south-west to north-north-east) approximately in the middle of the development, as well as two new east-west aligned roads connecting the new collector road to Jones Road on the west and to Glover Road on the east. The SC-Plan includes a proposed cul-de-sac adjacent to Highway No. 8 and to the west of the collector road (denoted by the Comment in Figure 3). This cul-de-sac may be shifted further north to a point that is approximately level with the corner of the Fruitland Christian Reformed Church property corner.

4. TEMPERATURE DISTRIBUTION

Climatological data from Environment and Climate Change Canada (ECCC) from the three weather stations were used in this analysis. Internal software was used to quality check the validity of the data and to produce several figures that are used in the analysis and presented in this document.

The two primary features in this area are the landscape – notably the Niagara Escarpment with lowlands near Lake Ontario, and Lake Ontario itself. These are among several features that contribute to the spatial temperature variation in the area. Figure 4 below depicts spatial temperature variations during fall, winter, and spring. When comparing the data from Vineland weather station (WS) with the data from the Hamilton Airport WS, the effect of the warmer marine environment and topography on the Vineland area is noticeable with observed maximum and minimum temperatures that are generally warmer than those observed at the Hamilton Airport WS.

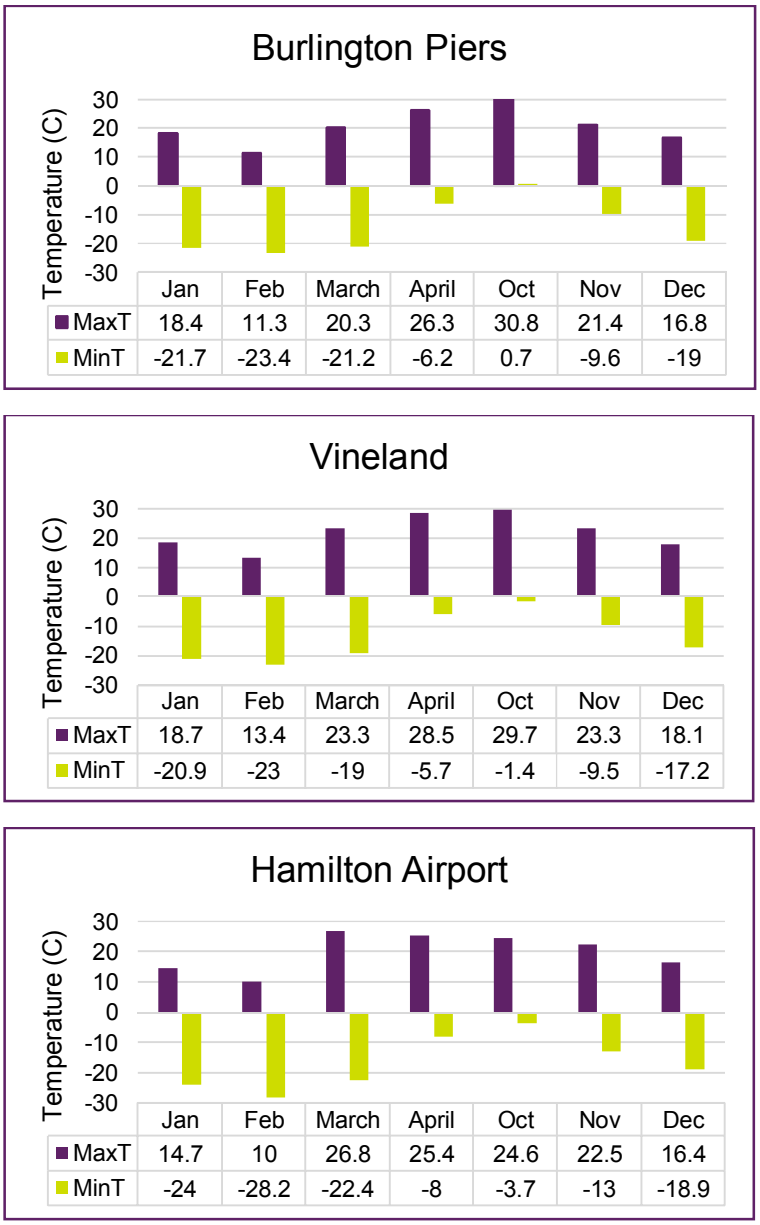
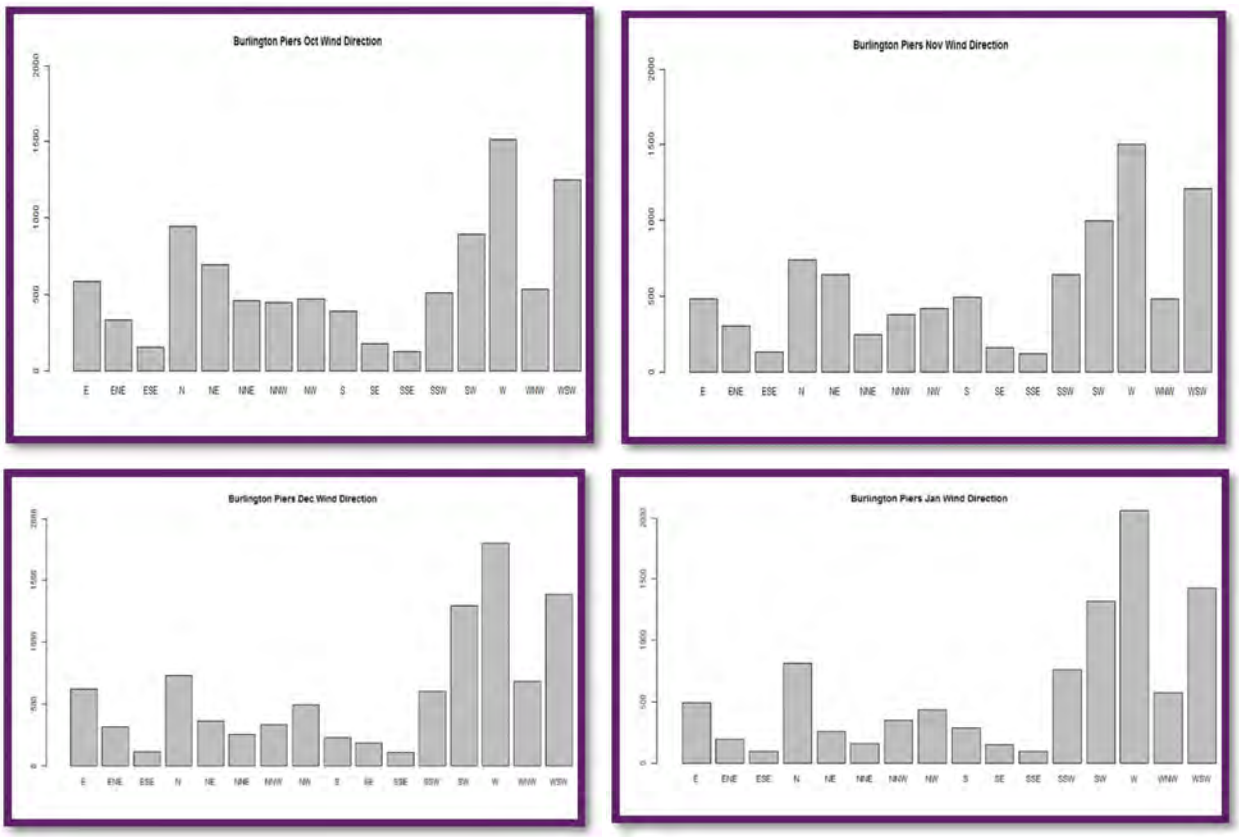


Figure 4. Maximum and Minimum Temperatures from the three weather station for the period starting January 2003 and ending December 2015.

5. WINDS

A. PREVAILING WINDS

To determine the prevailing orientation of the wind in the area, hourly data of wind direction collected from the three weather stations are plotted for the months of October through April. Figures 5 to 7 show the prevailing winds on a monthly basis at the three locations. The prevailing winds at Burlington Piers are westerly and southwesterly, while the north to the northeast is considered the second most common wind direction (Figure 5). Similarly, the Vineland prevailing winds are from the west and southwest during the winter season, while a north-to-east component of the winds become as prevalent during spring (Figure 6). The Hamilton station data also show that the prevailing winds are from the west and southwest direction (Figure 7).



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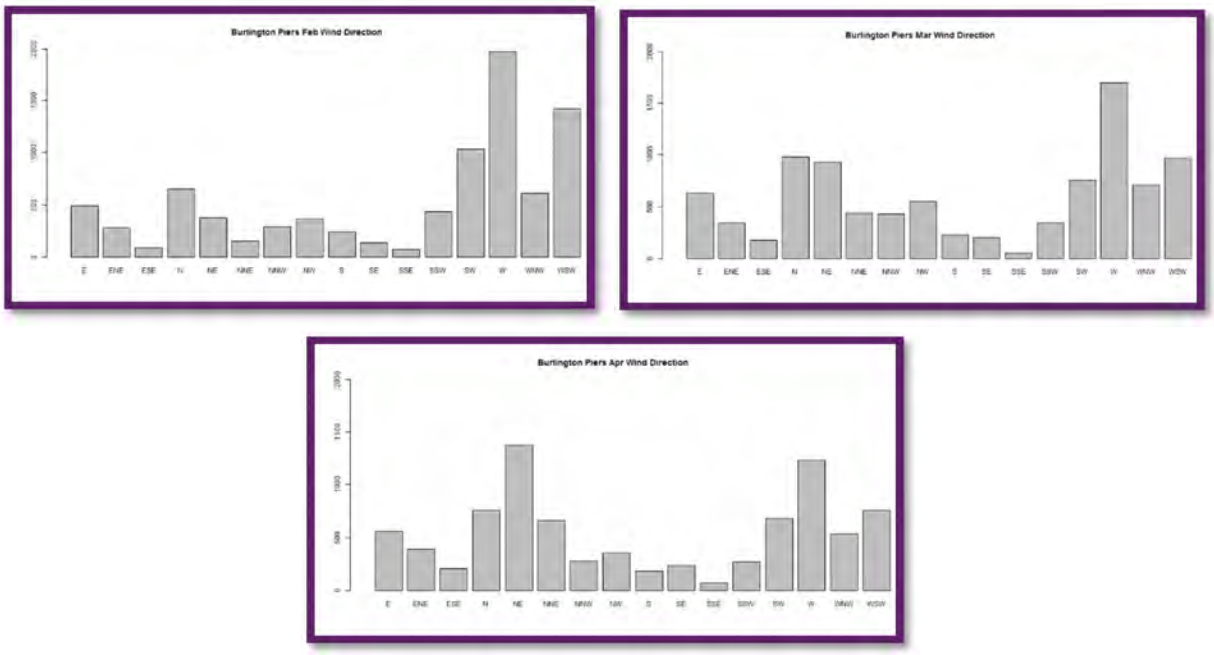
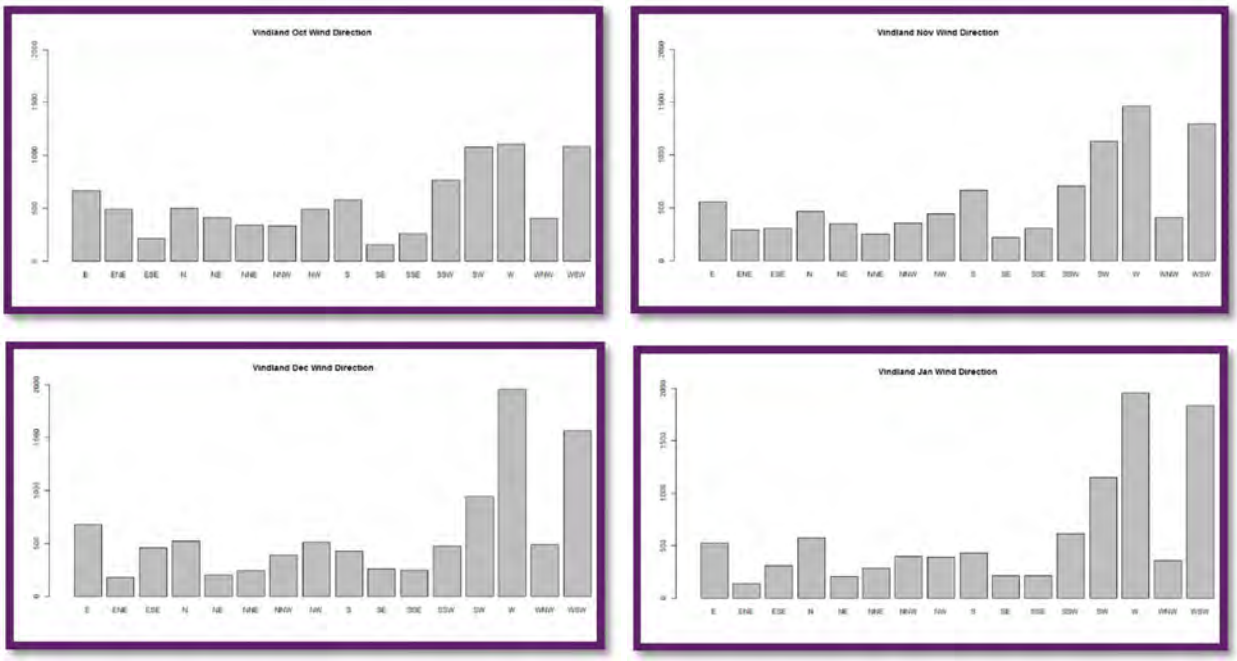


Figure 5. *The prevailing winds from Burlington Piers weather station for the months of October through April (2003-2015).*



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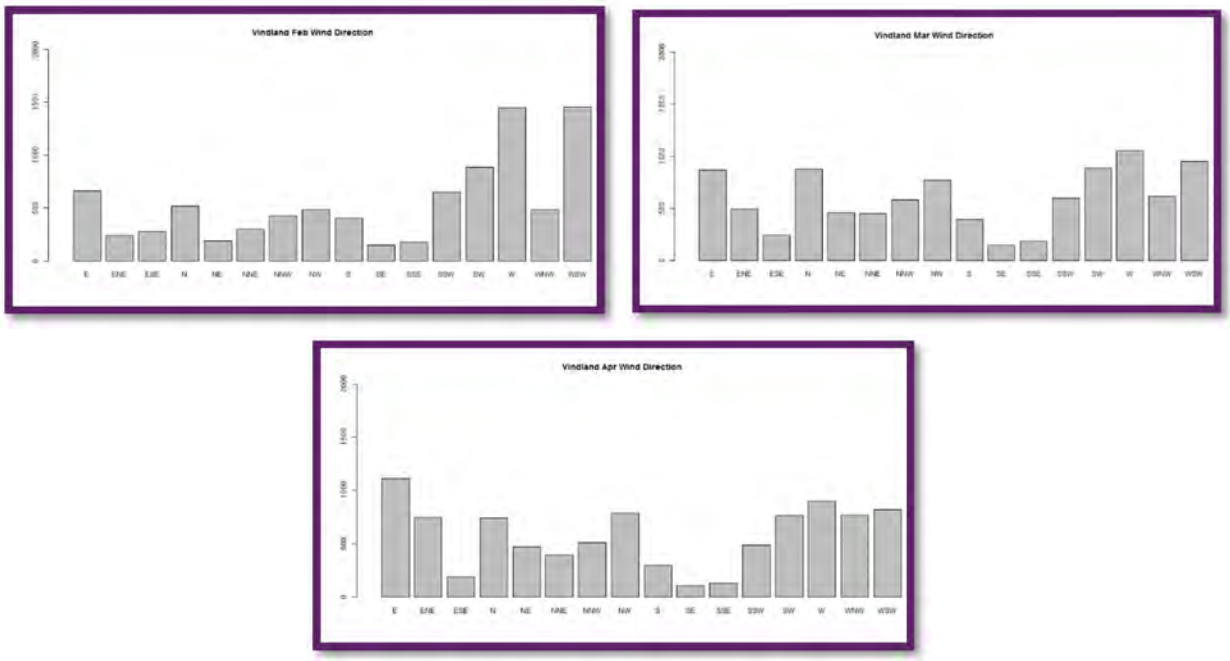
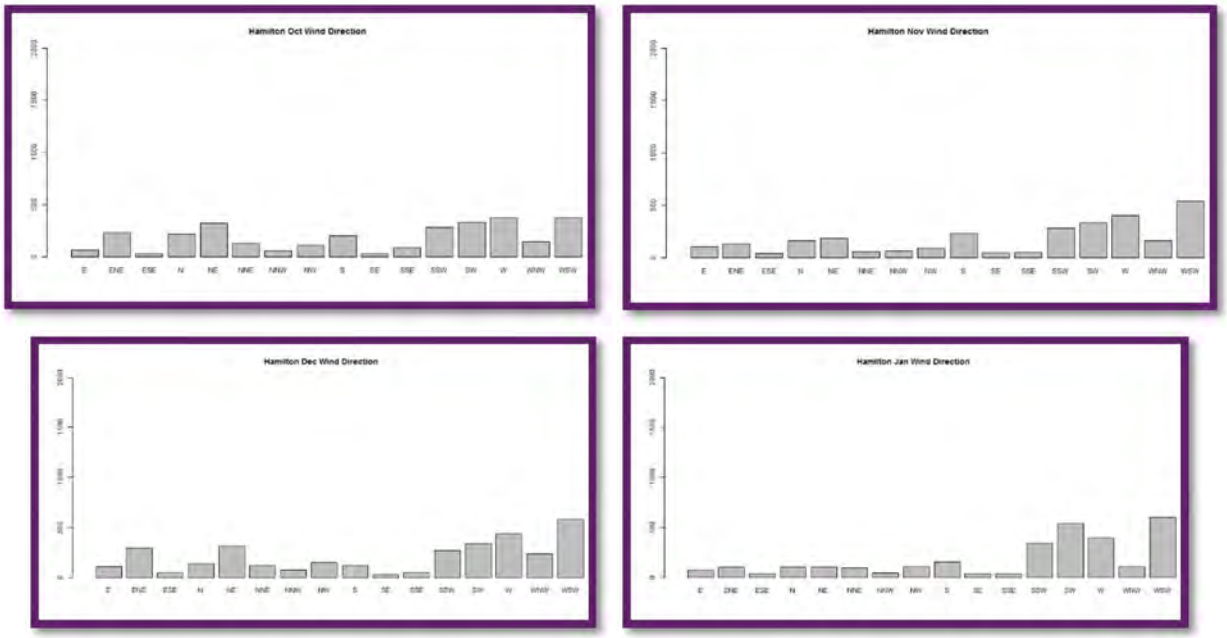


Figure 6. *The prevailing winds from Vineland weather station for the months of October through April (2003-2015)*



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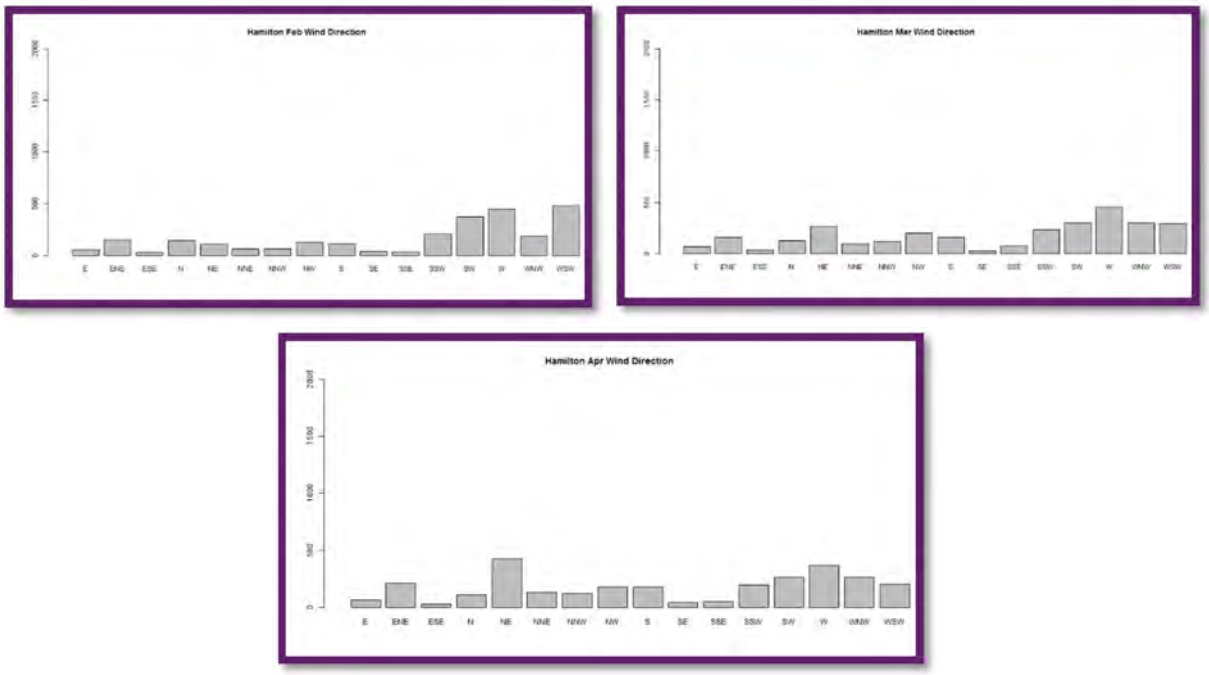


Figure 7. *The prevailing winds from Hamilton Airport weather station for the months of October through April (2011-2015).*

B. PREVAILING WINDS UNDER FREEZING AND SUB-FREEZING TEMPERATURES

The tender fruit and grapes in the area are mostly affected by sub-freezing temperatures. The dataset used in the section above were filtered for temperatures at or below freezing to show the prevailing winds during such conditions.

The monthly prevailing wind direction at or below freezing point is shown in Figure 8 below. Westerly to southwesterly winds are prevailing at Burlington Piers and Hamilton during such conditions. Meanwhile, winds from the west to west-south-west are prevailing in the Vineland area during late fall and through early spring under freezing and sub-freezing temperatures.

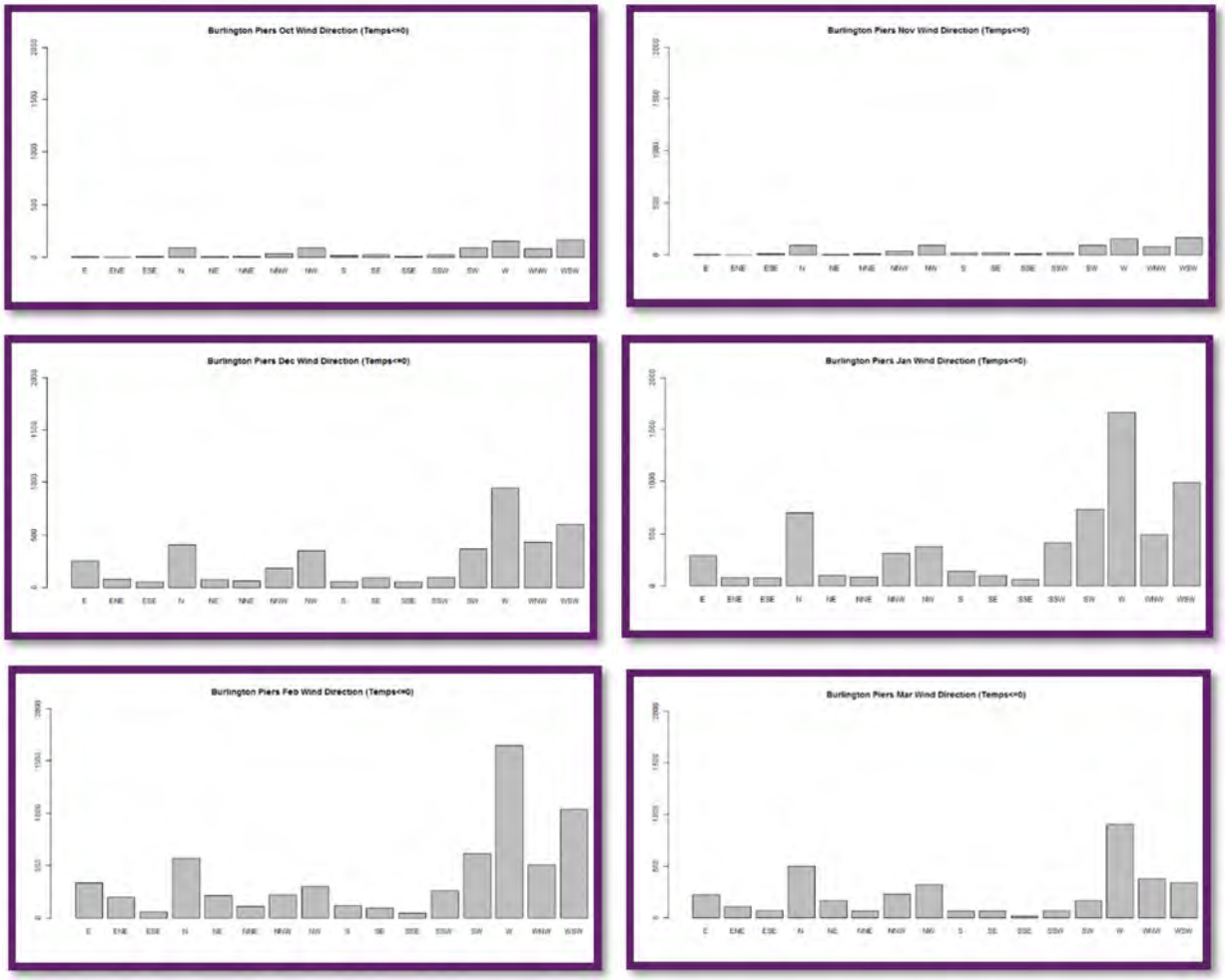
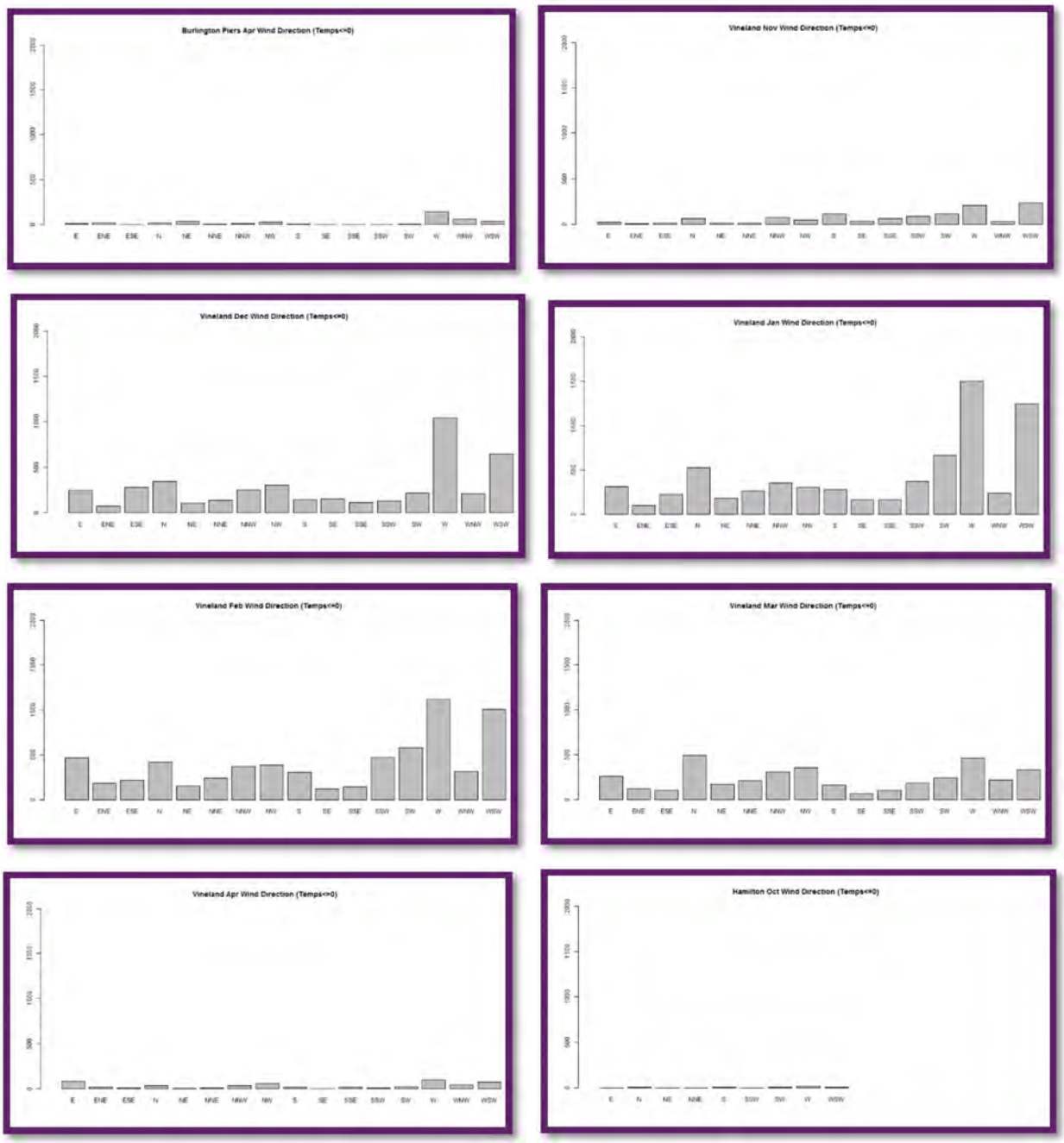


Figure 8 continues to the next page



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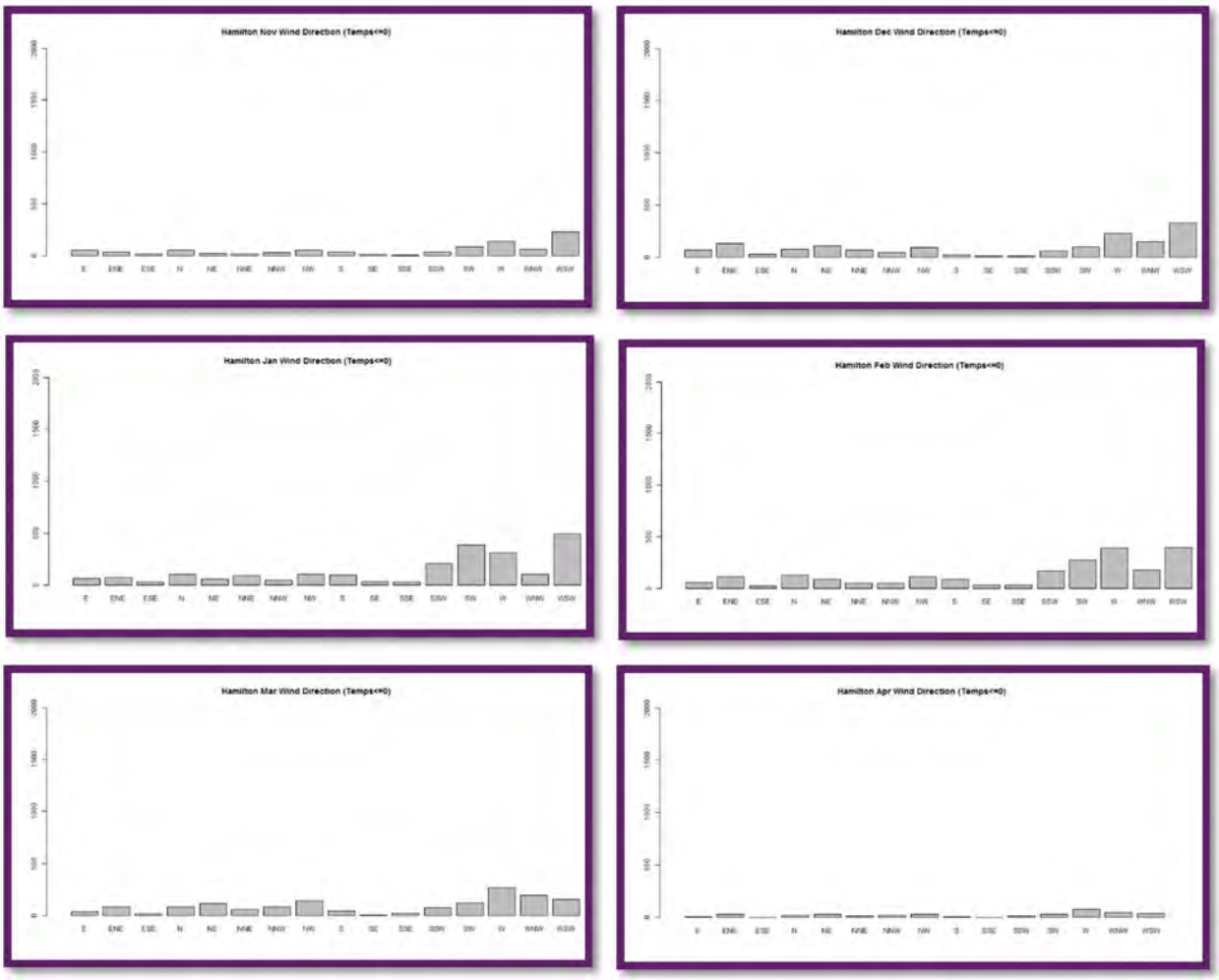

Figure 8. *Late fall, winter, and mid-spring prevailing winds from the Burlington Piers weather station (Nov-Apr), the Vineland weather station (Oct-Apr), and Hamilton Airport weather station (Oct-Apr) at or below freezing temperatures.*

C. PROBABILITY OF FROST OCCURENCE

Frost is considered one of the main causes of significant losses to fruit crops. Cloud cover plays a major role in frost development along with other weather parameters. The Burlington Piers and Vineland weather stations are automatic reporting stations and lack any reports of cloud cover or weather condition reports (e.g. precipitation type, fog, freezing fog). To draw a generalized idea about the frequency of frost occurrence in the area, data from the three weather stations were filtered using relative humidity (equal or higher than 90%), air temperature (equal or below freezing), and calm wind conditions (less or equal to 4 km h^{-1}). The database from the Hamilton Airport weather station contains hourly weather reports which will be discussed later.

Figures 9 through 11 show the time in hours versus the relative humidity at the Burlington Piers, Vineland, and Hamilton Airport weather stations. Although the results in the three figures below show that the area is prone to frost events, the Vineland region can be considered more susceptible to frost events due to its low elevation and geographical location in relation to the other sites (the median of the box and whisker plot of the Vineland area have higher frequency at or near the 90% relative humidity during evening and overnight hours). The figures also show that the frost potential extends longer in the Vineland region at the end of fall and early spring (i.e. November and March).

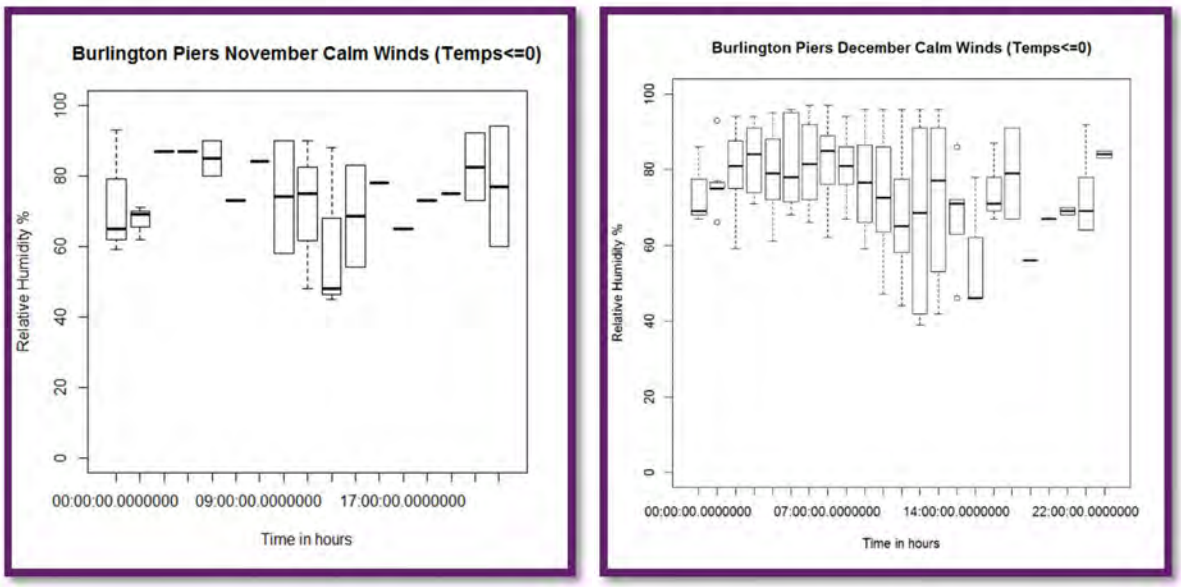

Figure 9 continues to the next page

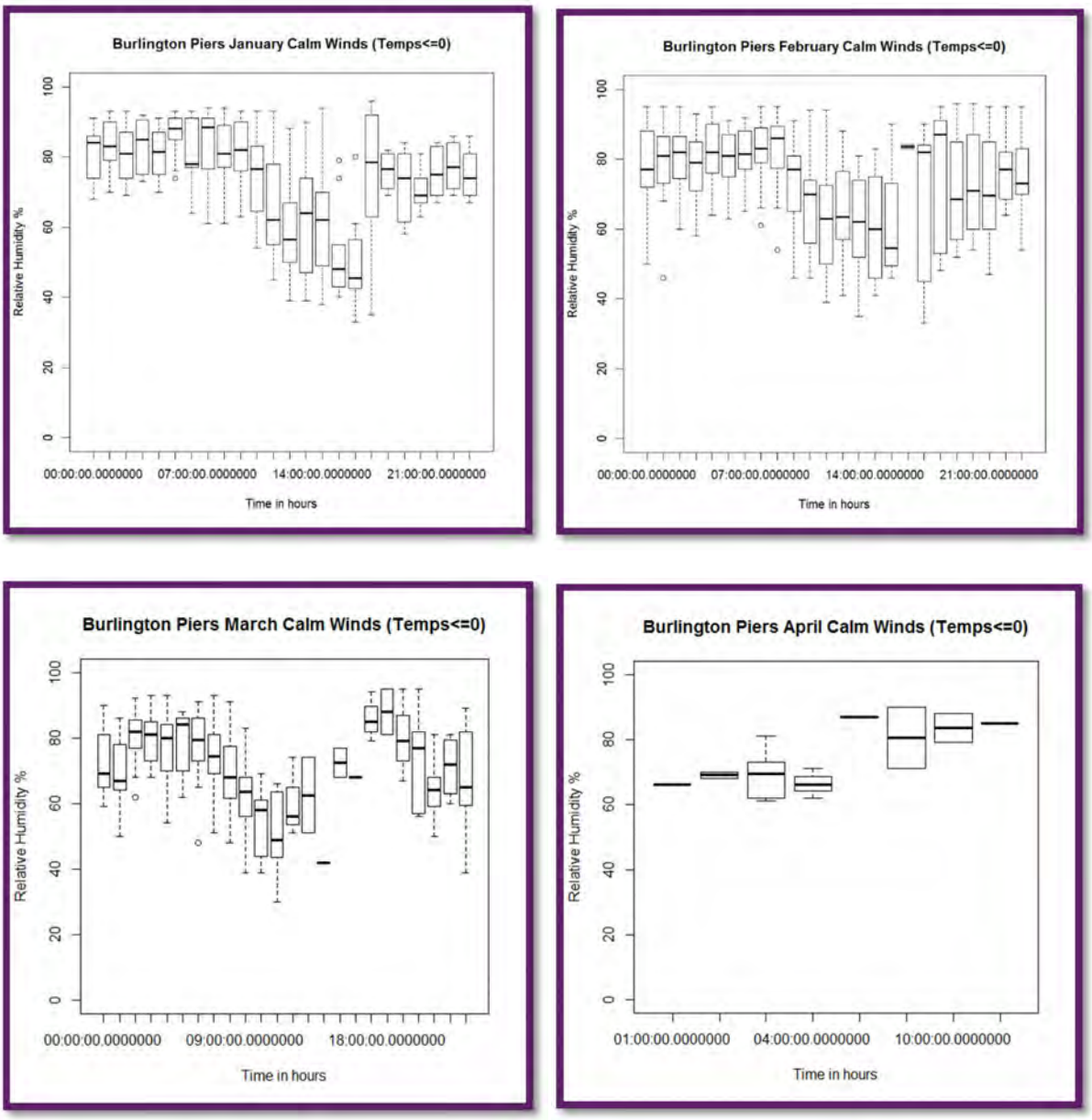

Figure 9. The temporal probability of frost occurrence for the Burlington Piers weather station (Nov-Apr) with calm winds and at or below freezing temperatures conditions.

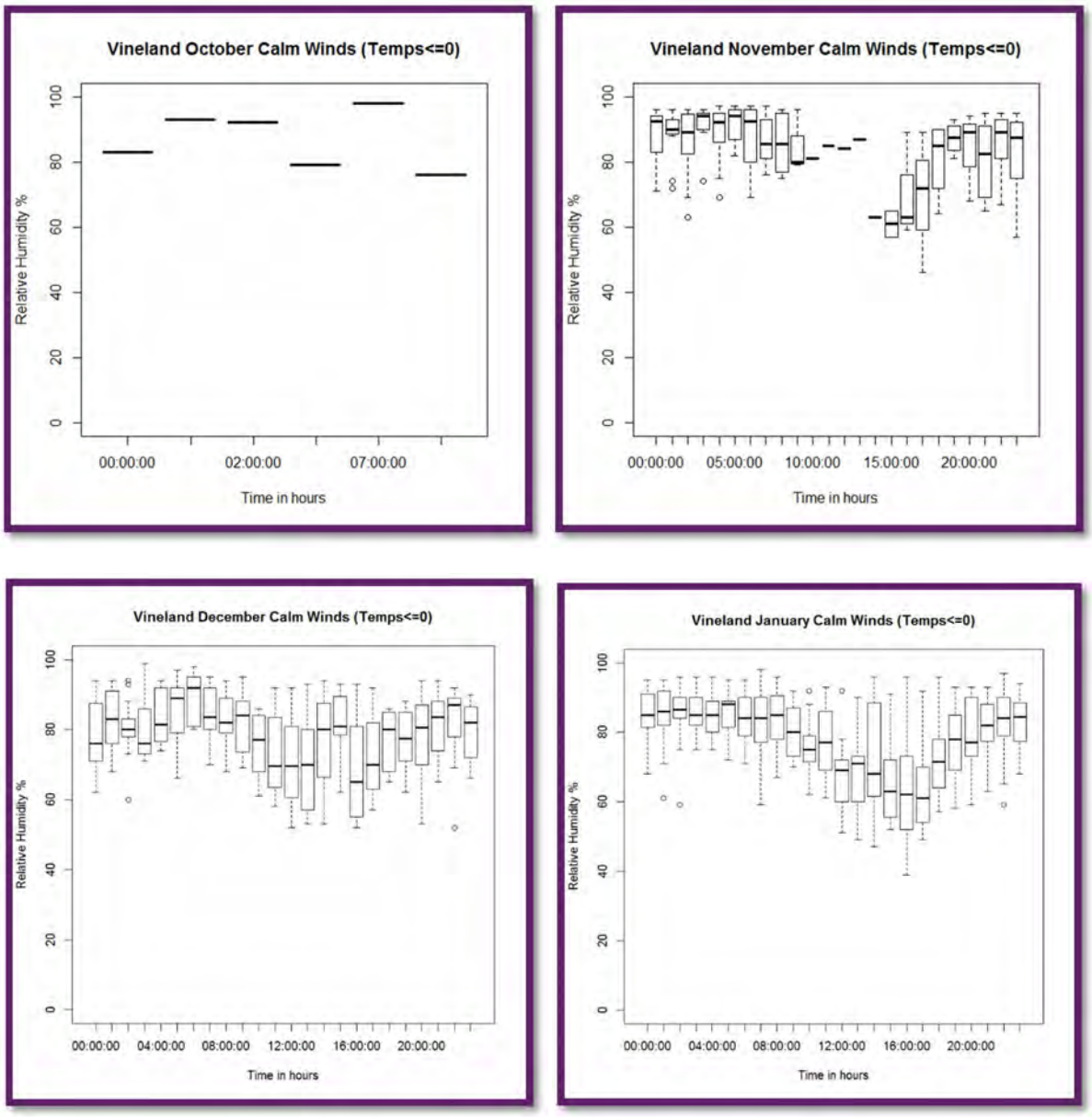

Figure 10 continues to the next page

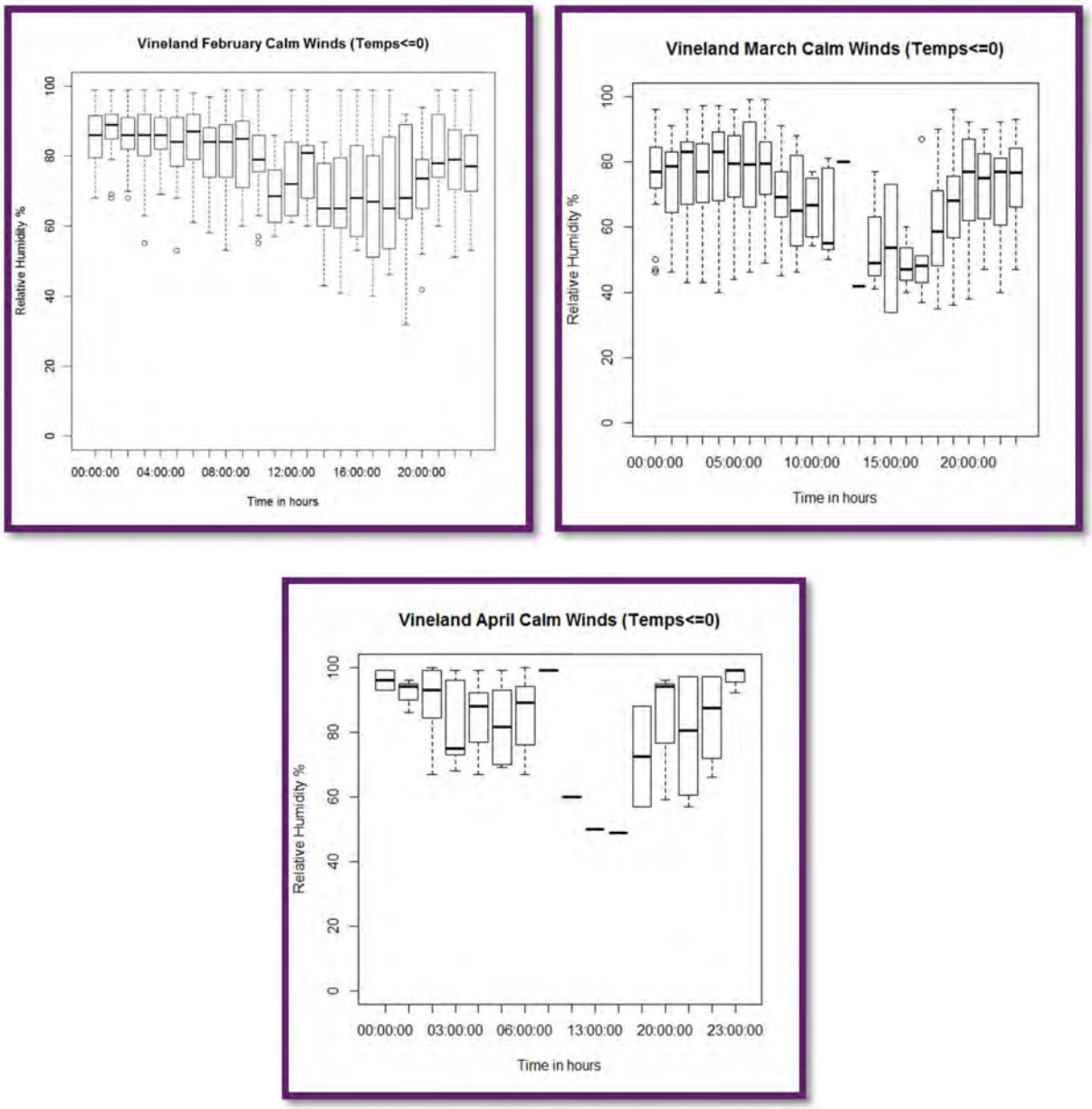

Figure 10. *The temporal probability of frost occurrence for the Vineland region (Nov-Apr) with calm winds and at or below freezing temperatures conditions.*

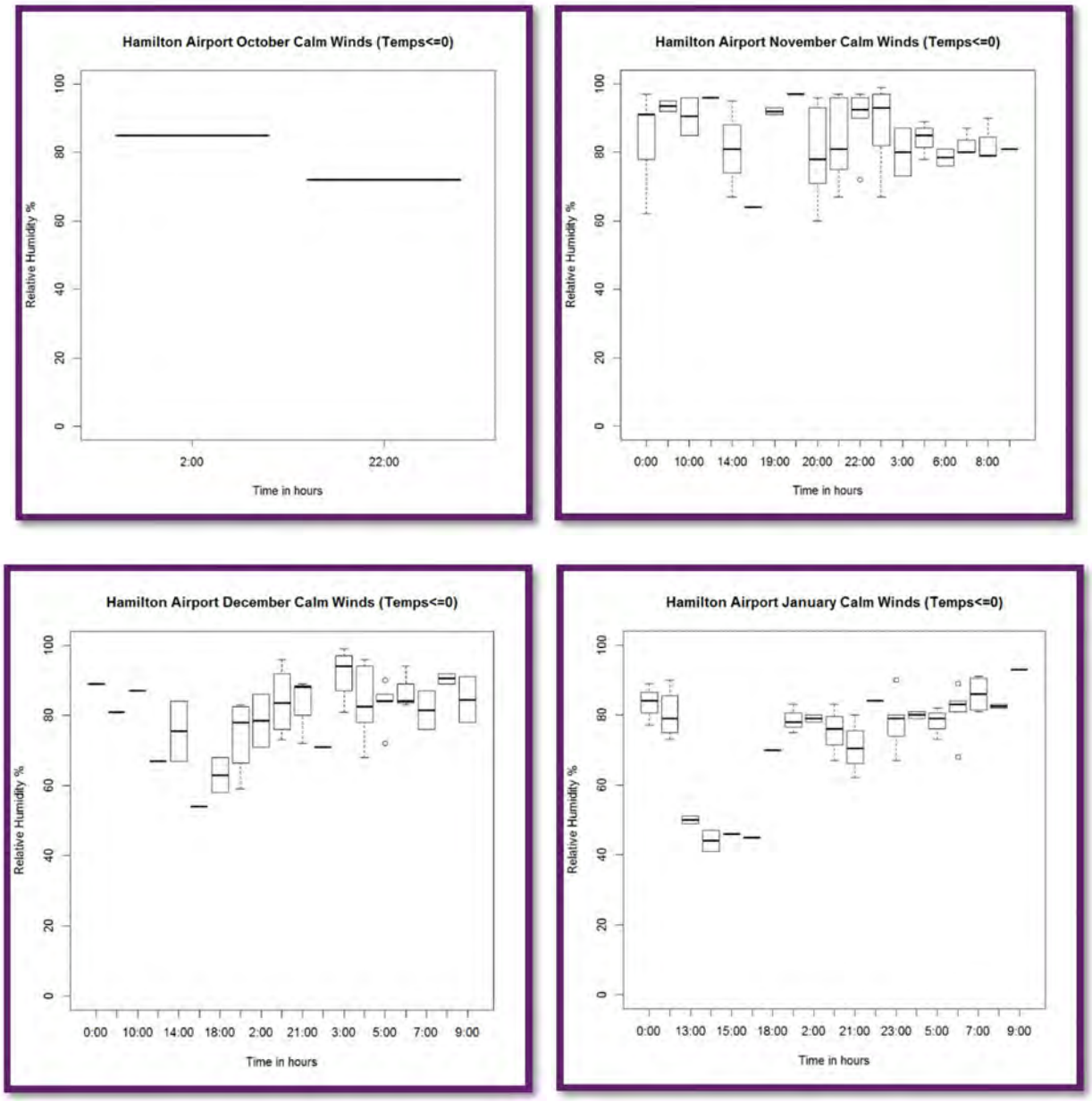

Figure 11 continues to the next page

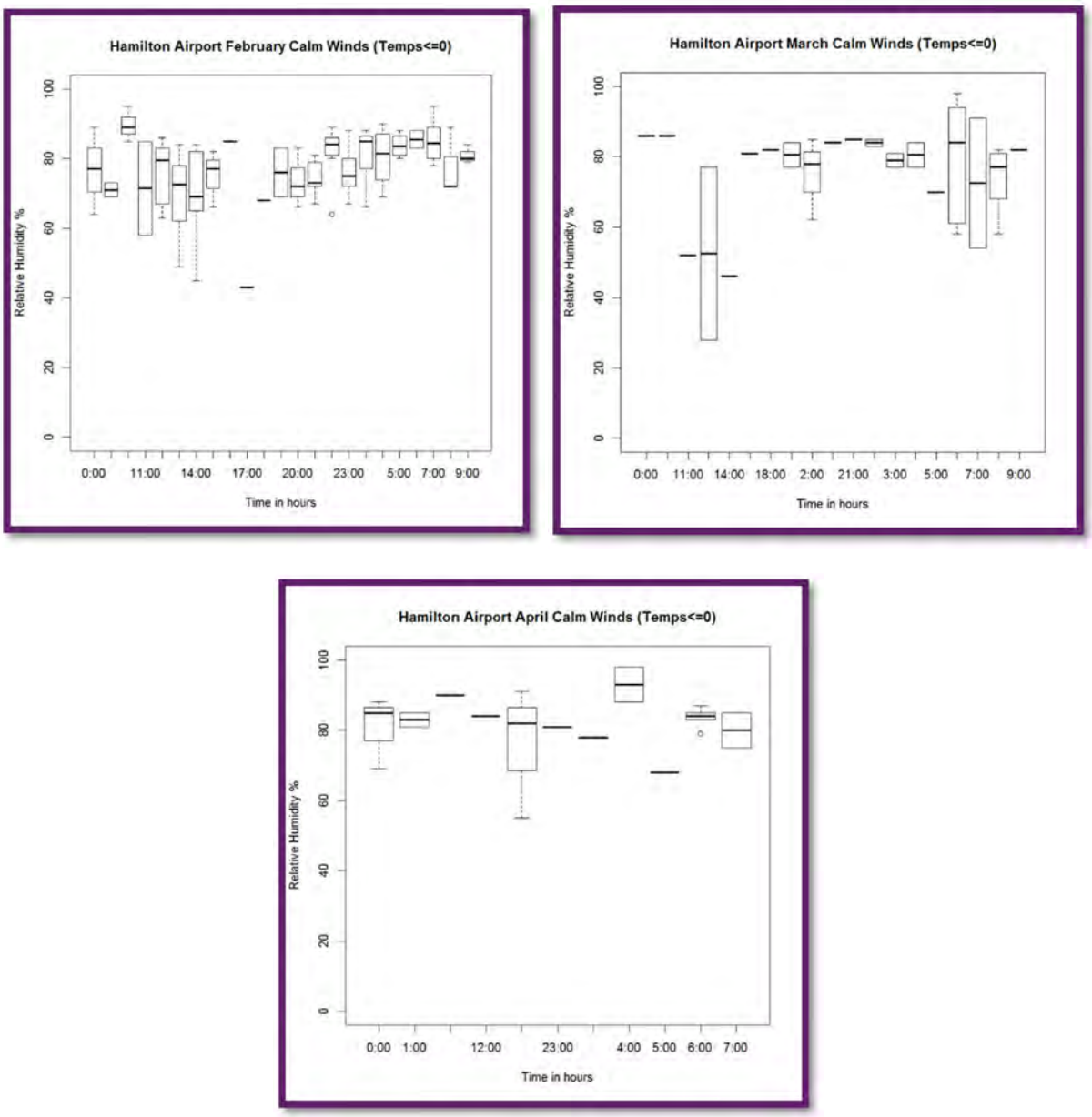

Figure 11. *The temporal probability of frost occurrence for the Hamilton Airport weather station (Nov-Apr) with calm winds and at or below freezing temperatures conditions.*

D. FOG AND FREEZING FOG

As mentioned earlier, the Hamilton Airport weather station reports hourly weather conditions. Figure 12 shows the westerly and southwesterly winds are more common during fog incidences. In addition to the southwesterly to west-south-west wind component, the northeasterly winds are also common during freezing fog cases as seen in the figure to the left. Higher frequency of fog was reported during December and February, followed by November and January with lesser reports during March, April, and October, respectively, as seen in figure 13. Whereas, higher occurrences of freezing fog were recorded in February, with lesser reports during November, January, and December, respectively. The historical weather data also shows that the majority of the reported fog and freezing fog incidences were associated with movement of larger weather systems and distinct air masses as indicated by the higher wind speeds.

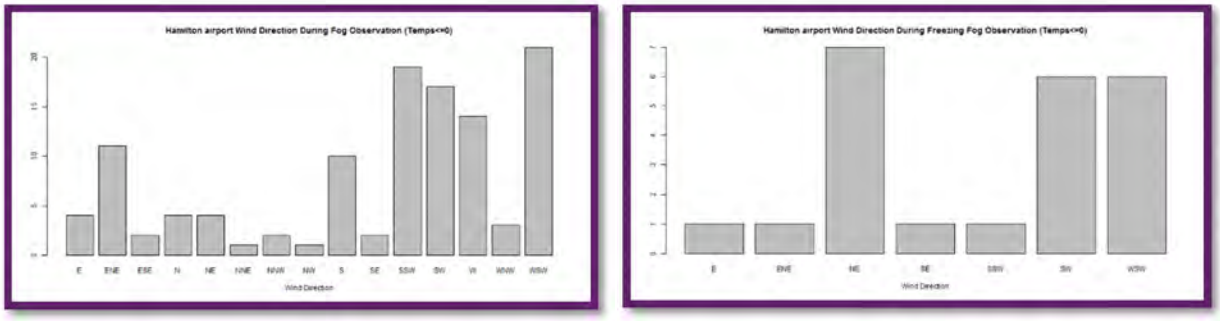

Figure 12. *Wind directions during fog (right) and freezing fog (left) observations at the Hamilton Airport weather station (2011-2015).*

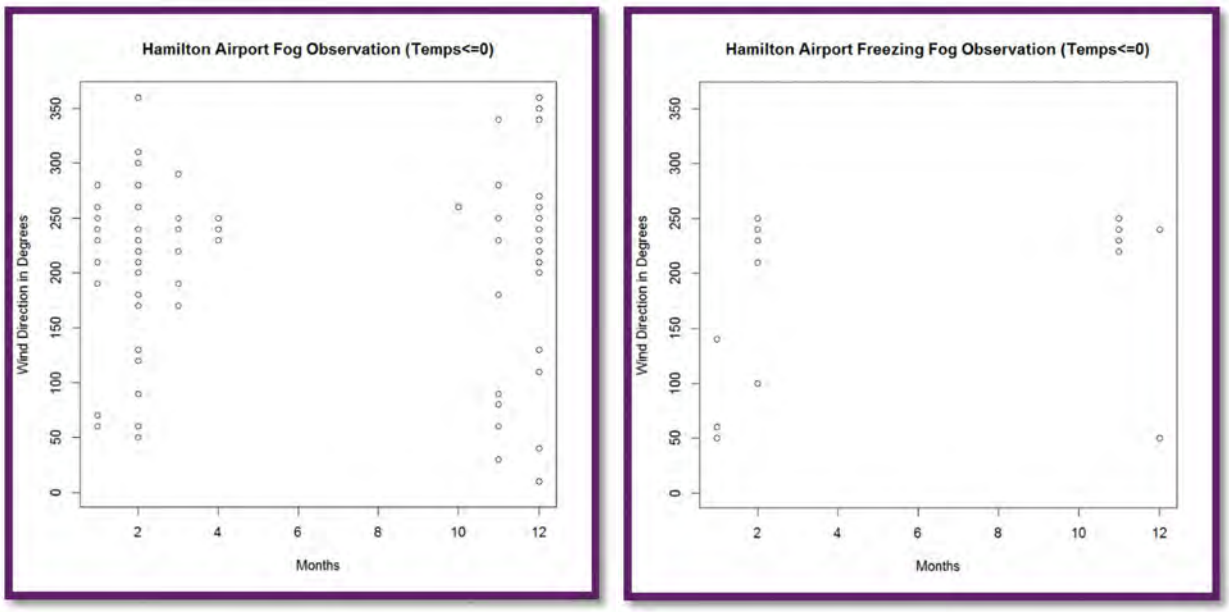

Figure 13. *Fog (right) and freezing fog (left) observation during each month at the Hamilton Airport weather station (2011-2015).*

6. TOPOGRAPHY

The area under proposed development in the SC-Plan is approximately 0.59 km^2 as shown in the gray shaded region below in Figure 14. The area is located between the Niagara Escarpment to the south and Lake Ontario to the north. The area bounded by the Niagara Escarpment and the SC-Plan is much steeper than the area between the development and Lake Ontario. The ground at the top of the Niagara Escarpment is standing at ~200 m above mean sea level (MSL) and the ground elevation descends steeply northward towards the SC-Plan area. The ground elevations within the PLAN are ranging between 95 m (south facing) to 88 m (north facing) above MSL. There is a gradual decrease in the landscape elevation starting from the northern boundary of the SC-Plan toward the railway track (86 m above MSL), and ending at ~80 m above MSL at the shorelines of Lake Ontario.

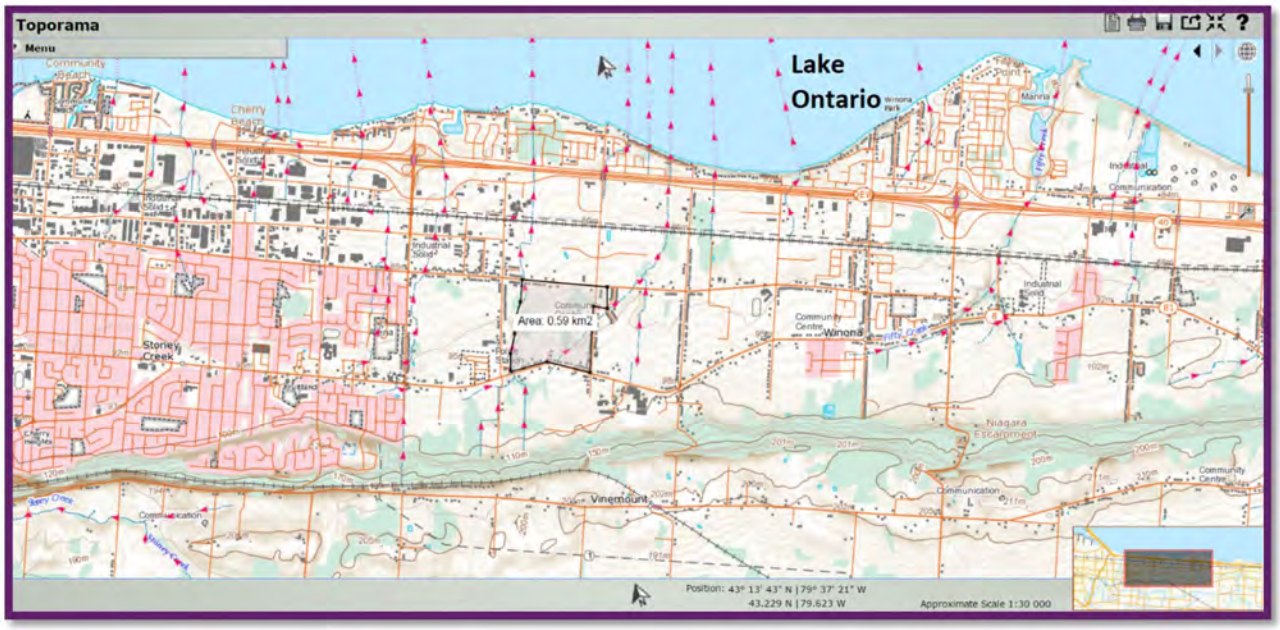

Figure 14. Topographical map of the area. ©Natural Resources Canada.

7. SUMMARY AND CONCLUSION

The Block 2-Frutiland-Winona Servicing Strategy Block Plan (SC-Plan) outlines the development of low to medium density dwelling units, Neighbourhood Park, SWM Pond, pre-existing institutions, and natural open spaces. The developed area is expected to feature a new south-north collector road, approximately in the center of the development in addition to two new east-west aligned roads connecting Jones Road and Glover Road to the collector road.

The analysis of the weather data obtained from the three nearby weather stations (Vineland WS, Burlington Piers WS, and Hamilton Airport WS) suggests the following:

- Prevailing winds are from the west and southwest direction
- The Vineland area has the most moderate temperatures among the three stations
- Based on archived observations from the Hamilton Airport WS, the highest fog incidences happened during December and February, with February being the month with the highest number of reported freezing fog events.
- The westerly and southwesterly winds were the dominant direction during fog events whereas northeasterly, southwesterly, and west-southwest winds were the dominant directions during freezing fog events.

Based on the microclimate and topography in the area as evaluated in this desktop review:

- The proposed development as shown in Figure 3, is not expected to block the southwesterly-to-northeasterly direction air flow as it may assist in mixing the boundary air layer by creating eddies (turbulences), thus aid in streaming any cold air descending from the Niagara Escarpment, i.e., prevent air stagnation.
- The proposed development is not expected to significantly impede the natural air movement in the area due to the alignment of the current and proposed roads and water courses.
- The ultimate location of the cul-de-sac has minimal impact on the overall air drainage patterns and is not recommended that air drainage be the primary consideration for the cul-de-sac location. The maintenance of a narrow opening along Highway 8 is desirable from an overall air drainage perspective, but not expected to significantly affect the general air flow if removed.
- The proposed road crossing culverts for Watercourse 6.0 and Watercourse 7.0 are to have as large an opening as practical to allow air drainage flow along the watercourse corridor.

8. REFERENCES

- Soler, M. R., C. Infante, P. Buenestado, and L. Mahrt, 2002. Observations of nocturnal drainage flow in a shallow gully, Boundary-Layer Meteorology V.105. pp. 253–273, doi:10.1023/A:1019910622806.
- Fraser, H., K. Slingerland, K. Ker, K. Fisher, and R. Brewster. 2009. Reducing cold injury to grapes through the use of wind machines, Final Report: CanAdvance Project # ADV-161. Nov. 2005 - Nov. 2009. 30 pp.
- Historical Climate Data (http://climate.weather.gc.ca/)
- Natural Resources Canada (http://atlas.gc.ca/toporama/en/)
- Ontario Ministry of Municipal Affairs-Ministry of Housing (http://www.mah.gov.on.ca/Page13785.aspx)
- Google Earth (https://www.google.ca/earth/)

APPENDIX - RESUMES

DIAR HASSAN, PH.D., P.MET.

ATMOSPHERIC SCIENTIST

CORE SKILLS

- Dual-polarimetric and conventional Radar-based Rainfall Algorithms
- Dual-polarimetric and conventional Radar-based Snow-Water Equivalent Algorithms
- Dual-polarimetric and conventional Radar-based Solid Snowfall Algorithms
- Meteorological Consultation and tailored weather forecast for an array of commercial clients
- Weather observation field campaigns
- Weather Forecasting
- Seasonal forecasting

PROFESSIONAL SUMMARY

Dr. Hassan is an accredited Professional Meteorologist with a decade of experience. He has served as a consultant meteorologist for an array of clients such as energy, transportation, airport ground operation, school boards, municipalities, Film Industry, Consultant Engineering companies, and sport and social events.

As a seasonal forecaster, Dr. Hassan possesses nine years of experience in producing and briefing the North American seasonal outlook. He was presented as an expert subject matter on different media platforms.

Challenged by the low radar-based estimation of snow-water equivalent, Dr. Hassan focused his Ph.D. project on improving such estimation through the use of conventional and dual-polarimetric weather radars. He established an algorithm that better estimate snow-water equivalent than the currently employed one by the Canadian Radar Network. Furthermore, he established a new algorithm that directly estimates solid snowfall rates. The latter algorithm provides crucial information to different industries, particularly to the transportation sector.

The decision to gradually upgrade the Canadian Radar Network and equip them with dual polarimetric capabilities intrigued Dr. Hassan, and he, therefore, establish new polarimetric-based algorithms that estimate rainfall rates. Moreover, he devised a logic tree that optimizes on rainfall estimation by selecting a specific algorithm based on the polarimetric radar variables.

Dr. Hassan has a wide range of academic experience as a lecturer at different academic levels up to the graduate level. He held the position of an academic supervisor for six years, during which he was responsible for the management and liaison of a wide range of academic activities.

PROFESSIONAL QUALIFICATIONS/REGISTRATION(S)

Professional Meteorologist Accreditation (Operation), ECO Canada, 2018

Professional Meteorologist Accreditation (Research), ECO Canada, 2018

EDUCATION

Ph.D. Dual and Conventional Weather Radar-Based Precipitation Algorithms, Dept. of Earth Science and Space, York University, Toronto, Ontario, 2015

Project Management Certificate, Sheridan College, Oakville, Ontario, 2009

M.Sc. Dual-polarimetric radars, Dept. Of Meteorology, Al-Mustansiriya University, Baghdad, 1998

B.Sc. Physics/Meteorology, Dept. Physics, Al-Mustansiriya University, Baghdad, 1996

MEMBERSHIPS/AFFILIATIONS

Canadian Meteorological and Oceanographic Society (CMOS)

American Meteorological Society (AMS)

LANGUAGES

English, Kurdish, Arabic, and fair knowledge of French

EMPLOYMENT HISTORY

Amec Foster Wheeler, Ottawa, Ontario, Atmospheric Scientist, Dec 2015 to present.

York University, Toronto, Ontario, Research Associate, Nov 2015.

Pelmorex/The Weather Network, Oakville, Ontario, Consultant Meteorologist, 2006 to 2015.

Pelmorex/The Weather Network, Oakville, Ontario, Seasonal Forecaster, 2007 to 2015.

A private entity, Abu Dhabi, UAE, Academic Supervisor, 2001 to 2006.

AIS, Abu Dhabi, UAE, Lecturer, 1999 to 2001.

Al-Mustansiriya University, Baghdad, Lecturer, 1998 to 1999.

PUBLICATIONS AND CONFERENCES

- Hassan, D., P. A. Taylor, G. A. Isaac, 2017: “Snowfall Rate Estimation Using C-Band Polarimetric Radars”, Meteorol. Appl. Accepted.
- Hassan, D., P. A. Taylor, G. A. Isaac, 2017: “C-Band Polarimetric-Based Rainfall Estimation”, Submitted.
- Hassan, D., P. A. Taylor, G. A. Isaac, 2017: “Solid Snowfall Rate Estimation Using a C-Band Radar”, to be submitted.
- Hassan, D., G. Isaac, and P. Taylor, 2013: “Snow Liquid Water Equivalent Estimation from Polarimetric Weather Radar Perspective”, Eastern Snow Conf., Huntsville, Ontario.
- Hassan, D., G. Isaac, and P. Taylor, 2012: “Estimating Snowfall Rate Using WKR Polarimetric Radar Data”, CMOS Montreal, Quebec.
- Boodoo, S., D. Hudak, M. Leduc, A. Ryzhkov, N. Donaldson and D. Hassan, 2009: "Hail detection with a C-Band Dual Polarization radar in southern Canada." AMS 34th Conference on Radar Meteorology, Williamsburg, VA, USA.
- Hassan, D., R. Al-Naimi, and K. Al-Jumaily, 2001: “Depolarization effects due to some atmospheric constituents”. Al-Mustansiriya J. Sci., vol. 12, No. (2), pp 171-178.

PROJECT

- **Air Drainage Analysis City of Hamilton: Fruitland-Winona (2017)**
  Study the effect of the new development of the microclimate and their subsequent effect on the tender fruits in the area.
- **Borden Gold Project, Chapleau, Ontario (2017)**
  A comprehensive climate study for the area, including Temperature, Precipitation, IDF curves, Evapotranspiration, and Windrose.
- **Maintenance Decision Support System (MDSS) (2016-2017)**
  Upgrade the current MDSS Maritimes client pavement treatment.
- **Votgle Plant Local Intense Precipitation and Warning Time Evaluation, Southern Nuclear, United States (2016)**
  Investigate into extreme precipitation events in southeastern United States, including storm identification, data collection, storm typing, and reporting.

RON BIANCHI, BSC (HON) BCERT FRMETS

SENIOR ASSOCIATE – DIRECTOR OF STRATEGIC DEVELOPMENT CLIMATE AND TERRESTRIAL WEATHER - MET-OCEAN SERVICES

CORE SKILLS

- Project Management and Application Development
- Client Relationship Development
- Expert in Meteorological Sciences and Climate Change Analysis
- Meteorological applications in Mining, Energy/Power, Insurance, Infrastructure, Aviation and Environmental Assessment

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PROFESSIONAL SUMMARY

Ron Bianchi is a senior associate specializing in the fields of meteorology, atmospheric sciences, and climate change. Ron has over twenty-five years' experience managing clients and projects in many verticals including meteorological forecasting, energy, power, insurance, infrastructure, aviation, environmental assessments, air permitting, and mining. Ron specializes in developing unique meteorological services, such as technical/scientific reports and studies, specific weather forecast products, atmospheric modeling with various in-house models, baseline climate and climate change analysis reports. Additional services such as meteorological instrumentation installation and training Ron specializes in the area of applied industrial meteorology via meteorological operations, project execution, business development, and strategic planning, in both the public and private sectors.

- Over twenty-five years of forecasting experience in the private and government sectors;
- Expert knowledge of meteorological production and dissemination methods;
- Reputation for leadership within organizations and within the meteorology profession;
- Able to bridge government and private sectors to exchange technology, training, and business plans;
- A deep understanding and proficient with all meteorological models;
- Extensive experience with various meteorological monitoring observing systems and their specific applications;
- Able to quickly put new meteorological technology into operation;
- Exceptional communication and interpersonal skills that clients and internal staff;
- In-depth knowledge of principles and methods for curriculum and training design;
- Highly sophisticated analytical skills, and strong ability to assimilate complex concepts and translate them into real world results.

Ron's position at Amec Foster Wheeler as a senior associate and Director of Strategic Development for the Met Oceans group will provide guidance to the group's growth and new business opportunities, along with applying his expertise within the Met-Ocean group and internal and external clients.

PROFESSIONAL QUALIFICATIONS/REGISTRATION(S)

Certified Project Manager, 2010

EDUCATION

BSc (Hon) in Physics and Meteorology – University of Toronto, (1987)

Ivey School of Business, University of Western Ontario, Executive Management Program (2000)

Canada School of Public Service- Federal Service (2005)

MEMBERSHIPS/AFFILIATIONS

American Meteorological Society-Professional Member

Royal Meteorological Society – Professional Member and Fellow

Canadian Meteorological and Oceanographic Society- Past President, current member

Australian Meteorological Society-Professional Member

National Weather Association –Professional Member

American Geophysical Union-Member

LANGUAGES

English

EMPLOYMENT HISTORY

Senior Associate, Director of Strategic Development - Climate and Terrestrial Weather - Met-Ocean Services - current

PANAM Lead Meteorologist, Sailing Venue RCYC at Toronto 2015 Pan/Parapan American Games

February 2015 to July 2015

Director of Meteorology, Atmospheric Group Manager at Golder Associates - Environmental Sciences

Division, 2007 to 2015

Vice President of Meteorology and Executive Meteorologist at The Weather Network/MeteoMedia,

1997 to 2007

Operations Manager, Ontario Storm Prediction Centre at Environment Canada - Meteorological

Service of Canada (Federal Government), 2005 to 2006 Primary Load Forecast Meteorologist - Weather Services Operations Planning & Interconnections at

Independent Electricity System Operator (IESO) 1996 to 1997

REPRESENTATIVE PROJECTS

Weather Forecasting

PANAM TO2015 Games - Toronto, Ontario, Canada

Lead Meteorologist - providing detailed meteorological forecasts specifically geared to competitive sailing. Designing state-of-the-art meteorological workstation and WRF Modelling for advanced forecasting and warning capabilities. Daily briefings with venue operators, race committee, coaches, and athletes. Ensuring all involved are provided with the most accurate weather forecasts and warning system that ensured their safety and security during the games.

Chase Energy Canada Limited - Alberta, Canada

Provide weekly rolling temperature forecasts for all of Canada. The forecasts consisted of a graphical product displaying trends of warmer to cooler than normal conditions for all regions of Canada. Along with a brief commentary on current Meteorological trends that might impact energy production across the country.

City Oakville Storm Water Monitoring

Weather tracking/high-resolution precipitation forecasts. Oakville, Ontario, Canada. Provide high-resolution precipitation forecasts specific to the city of Oakville to enable storm monitoring teams to capture storm water and provide analysis. Forecasts were provided via email and telephone consultation along with weather briefings to provide "go-no-go" on weather events that met various City of Oakville criteria.

National Pre-Olympic Qualifiers – Vancouver, Canada

Provided the Ontario provincial sailing team with high-resolution WRF model wind data (hourly and 1 km resolution) over the race area of the event. Daily weather briefings and tactical wind strategy consultation via the internet and telephone.

Canada Summer Games - PEI, Canada

Provide the Ontario provincial sailing team with high-resolution WRF model wind data (hourly and 1 km resolution) over the race area of the event. Daily weather briefings and tactical wind strategy consultation via the internet and telephone.

Alaska North Slope Liberty Geotechnical Project (Repsol) – Alaska, USA

Provided meteorological support for drilling operations. Daily weather forecasts (short and long term), daily climatological data, atmospheric forecasted pressure trend, ice thickness and movement, tidal periods beneath the sea ice, specific surface weather forecast maps, and maintaining a continuous weather watch for warnings for a safe and secure working environment

Cliffs Natural Resources - Ontario, Canada

Provided biological survey teams (winter track count) with local aviation forecasts for low flying helicopter surveys. Along with wind, QPF, and visibility forecasts in designated areas, defined by the client.

Sir Adam Beck, OPG Niagara Fall, Ontario, Canada

Provided daily forecasts, with special attention to QPF (rainfall) during a construction phase for major repairs at Sir Adam Beck site. The forecast is used for planning of daily construction and safety of the crew. On-call briefings were also provided on active weather days.

Mining

Adriana Resources Inc. - Lac Otelnuk Mining Ltd. - Northern Quebec, Canada

Installed weather station and set up a monitoring program. Analysis and quarterly reports were produced and provided to various disciplines in hydrology, geology, geotechnical working groups. Provided baseline regional climate summary and analysis, and climate change work for Environmental Assessment.

Aurora Energy Ltd. Newfoundland, Canada

Installed weather station and set up a monitoring program. Analysis and quarterly reports were produced and provided to various disciplines in hydrology, geology, geotechnical working groups. Provided baseline regional climate summary and analysis, and climate change work for Environmental Assessment.

AREVA Resources - Nunavut, N.W.T., Canada

Provided the Probable Maximum Precipitation (PMP) for the Kiggavik project located west of Baker Lake, Nunavut. The objective of the report is to provide a precipitation value that will serve as a conservative basis for design for various engineered structures such as tailings management areas and water treatment ponds.

Trelawney Mining and Exploration Inc.-Northern Ontario, Canada

Installed on-site weather station is to capture the local weather effects. Set up a monitoring program. Analysis and quarterly reports were produced and provided to various disciplines in hydrology, geology, geotechnical working groups. Provided baseline regional climate summary and analysis, and climate change work for future Environmental Assessment.

Cliffs Natural Resources - Ontario, Canada

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Conducted MM5 and CALMET modeling northern Ontario and ferrochrome production facility. Climate baseline and climate change work for Environmental Assessment.

Focus Graphite – Quebec, Canada

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Conducted MM5 and CALMET modeling western Quebec. Climate baseline and climate change work for Environmental Assessment

Ivaco Rolling Mills – Quebec, Canada

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Conducted MM5 and CALMET modeling southern Quebec. Climate baseline and climate change work for Environmental Assessment

Globestar Moblan – Northern Quebec, Canada

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Conducted MM5 and CALMET modeling northern Quebec. Climate baseline and climate change work for Environmental Assessment.

Walker Aggregates- Ontario, Canada

Duntron Weather station repair and calibration. Conducted microclimate study of possible effects due to the expansion of the aggregate pit on a specific and rare fern plant species.

Focus Graphite – Quebec, Canada

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Conducted MM5 and CALMET modeling western Quebec. Climate baseline and climate change work for Environmental Assessment

Cliff Mine Site and Cliffs FPF Site – Northern Ontario, Canada

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Conducted MM5 and CALMET modeling northern Ontario and ferrochrome production facility. Climate baseline and climate change work for Environmental Assessment

Walker Aggregates- Ontario, Canada

Duntron Weather station repair and calibration. Conducted microclimate study of possible effects due to the expansion of the aggregate pit on a specific and rare fern plant species.

Hammond Reef – NW Ontario, Canada

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Conducted MM5 and CALMET modeling northern Quebec. Climate baseline and climate change work for Environmental Assessment.

Barrie Landfill – Barrie, Ontario, Canada

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Developed a dust and odor mitigation process.

Prodigy Gold – NW Ontario, Canada

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Climate baseline and climate change work for Environmental Assessment

Morelos Mining Operations – Mexico

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Climate baseline and climate change work for Environmental Assessment

Kabanga Nickel – Africa

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Climate baseline and climate change work for Environmental Assessment. Particular attention to the boundary layer winds and production of wind-roses for each day and month for air dispersion modeling.

Climate Studies and Climate Change Analysis

Region of Waterloo- Ontario, Canada

Provide an overall objective of the climate analysis is to prepare a summary of climate data for the Region of Waterloo that will help it understand the current climate conditions, how this climate has changed over the past 30 years or so, and how the climate is projected to change in the near future. This detailed analysis will provide the basis for initiating discussion of an adaptation strategy; and discussion of the possible need for an improved assessment of short-term weather forecasting. The focus of the report was for the hydrology group in the Region of Waterloo.

Onca Puma Microclimate Assessment - Puma, Brazil

Technical report in a micrometeorological assessment of the possible effects of the molten slag dump on the local meteorology and climate. Responsibilities included meteorological data analysis, development of several meteorological data sets for heat transfer models, local climate data analysis and assessment of potential microclimate impacts.

Town of Sombra, Ontario, Canada

Technical Memorandum will describe the severe precipitation event recorded in Sombra Ontario. The Technical memorandum described the synoptic large scale event that led to the severe precipitation event.

NWMO - Nuclear Waste Management Organization (NWMO), Ontario, Canada

Several locations (14) studies and technical memorandums regarding baseline climate and climate change possibilities

And long term effects for the various project sites.

PIEVEC – Infrastructure Ontario Climate Change Vulnerability Assessment – Ontario, Canada

Provide an overall objective of the climate analysis is to prepare a summary of climate data that will help it understand the current climate conditions, how this climate has changed over the past 30 years or so, and how the climate is projected to change in the near future. Then developed working training sessions with various internal PIEVEC members.

Walker Aggregates – Microclimate study on plant species

Technical report in a micrometeorological assessment of the possible effects expansion on the local meteorology and climate. Responsibilities included meteorological data analysis,

development of several meteorological data sets local climate data analysis and assessment of potential microclimate impacts on various plant species.

POWER/Energy

Wind Energy Inc. Galetta, Quebec

Preliminary analysis of a potential wind energy project in the Quebec region. Used existing data to assess the physical and wind characteristics of the site and forecast wind energy potential based on historical and modeled MM5 data. Responsible for CALMET modeling to downscale RUC model output, conducting wind analysis on a refined spatial resolution to locate the maximum wind potential energy and comparison study using on-site surface station data.

Windfield Energy Inc. Ontario, Canada

Provided Windfield Energy Inc. to carry out a preliminary analysis of a potential wind energy project in the Ottawa region. Used existing data to assess the physical and wind characteristics of the site and forecast wind energy potential based on historical and modeled MM5 data. Responsible for CALMET modeling to downscale RUC model output, conducting wind analysis on a refined spatial resolution to locate the maximum wind potential energy and comparison study using on-site surface station data.

Teck Coal - Alberta, Canada

Provided Teck Coal Limited Cardinal River (Teck Coal) to carry out a preliminary analysis of a potential wind energy project at the Cardinal River site. Used existing on-site captured data to assess the physical and wind characteristics of the site and forecast wind energy potential based on historical and modeled MM5 data. The report included forecast wind energy potential based on historical data; Develop an energy production model based on installation scenarios, and Provide a financial analysis based on estimated project costs and energy generation.

Nanticoke New Nuclear Plant Build Project – Nanticoke, Ontario, Canada

Responsible for the completion of the air quality component of the EIS for Bruce Power - Nanticoke New Build. Responsibilities included installing meteorological on-site station, data analysis, development of several meteorological data sets for dispersion modeling, climate data trend analysis and assessment of climate change on the possible project.

Westcoast Connector Gas Transmission Project – B.C. Canada

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Conducted MM5 and CALMET modeling. Climate baseline and climate change work for Environmental Assessment. Provided Technical Report on the verification of on-site weather data to Environment Canada forecast weather data.

Modeling

Halton Region - Ontario, Canada

Conducted meteorological modeling using MM5 and CALMET for Halton Region airshed study. The process of verifying and validating the quality of the meteorological data

includes comparing with local surface stations, presenting annual, seasonal and day/night wind-roses, atmospheric stability, annual and seasonal mixing height, and average wind flow in the computational domain during Ontario smog days advisory.

Kinross Gold Operation - Chukotka Region, Russia

Conducted MM5 and CALMET modeling and provided detail analysis of MM5 and CALMET output. The analysis illustrates the model output capability to simulate downslope and upslope wind flows which usually occurs in the mountainous region.

Aurora Energy Ltd- Newfoundland, Canada

Installed on-site weather station for baseline data collection and providing maintenance of the station. Responsible for continued QA/QC and analysis of the recorded meteorological fields. Climate baseline and climate change work for Environmental Assessment.

Covanta/Green Island Energy – BC, Canada

Conducted MM5 and CALMET modeling and provided detail analysis of MM5 output. The analysis includes presentation of thermal induced wind flow in coastal region during high-pressure system, model output verification using four surface stations in the region and wind pattern comparison to CMC model output presented by Canadian Wind Energy Atlas. The meteorological data provided to Covanta Energy to be used for air dispersion modeling has been peer reviewed by Dr. Joseph S. Scire of TRC and Dr. Li Huang of British Columbia Ministry of Environment. The reviewers have expressed great confidence in the data provided.

Xstrata - Sudbury, Ontario, Canada

The meteorological data set development to generate three-dimensional meteorological fields for 2008 to 2010 periods. The Calmet model is initialized by RUC (Rapid Update Cycle) model output and surface meteorological fields recorded at Sudbury Airport. Dr. Robert Bloxam and Dr. John Liu of Ontario Ministry of Environment reviewed and approved the use of the meteorological data for air dispersion modeling.

ExxonMobil – Halifax, Nova Scotia, Canada

Prepared meteorological dataset for air dispersion modeling and managed the air quality study for two ExxonMobil gas plants in Nova Scotia. The report of the study was well received during the presentation by ExxonMobil.

Health Canada Ottawa, Ontario, Canada

Conducted and MM5 and CALMET modeling for three Iron and Steel industries located in Ontario, Manitoba, and Alberta.

Diavik Diamond Mine- N.W.T.,Canada

Responsible for MM5 modeling, conducting wind analysis on refined spatial resolution to locate the maximum wind potential energy, and developing verification methodology to increase client's confidence in modeling output

Burnco – Ontario, Canada

Conducted MM5 and CALMET modeling and provided detail analysis of MM5 and CALMET output for air dispersion modeling.

Madawaska – Ontario, Canada

Conducted meteorological modeling using MM5, CALMET, and Aermod. The process of verifying and validating the quality of the meteorological data includes comparing with local surface stations, presenting annual, seasonal and day/night wind-roses, atmospheric stability, annual and seasonal mixing height, and average wind flow in the computational domain.

Insurance

Frank Cowan Company – Princeton, Ontario, Canada

Provide technical due diligence for weather forecasting needs and possible use for a website for all their insurance clients. Provided final approval of certified government forecasts for website use.

Various Client members of Frank Cowan Company – Princeton, Ontario, Canada

Several Client of FCC were referred to complete several technical memorandums and weather/climate summaries for the various municipalities that are members of FCC.

PMP

Barrick Gold Corporation- Ontario, Canada

Estimated the Probable Maximum Precipitation for Barrick Gold - Hemlo property.

Areva Resources Canada Inc. - Nunavut, N.W.T., Canada

Estimated the Probable Maximum Precipitation for the area of proposed uranium mining and milling operation at Kivallik region. The probable maximum precipitation value will be used for tailing pond and dam design.

E ANDRÉ POIRIER, P.ENG.

SENIOR ENGINEER / MUNICIPAL DESIGN PROJECT MANAGER

CORE SKILLS

- Municipal Engineering
- Water and Wastewater Servicing

Professional Summary

André Poirier is a water systems engineer with over 18 years of experience on a variety of infrastructure projects. André has led teams in identifying solutions that provide practical and cost-effective long-term solutions to water and wastewater servicing issues. His experience includes infrastructure planning, design, construction management, and infrastructure optimization. Project experience includes System Master Planning, Class Environmental Assessments, Conveyance Studies, Life-Cycle Costing exercises, Servicing Capacity Studies, Flow monitoring and I/I analysis, and the development of water and wastewater servicing strategies. On the design side, he has managed linear projects (water, wastewater, steam, and storm), stormwater management facilities, and multidisciplinary small facility projects including pump stations, odor control facilities. André supports on a rigorous approach to systems planning, design, and operations that integrate policy, physical capacity limits, demand/load projections based on measurable trends in the system, as well as a creative analysis of opportunities to best meet the system, needs with the most simple and long term cost effective approach. Andre supports a knowledge-based decision-making approach that facilitates knowledge transfer and higher-order consensus-based decisions.

EDUCATION

B.Sc., Water Resources, University of Guelph, Guelph, ON, Canada, 1997

B.Ed, Math & Science, York University, Toronto, ON, Canada, 2000

MEMBERSHIPS/AFFILIATIONS

Professional Engineers Ontario (PEO –since 2002)

LANGUAGES

Fluent in English, French, & Spanish. Speak, read and write Persian and Arabic

Representative projects

Class EAs / Planning – Water Wastewater Servicing – Master Plans

Twinning of Primary Transmission Main – Preliminary Design & EA – Elgin Area Water Supply.

2007, Lead Project Engineer. A 15.7 km transmission main from the Port Stanley treatment plant to the St-Thomas Terminal Reservoir is the primary conduit for the Elgin Area Water Supply System. It is also the limiting component from a capacity perspective.

The design exercise considered the optimal size of the new main 900 to 1350 mm in terms of future demand as well as the feasibility of various proposed routes.

Lake Huron and Elgin Area Water Supply System –Master Plan

2008-2010, Project Manager. The Lake Huron and Elgin Area Primary Water Supply Systems (PWSSs) provide treated water to a municipal area of approximately 450,000 including the Cities of London, St. Thomas, and Strathroy as well as other townships in Huron, Middlesex, and Elgin Counties. The PWSSs regularly update their Master Plan once in 5 years. The Master Plan provides a 20-year capital plan that provides timing and costs for major capital projects driven by demand, reliability, or regulatory consideration. The study considered the City of London's plans to implement a new pressure zone in the City of London as well as the new regulatory impacts associated with the Great Lakes Sustainable Water Resources Agreement.

City of Cambridge, Boxwood Eco-Industrial Subdivision

2007 – 2010, Project Manager / Engineer. A Municipal Class Environmental Assessment for storm drainage and stormwater management sanitary and water services, zoning by-law amendment, detailed design for infrastructure required to develop a new industrial subdivision, to meet the demand for serviced land and attract business to the city. The subject property comprises some 90 ha of predominantly agricultural lands within the designated urban Greenfield areas of North Cambridge. The EA has was completed in 2008, subsequently, there was an amendment associated with locating the pumping station on a neighboring property, as well as a sot sharing agreement for use of the pumping station. Services including 3 SWM ponds, a sanitary pumping station, roads water, and sewer were completed in 2014. Lands are now occupied by various industries including aerospace and others.

York Region Water & Wastewater Master Plan

2015, Deputy Lead, Infrastructure Planning. York Region's 5-year update of its Master Plan in 2015 addressed a few challenges including - regulatory issues related to Lake Simcoe and the Ontario Great Lakes Strategy, and the need to evaluate servicing strategies based on the expansion of Lake Ontario based or Lake Simcoe based water supply growth. Authored the technical memorandum evaluating constraints and opportunities related to the expansion of Lake Simcoe based water supply into urban growth areas of Newmarket, East Gwillimbury, and Aurora as a means of limiting the transfer of Lake Ontario Water out of the Lake Ontario Watershed boundary.

Grimsby Water Storage Expansion EA

2015, Project Engineer. Reviewed siting options for a new water reservoir in the Grimsby Water Supply System (Niagara Region).

Bronte Meadows Servicing Study – Halton Region – Water & Wastewater Lead

2016, Bronte Meadows is a 152 ha area in East Burlington that is zoned for employment land use. A servicing study was conducted based on the Region of Halton's Infowater™ and InfoSewer™ planning models. The subject lands were originally planned to be serviced out of Burlington Zone 2 (B2) – the study reviewed the topographic requirements and determined that the area needed to be serviced from a higher pressure

zone. With information from the InfoWater™ model, the study reviewed options for extending Zone 3 service into this area as well as the level of service available from the existing and planned Zone 3 storage, conveyance and pumping facilities. The study confirmed the downstream capacity of the wastewater collection system and identified connection points and a conceptual sewer layout for the development. A staged approach was presented allowing for the Burloak Drive corridor to be serviced as an initial stage bringing water services from zone 3 down to Burloak Drive and connecting to an existing sanitary sewer at Burloak and Mainway.

Class EA for the Storm Sewer Outlet to Mill Creek – the City of St. Thomas

2009, Project Manager. A 100-year sewer outlet running through a ravine in St. Thomas requires an upgrade to meet current standards and to remediate erosion caused by a washout at certain points in the system. The sewer runs primarily through people's yards and there were some ambiguity in the access (easement) agreements that needed to be addressed.

Huron Industrial Park Sanitary Sewer Extension

2010, City of London Project Development Consultant. An existing study had indicated a new sewage pumping station was required. A careful review of the service area determined that a gravity solution was possible providing a cost effective servicing plan. A conceptual sewer design was prepared in June 2010 and the City was able to go through the environmental assessment process and construct the sewer in a period of 8 months.

Thundering Waters Servicing Plans – City of Niagara Falls – Water & Wastewater Lead

2016, Thundering Waters is a 196 ha multi-use residential, commercial, and institutional development in Niagara Falls.

Burnt Log Management Lands – Environmental Servicing Implementation Report - Brampton

2014, Project Manager – Lead Engineer. Development of a servicing plan for a 20 ha, 800 unit medium density development. Stormwater management is achieved through LID measures including roof drainage separation, bio-retention and multiple outlets to receiving wetlands.

Countryside Employment Lands & Residential Block – Functional Servicing, Environmental Impact Mitigation, Wetland Monitoring, Stormwater Management Staging – City of Brampton

2011-2013. Project Manager - multidisciplinary natural feature assessment and mitigation plan for a 60 ha industrial development to meet TRCA and City of Brampton requirements.

Combined Sewers / Sewage Pumping Stations / Odour Control & Sewer Remediation

Old Orchard & Woodsview Sewage Pumping Station, CSO and Forcemain Upgrades - Region of Niagara (Grimsby)

2015, Project Manager – Design phase. Upgrades to two pump stations in Grimsby, including full replacement of forcemains, construction of combined sewer overflow pipe in

the right of way upstream of one pump station. As part of the project, a review of the CSO volume and configuration was conducted resulting in significant cost savings on the CSO Super-Pipe construction through the system through an optimized configuration.

Clarence Street Sewer Separation and Road Reconstruction – City of London
2006, Project Engineer – Design and Construction. A 100-year-old combined brick sewer system existed in the subject area. The solution involved providing a new storm sewer in the roadway with 3 principal outlets: 2 connections to the existing storm sewers, and retrofitting an existing combined sewer overflow outlet to the Thames River that as a storm sewer outlet. MOE (Now MOECC) was consulted prior to applying for an approval. Completed as part of a total road reconstruction and water main replacement.

Gordon Avenue Sewer Remediation & Biofilter – City Of London
2005, Project Manager. Design & construction of the sewer on Gordon Avenue Hill (Phase I), design & construction of a biofilter odour control system (Phase II)

Ash Lagoon Decant Recycle System – Pump Station – City of London
2006, Project Manager. Pump Station and Forcemain that recycles ash decent through the wastewater treatment plant to comply with MOE requirements.

Crestwood – Pump Station – Wet Weather Overflow - City of London
2006, Project Design Engineer. Design & construction of a wet weather storage at the upstream end of the wastewater collection system reducing stress downstream.

Linear Infrastructure - Tunneling / Microtunneling / Trenchless Design & Construction

Queen Street Major Trunk Storm Sewer, Stratford, ON, Canada

2016, Lead Civil Design Engineer – preliminary, detailed design and construction specifications for a major trunk storm sewer that includes a 600 m x 2250 mm diameter curvilinear section to be installed by micro tunneling.

London District Energy to St. Joseph's Hospital Steam Transmission Main
2008-2009, Project Engineer – Contract Manager. 3 km x 400 mm insulated steam main and 100 mm condensate return linking the Hospital to London District Energy's Natural Gas Cogeneration facility. Accelerated Construction Schedule - Design contract awarded in June 2009 and construction began on September 1st, 2009 with a 90-day completion schedule that was met by December 2009. Engineers & crews working 7 days a week. Directional drilling across two railways, as well as major intersections.

Preliminary Design of East Brampton Waterman (1500 mm ID x 5km Zone 4 & 900-1200 mm ID x 5 km Zone 5) Region of Peel

(2014-2015) Project Team Advisor - Linear Construction Concepts– The scope of the project was to review alternatives for two large diameter water mains connecting Beckett Sproule Pumping Station and the East Brampton Pumping Station. My role was to assist the team in reviewing the construction methodologies (open cut, trenchless incl micro-tunnel, and ETBM) through a critical section of the project (Clark Boulevard from Highway 410 to Dixie Road and Queen Street). The evaluation considered various trenchless approaches, and alignments for the two watermains, in order to optimize the

overall value of the design in terms of construction cost, temporary & permanent property impacts, and disturbance to the public, traffic intersections etc.

Kingsleigh Court / Alliance Road Watermain Renewal – Construction Phase – Region of Halton

2010, Project Manager Owner. Replacement of Watermains along Kingsleigh Court, Structural Lining of Cast Iron Watermain through Alliance Road Easement. A joint project between the Town of Milton and the Region of Halton. Coordinated with road reconstruction of Kingsleih Court.

Villages of Sally Creek – Phase I and II – Detail design of municipal services -City of Woodstock

2004, Project Engineer. Completed detail design of phase 1 of a site servicing plan for a residential and commercial Development. Conducted detail Design of Sanitary services, water distribution, Storm Sewers and 3 SWM facilities.

Water Supply – System Control & Optimization

St. Jacobs Elmira Demand Forecasting and Operational Optimization – Pilot Project – Region of Waterloo

2006, Project Engineer. The optimization program accurately predicts the short-term water demand in the system & provides control set points that allow the operators to eliminate fluctuations in production, reducing the total stress on the water supply system.

Intelligent Sanitary Flow Monitoring, Inflow & Infiltration & Sewer Capacity Assessment

Annexation Lands West Sewer Capacity Study – City of Barrie

2014, Project Manager. The City of Barrie annexed 2335 ha along its Southern Boundary in 2010. Deployment of 5 telemetered flow monitors and two rain gauges to establish the existing user generated flows and Inflow/Infiltration (I/I) flows to establish the available capacity in the sewer system for servicing the western portion of the annexation lands.

Langstaff Gateway West – Sewer Capacity Study

2012, Project Manager. Equipment Selection, deployment, and operation of sanitary flow and rainfall monitoring equipment. Sewershed flow characterization, residual capacity evaluation, and development staging plan for Langstaff Gateway Richmond Hill Centre.

Asset Management

City of Toronto Stormwater Management Ponds Condition Assessment

2015-2016, Project Manager. Completed an asset management exercise with the City of Toronto to evaluate the condition of 37 SWM ponds including the Morningside area SWM ponds, the Dunkers Flow Balancing CSO system, the Humber Bay SWM Pond, and the Earl Bales SWM Facility.

Stormwater Management

Highbury Estates Subdivision – Killaly North Regional SWM facility – City of London

2004, Project Engineer. Detail design of servicing for a 102 lot subdivision and for a regional SWM facility to service 106 ha.

Fanshawe Ridge Subdivision –SWM facility – City of London

2005, Project Engineer. SWM staging plan.

KEVIN W. KER,
B.Sc.Agr., M.Sc., B.Ed., PhD, P.Ag.

EDUCATION
B.Sc. Agriculture (Hon), University of Guelph, 1980
M.Sc. University of Guelph, 1984
B.Ed. University of Western Ontario, 1992
Ph.D. Brock University, 2010
PROFESSIONAL ORGANIZATIONS
American Society of Enology and Viticulture (ASEV)
ASEV – Eastern Section (director 2010-2013)
Ontario Institute of Agrologists (OIA)
Agriculture Institute of Canada (AIC)
National Viticulture and Enology Extension Leadership (US)

POSITIONS HELD
1997-Present: Ker Crop Management Services (KCMS), President
1997-Present: Lecturer and Part time Instructor, Dept of Biological Sciences, Brock University
1997-Present: Research Associate and Professional Affiliate, Brock University Cool Climate Oenology and
Viticulture Institute (CCOVI)
1984-1997: Horticultural Crop Specialist /Pest Management Specialist (Tree Fruit and Grapes), Ontario
Ministry of Agriculture, Food and Rural Affairs, Vineland, Ontario
1983-1984 Research Associate/ Pest Management Specialist, Ontario
Ministry of Agriculture, Food and Rural Affairs
1980-1983 Research Associate, Department of Environmental Biology,
University of Guelph

EXPERIENCE
Currently, Dr. Ker and KCMS are working in conjunction with Brock University on a Best Practices for Grape production project and providing the expertise and work to assess vine hardiness and vine survival (http://www.ccovi.ca/vine-alert/). In addition, he has been retained by the Ontario Tender Fruit Producers to undertake a 5 year study of tender fruit tree (2013-2018) hardiness and creation of an automated network alert program to assist growers in decision making to mitigate of potentially harmful weather events (low winter temperatures, frost etc.).
Dr. Ker has been affiliated with the Cool Climate and Oenology and Viticulture Institute (CCOVI) of Brock University since its inception in 1997. In addition, Dr. Ker has been a lecturer for courses in Grapevine Biology 2P99 (Vine biology, vine nutrition, vine physiology and development). and Grape Pest Management 4P30 (all aspects of pest and disease management, sprayer applications and alternative pest control practices) as part of the four year honours science degree program at Brock University. Dr. Ker has over 30 years of professional experience across Canada conducting research (Agriculture and Agri-Food Canada and the University of Guelph) and providing extension services for the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) as a specialist for Viticulture and Grape Integrated Pest Management (IPM), Research Associate, Pest

Management Advisor (Tree fruit and Grapes), and Horticultural Crop Advisor (Tree Fruit and Grapes). During his tenure with OMAFRA he authored and co-authored numerous publications that include the bi-annual crop production publications used by all members of the tree fruit, grape and wine industry and multiple factsheets on insect and disease pests.

Dr. Kevin Ker is:

. past chair (2005-2007) of the Ontario Grape and Wine Research and Services Committee;
 member of the National Viticulture and Enology Extension Leadership Committee (US);
 Past Chair of the Niagara Peninsula Fruit and Vegetable Growers Association Convention (1988-
1991);
 Past advisor to the Teaching Vineyard Committee for Niagara College and Brock University;
and has served on other group and industry related organizations.
As senior consultant with KCMS, Kevin advises wineries, grower cooperatives, individual producers as well as
associations, educational institutions and government. He has been an invited speaker to conferences, symposia and
educational institutions in Canada, United States, Australia, New Zealand and China to deliver presentations and
lectures on Tree Fruit production; Grape IPM; viticultural practices; Winter Injury Evaluation and Protection
strategies; vineyard and orchard nutrition and many other topics.
Kevin as part of KCMS was retained by the Ontario Grape Growers Marketing Board and the Ontario Tender Fruit
Producers' Marketing Board to provide regional IPM services to members in Niagara and Southwestern Ontario
(1997-2009) and with other agencies to undertake ongoing research for pesticide registrations, vineyard
management practices and evaluation of novel pest control strategies.
Currently, Dr. Ker and KCMS are working in conjunction with Brock University on a Best Practices for Grape
production project and providing the expertise and work to assess vine hardiness and vine survival
(http://www.ccovi.ca/vine-alert/). In addition, he has been retained by the Ontario Tender Fruit Producers to
undertake a 5 year study of tender fruit tree (2013-2018) hardiness and creation of an automated network alert
program to assist growers in decision making to mitigate of potentially harmful weather events (low winter
temperatures, frost etc.).

Recent Publications and Presentations:

 Willwerth, J., **Ker, K.,** and Inglis, D. **(2014)** Best Management Practices for Reducing Winter Injury in
Grapevines. CCOVI, Brock University, St Catharines, ON. 05 September 2014. 82 pp.
 Ker, Kevin W. (2014). Vine Nutrition. Andrew Peller Ltd, Kelowna B.C. June 02 , 2014

 Ker, Kevin W. (2014). Dealing with Adverse Weather Conditions in Vineyards. Andrew Peller Ltd, Kelowna
B.C. June 02 , 2014
 Ker, Kevin W. (2012). How Growing Season Weather Patterns Affect Vine Hardiness. 2012 CCOVI Lecture
Series. February 29, 2012. Brock University, St. Catharines, ON
 Ker, Kevin W. (2012) Presentation on Viticulture Needs and Activities. Senate Standing Committee on
Agriculture and Forestry. February 15, 2012. Ottawa ON
 Ker. K. W. and M. K. Kompf. (2012). Growing Concerns - Dealing with Reduced Professional Resources.
International Cool Climate Symposium. February 02, 2012. Hobart Tasmania (poster)
 Ker, Kevin W., Brewster, R., Willwerth, J. and Inglis, D. (2012). Climatic Influences on Vine Hardiness –
Vine Assessments and Use of Protection Practices. International Cool Climate Symposium. February 02, 2012.
Hobart Tasmania
 Stafne, Eric T., Hellman, Edward, Striegler, R. Keith, Kelsey, Kathleen, Greer, Lane and **Ker, Kevin**. (2012).
eViticulture: Online Educational Materials for Commercial Grape Growers Developed by the Grapes
Community of Practice. International Cool Climate Symposium. February 02, 2012. Hobart Tasmania (poster)
 Pickering, Gary, Hallett, Rebecca, Inglis, Debbie, McFadden-Smith, Wendy, and **Ker, Kevin W.** (2012).
Coccinellidae and Ladybug Taint in Cool-Climate Wine Regions: the Threat and Sustainable Prevention
Practices. International Cool Climate Symposium. February 02, 2012. Hobart Tasmania.
 Ker, K.W. (2011) Grapevine Nutrition. New England Vegetable and Fruit Conference. December 16, 2011.
Manchester, NH.

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix D

Road Functional Designs

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix D1

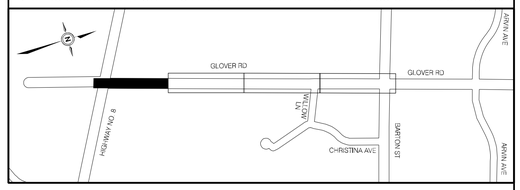
Glover Road Functional Road Design

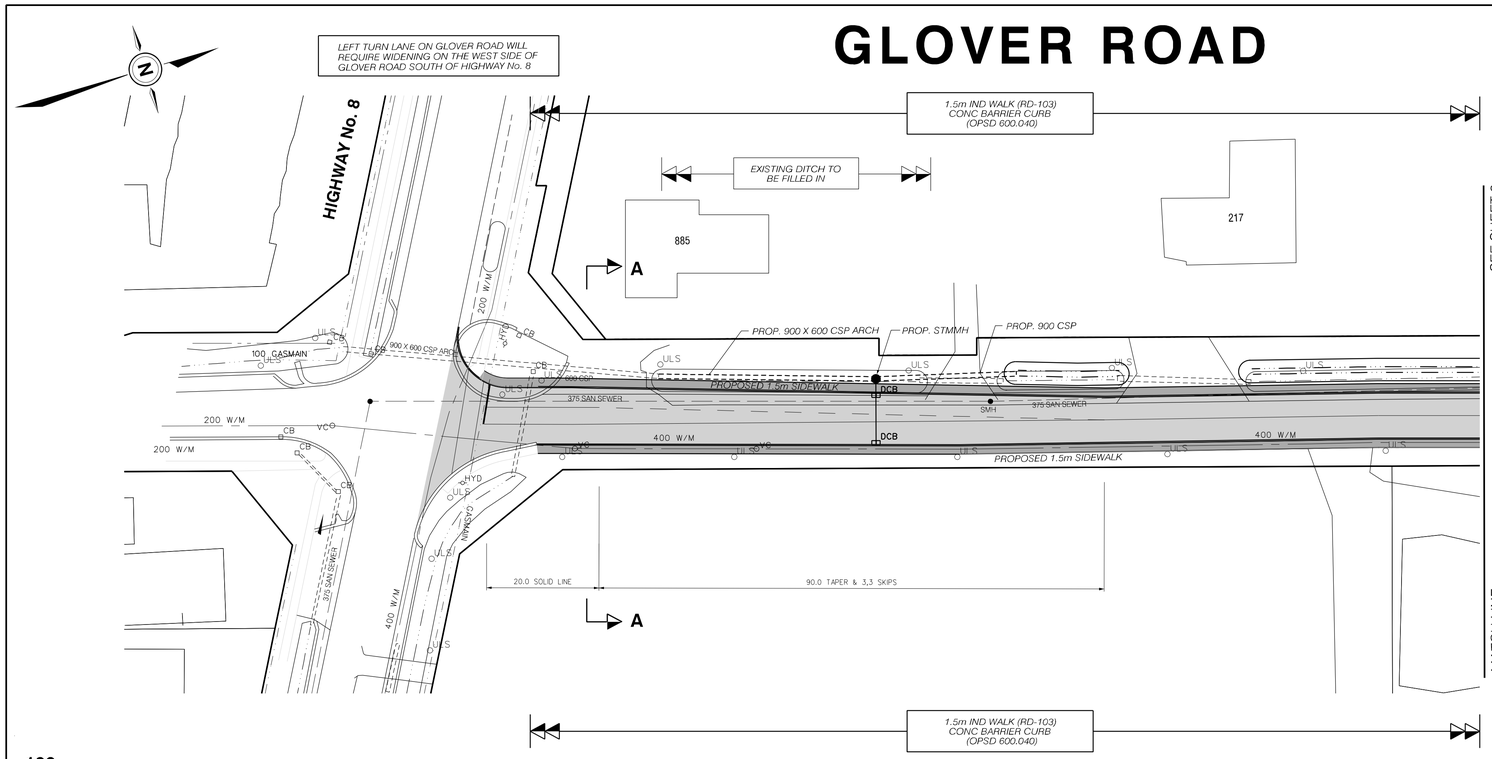
GLOVER ROAD

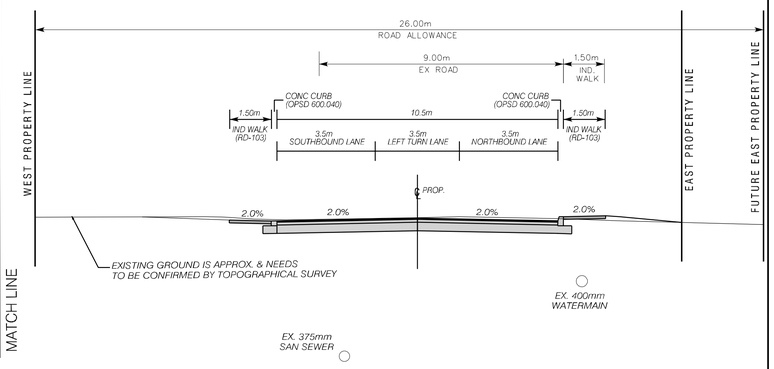
GLOVER ROAD

FILE No.	CONTRACT No. DRAWING No.	SHEET No. 1 OF 4

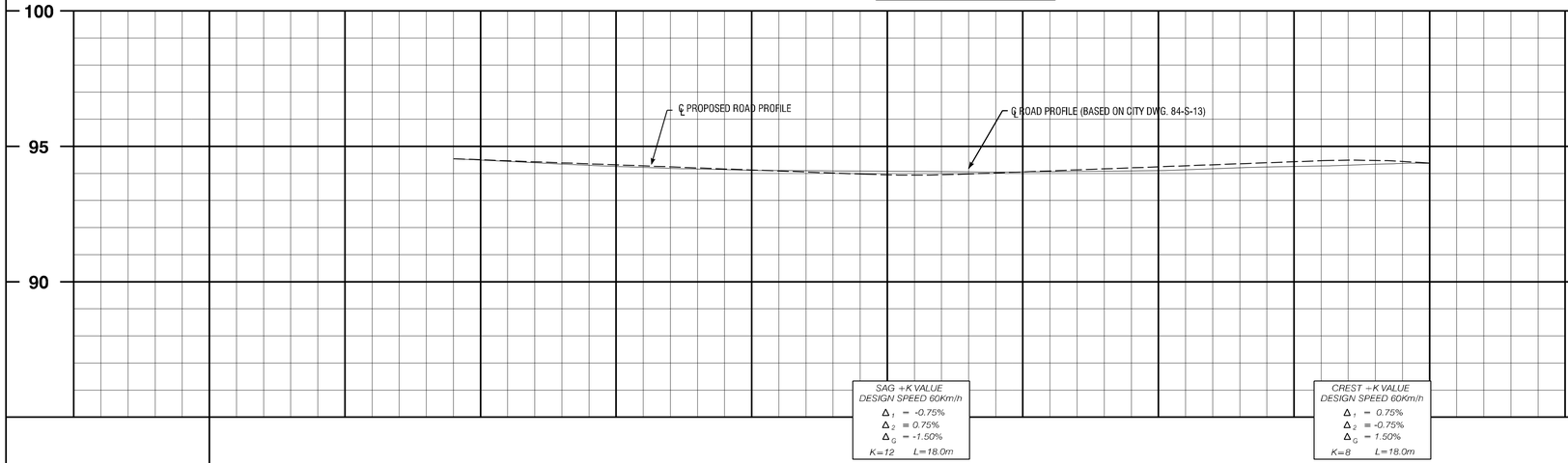
DIMENSIONS SHOWN ON THIS PLAN ARE IN MILLIMETRES UNLESS OTHERWISE NOTED







ROADWAY CROSS-SECTION
SECTION 'A-A'
SCALE 1:20



C.B. REMOVALS/REPLACEMENTS	EXISTING SEWER MANHOLES

PROPOSED ℄ OF ROAD PROFILE ELEVATIONS	0+000 PVI 94.54	75.98 @ -0.75%				0+75.98 BVC 93.973	0+93.89 EVC 93.973	66.40 @ 0.75%				1+60.29 BVC 94.471	1+78.27 EVC 94.404		PROPOSED ℄ OF ROAD PROFILE ELEVATIONS
EXISTING ℄ OF ROAD PROFILE ELEVATIONS (BASED ON CITY DWG. 84-S-13)	94.54	94.43	94.32	94.143	94.123	94.105	94.073	94.093	94.123	94.237	94.297	94.392	94.367		EXISTING ℄ OF ROAD PROFILE ELEVATIONS (BASED ON CITY DWG. 84-S-13)
EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE	00+00	00+15	00+30	00+45	00+60	00+75	00+90	01+05	01+20	01+35	01+50	01+65	01+80		EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE

No.	REVISIONS	INITIAL	DATE

DRAWN BY: HJF DATE: JANUARY 2018

REFERENCE MATERIAL:

Surveyed By :

Geodetic Bench Mark Index No. Elevation=
Borehole Report -

SCALES
HORIZONTAL 1:500 (0, 5m, 10m, 20m)
VERTICAL 1:100 (0, 1m, 2m, 4m)

Project Manager (Design)
NAME

Manager of Design
NAME

CITY OF HAMILTON
Planning and Economic Development Deparment

GLOVER ROAD
Functional Design
From : Highway No. 8
To : Barton Street

XXX

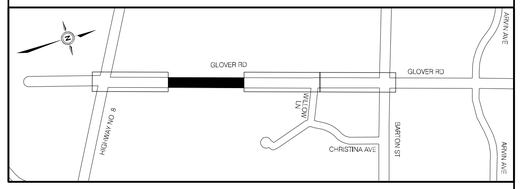
Glover Road Sheet 1.dgn 1/25/2018 8:48:13 AM

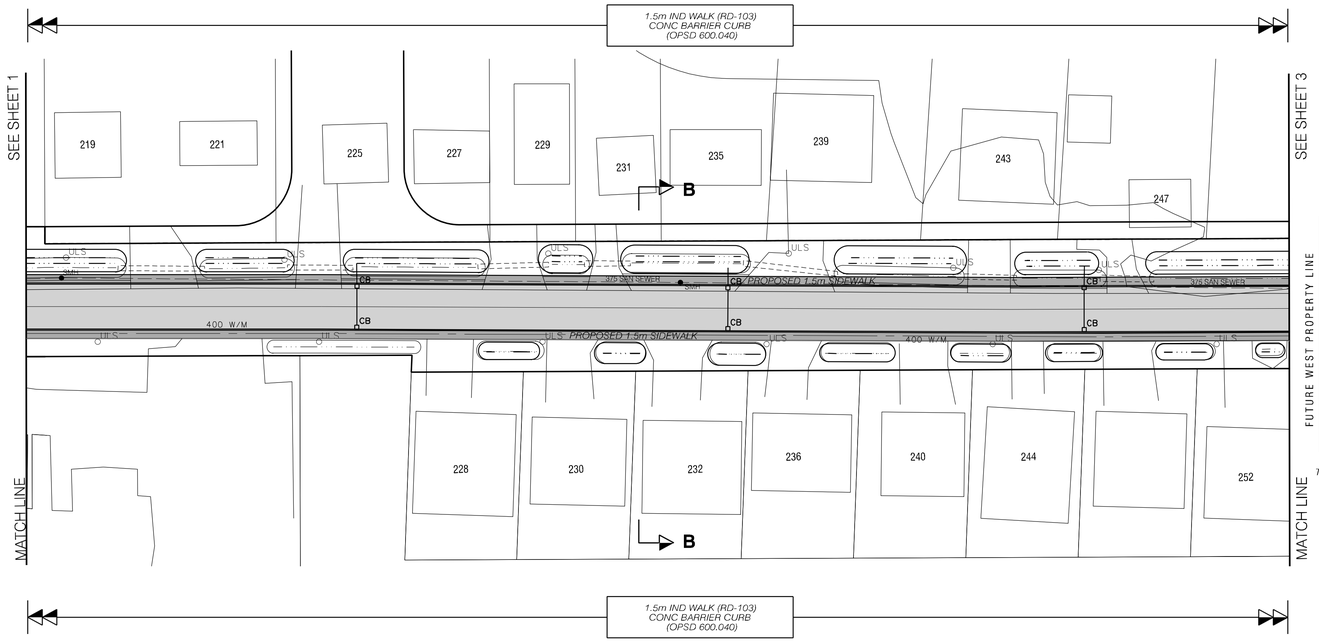
GLOVER ROAD

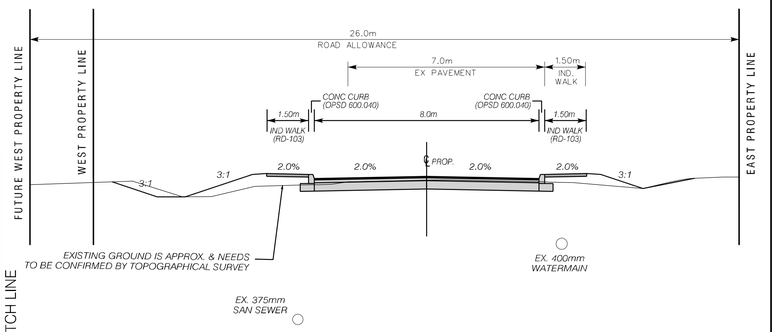
GLOVER ROAD

FILE No.	CONTRACT No. DRAWING No.	SHEET No. 2 OF 4

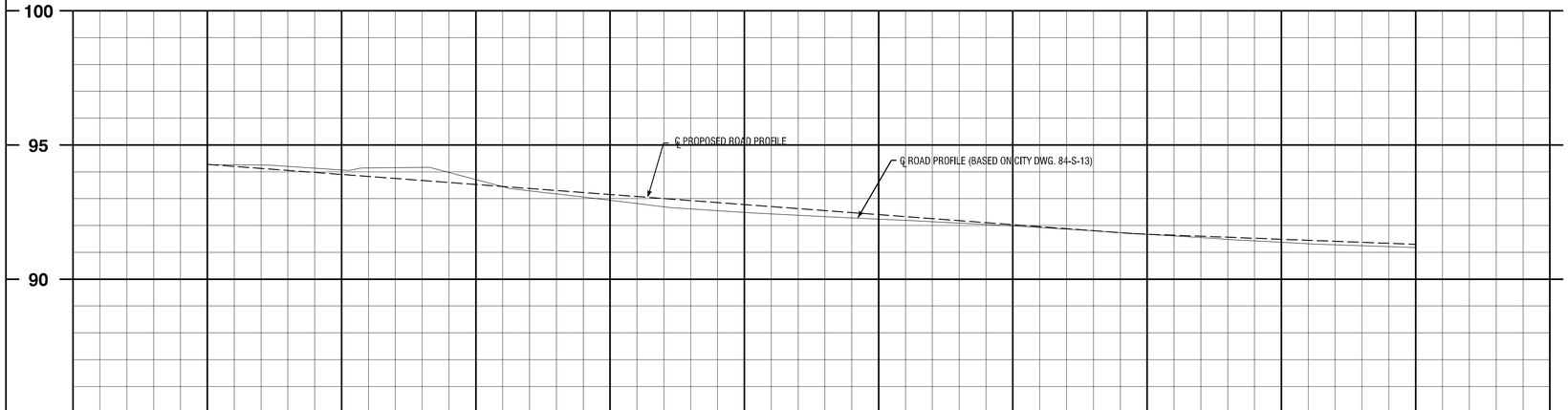
DIMENSIONS SHOWN ON THIS PLAN ARE IN MILLIMETRES UNLESS OTHERWISE NOTED







ROADWAY CROSS-SECTION
SECTION 'B-B'
SCALE 1:20



C.B. REMOVALS/REPLACEMENTS	EXISTING SEWER MANHOLES

PROPOSED ℄ OF ROAD PROFILE ELEVATIONS		174.23 @ -1.50%											3+52.50 BVC 91.79	143.50 @ -0.75%				PROPOSED ℄ OF ROAD PROFILE ELEVATIONS
EXISTING ℄ OF ROAD PROFILE ELEVATIONS (BASED ON CITY DWG. 84-S-13)	94.367	94.162	94.782	93.488	93.140	92.780	92.560	92.430	92.290	92.140	91.960	91.765	91.580	91.420	91.313	91.220		EXISTING ℄ OF ROAD PROFILE ELEVATIONS (BASED ON CITY DWG. 84-S-13)
EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE	01+80	01+95	02+10	02+25	02+40	02+55	02+70	02+85	03+00	03+15	03+30	03+45	03+60	03+75	03+90	04+05		EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE

No.	REVISIONS	INITIAL	DATE

DRAWN BY: HJF
DATE: JANUARY 2018
REFERENCE MATERIAL:
Surveyed By :
Geodetic Bench Mark Index No. Elevation=
Borehole Report -

SCALES
HORIZONTAL 1:500 (0, 5m, 10m, 20m)
VERTICAL 1:100 (0, 1m, 2m, 4m)

Project Manager (Design)
NAME
Manager of Design
NAME

CITY OF HAMILTON
Planning and Economic Development Department

GLOVER ROAD
Functional Design
From : Highway No. 8
To : Barton Street

XXX

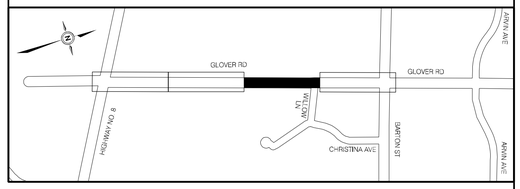
Glover Road Sheet 2.dgn 1/25/2018 8:49:54 AM

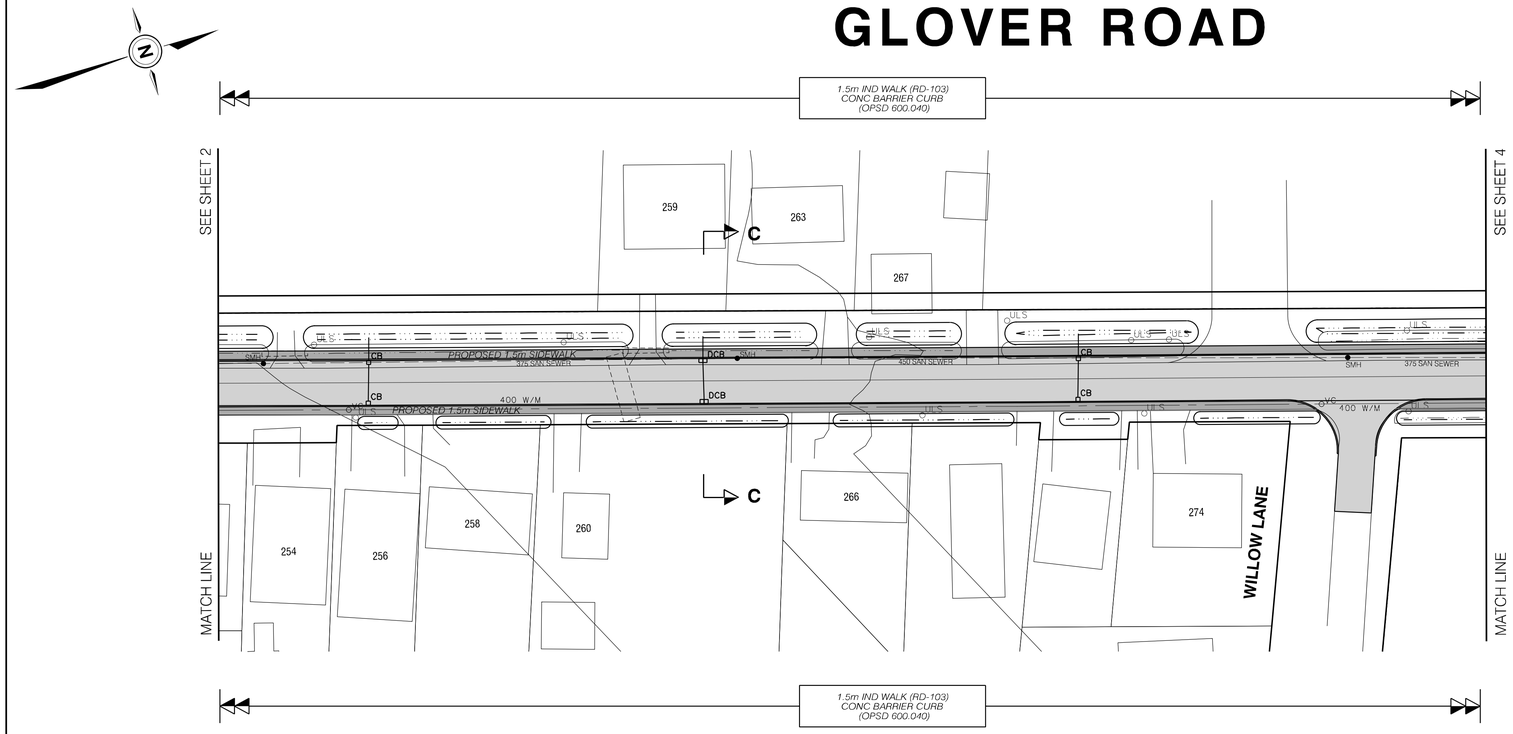
GLOVER ROAD

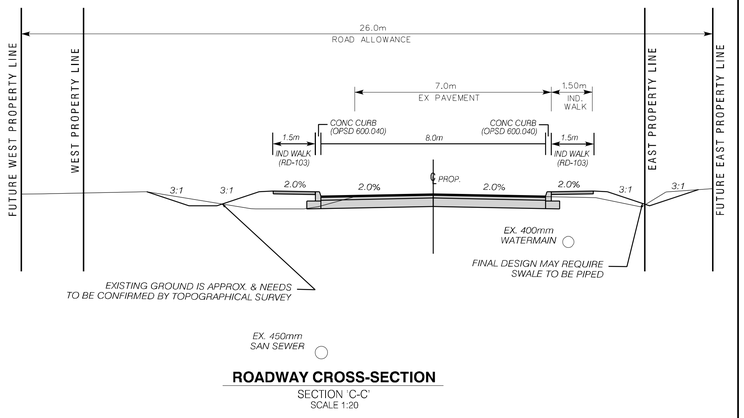
GLOVER ROAD

FILE No.	CONTRACT No. DRAWING No.	SHEET No. 3 OF 4

DIMENSIONS SHOWN ON THIS PLAN ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

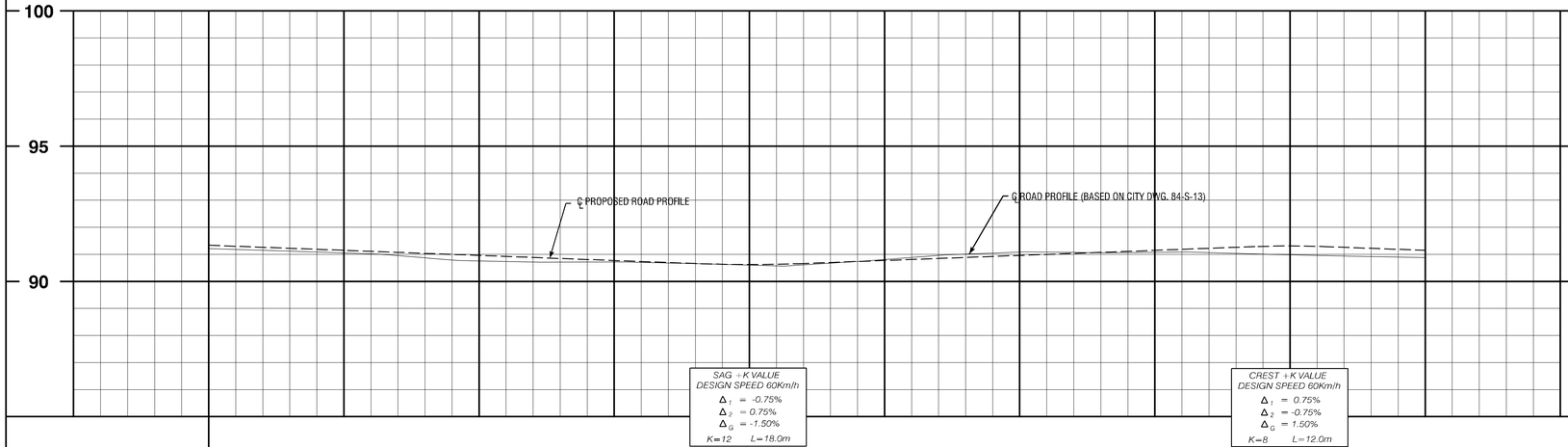






ROADWAY CROSS-SECTION

SECTION 'C-C'
SCALE 1:20



C.B. REMOVALS/REPLACEMENTS	EXISTING SEWER MANHOLES

PROPOSED ℄ OF ROAD PROFILE ELEVATIONS		143.50 @ -0.75%						4+96.0 BVC 90.752	5+14.0 EVC 90.572	85.0 @ 0.75%				5+99.0 BVC 91.39	6+11.0 EVC 91.39			PROPOSED ℄ OF ROAD PROFILE ELEVATIONS
EXISTING ℄ OF ROAD PROFILE ELEVATIONS (BASED ON CITY DWG. 84-S-13)	91.220	91.125	90.980	90.825	90.835	90.765	90.682	90.862	91.097	91.202	91.172	91.197	91.112	91.043	90.988	90.958		EXISTING ℄ OF ROAD PROFILE ELEVATIONS (BASED ON CITY DWG. 84-S-13)
EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE	04+05	04+20	04+35	04+50	04+65	04+80	04+95	05+10	05+25	05+40	05+55	05+70	05+85	06+00	06+15	06+30		EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE

No.	REVISIONS	INITIAL	DATE

DRAWN BY: HJF DATE: JANUARY 2018

REFERENCE MATERIAL:

Surveyed By :

Geodetic Bench Mark Index No. Elevation=
Borehole Report -

SCALES

HORIZONTAL 1:500 (0, 5m, 10m, 20m)

VERTICAL 1:100 (0, 1m, 2m, 4m)

Project Manager (Design)
NAME

Manager of Design
NAME

CITY OF HAMILTON
Planning and Economic Development Deparment

GLOVER ROAD

Functional Design

From : Highway No. 8
To : Barton Street

XXX

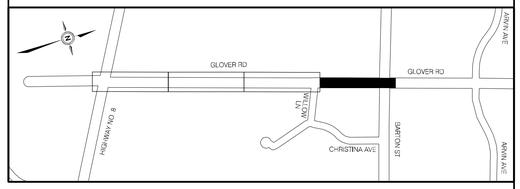
Glover Road Sheet 3.dgn 1/30/2018 10:33:26 AM

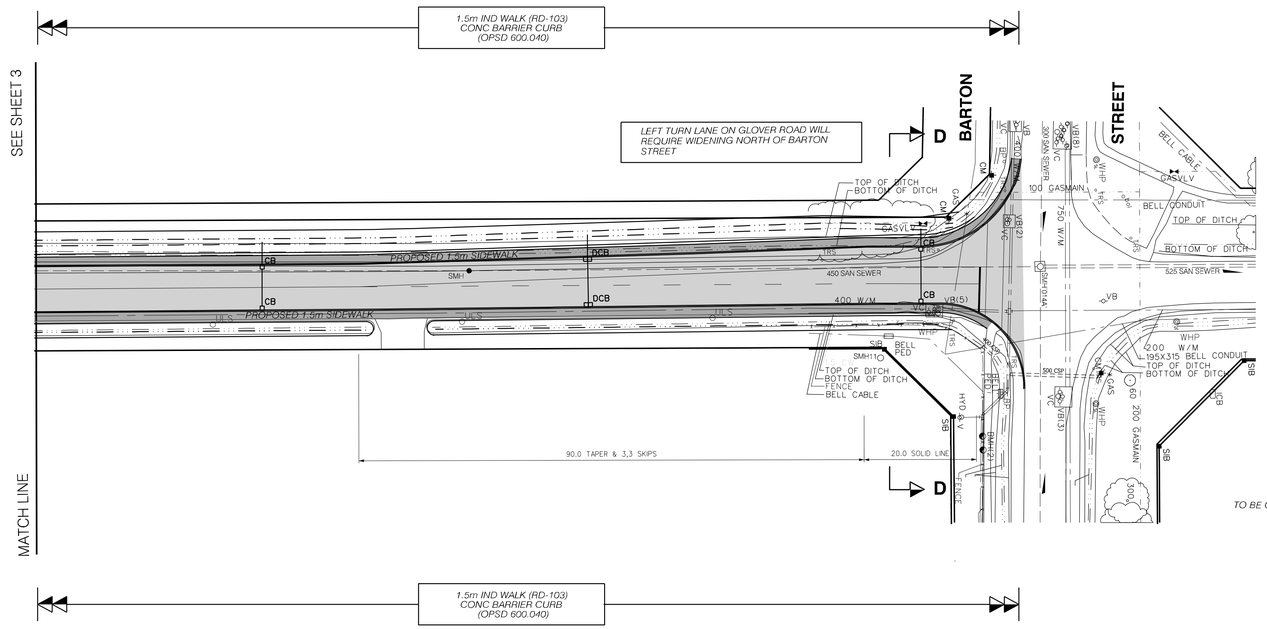
GLOVER ROAD

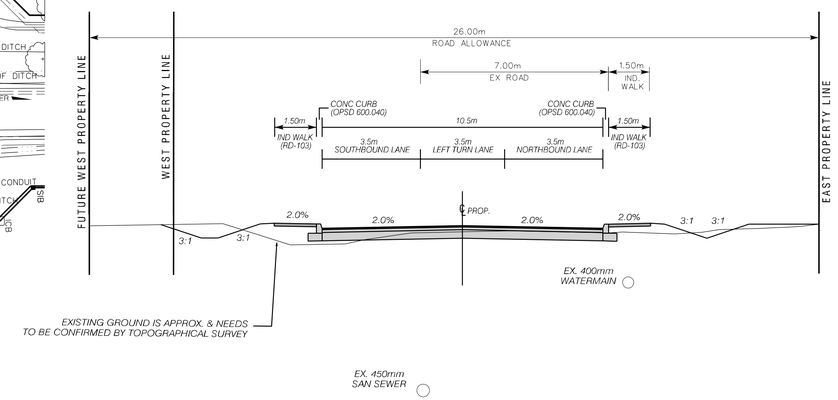
GLOVER ROAD

FILE No.	CONTRACT No. DRAWING No.	SHEET No. 4 OF 4

DIMENSIONS SHOWN ON THIS PLAN ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

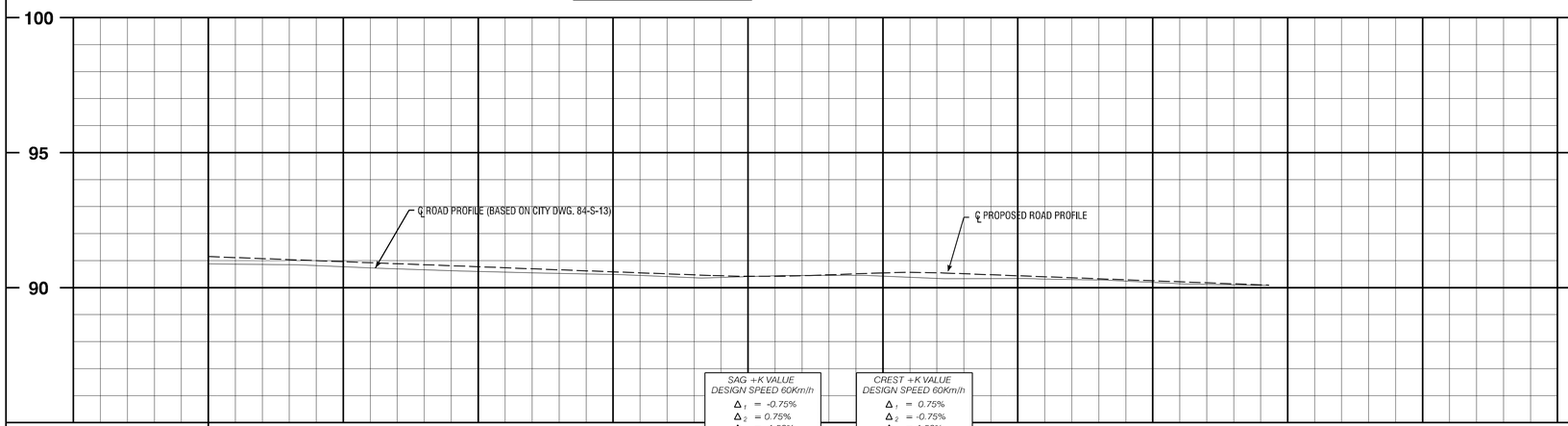






ROADWAY CROSS-SECTION

SECTION 'D-D'
SCALE 1:20



C.B. REMOVALS/REPLACEMENTS

EXISTING SEWER MANHOLES

PROPOSED ℄ OF ROAD PROFILE ELEVATIONS		112.5 @ -0.75%						7+23.5 BVC 90.547	7+41.5 EVC 90.547	7+54.25 BVC 90.643	7+66.25 EVC 90.643	60.35 @ -0.75%			8+26.6 PVI 90.191		PROPOSED ℄ OF ROAD PROFILE ELEVATIONS
EXISTING ℄ OF ROAD PROFILE ELEVATIONS (BASED ON CITY DWG. 84-S-13)	90.958	90.833	90.728	90.658	90.598	90.468	90.563	90.575	90.455	90.461	90.406	90.251					EXISTING ℄ OF ROAD PROFILE ELEVATIONS (BASED ON CITY DWG. 84-S-13)
EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE	06+30	06+45	06+60	06+75	06+90	07+05	07+20	07+35	07+50	07+65	07+80	07+95	08+10	08+25			EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE

No.	REVISIONS	INITIAL	DATE

DRAWN BY: HJF
DATE: JANUARY 2018

REFERENCE MATERIAL:

Surveyed By :

Geodetic Bench Mark Index No. Elevation=
Borehole Report -

SCALES

HORIZONTAL 1:500 (0, 5m, 10m, 20m)
VERTICAL 1:100 (0, 1m, 2m, 4m)

Project Manager (Design)
NAME

Manager of Design
NAME

CITY OF HAMILTON
Planning and Economic Development Deparment

GLOVER ROAD
Functional Design
From : Highway No. 8
To : Barton Street

XXX

Glover Road Sheet 4.dgn 1/25/2018 9:02:52 AM

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix D2

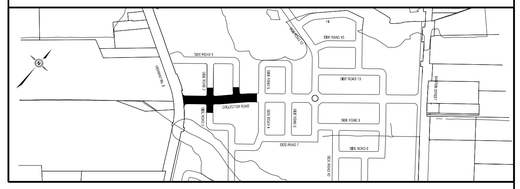
North South Collector Road Functional Design

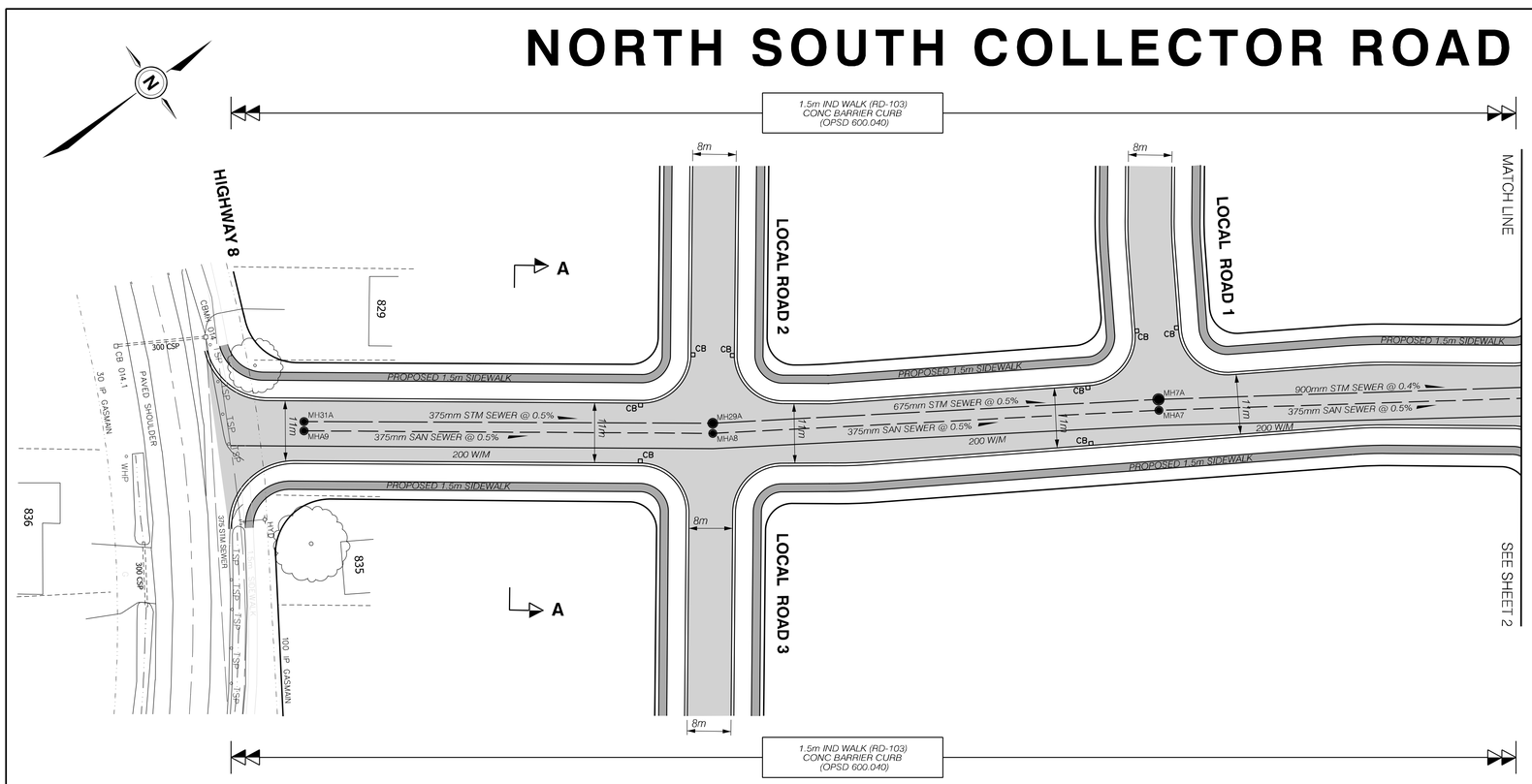
NORTH SOUTH COLLECTOR ROAD

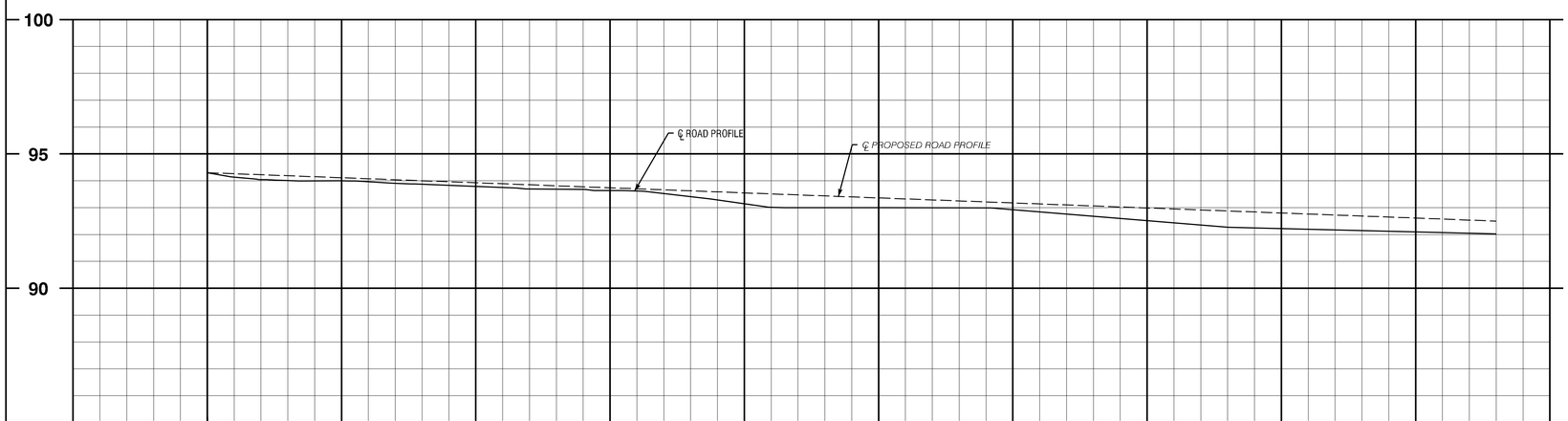
NORTH SOUTH COLLECTOR ROAD

FILE No.	CONTRACT No. DRAWING No.	SHEET No. 1 OF 4

DIMENSIONS SHOWN ON THIS PLAN ARE IN MILLIMETRES UNLESS OTHERWISE NOTED







SEWER REPAIRS and OVERFLOWS	EXISTING SEWER MANHOLES
C.B. REMOVALS/REPLACEMENTS	

PROPOSED ROAD PROFILE	0+000 PVI 94.30	616.0m @ -0.75%																PROPOSED ROAD PROFILE
EXISTING ℄ OF ROAD PROFILE ELEVATIONS	94.30	94.01	93.97	93.83	93.70	93.64	93.41	93.01	92.99	92.99	92.93	92.68	92.43	92.19	92.00	92.00	92.00	EXISTING ℄ OF ROAD PROFILE ELEVATIONS
EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE	0+00	0+15	0+30	0+45	0+60	0+75	0+90	1+05	1+20	1+35	1+50	1+65	1+80	1+95	2+10	2+25	2+40	EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE

No.	REVISIONS	INITIAL	DATE

DRAWN BY: HJF DATE: JULY 2017

REFERENCE MATERIAL:

Geodetic Bench Mark Index No. Elevation=
Borehole Report -

SCALES
HORIZONTAL 1:500 (0, 5m, 10m, 20m)
VERTICAL 1:100 (0, 1m, 2m, 4m)

Project Manager (Design)
NAME

Manager of Design
NAME

CITY OF HAMILTON
Planning and Economic Development Deparment

NORTH SOUTH COLLECTOR ROAD
Functional Design
From : Highway 8
To : Barton Street

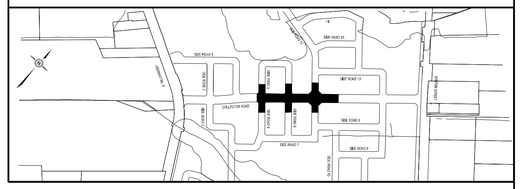
Collector Road 1_1.dgn 7/4/2017 9:31:33 AM

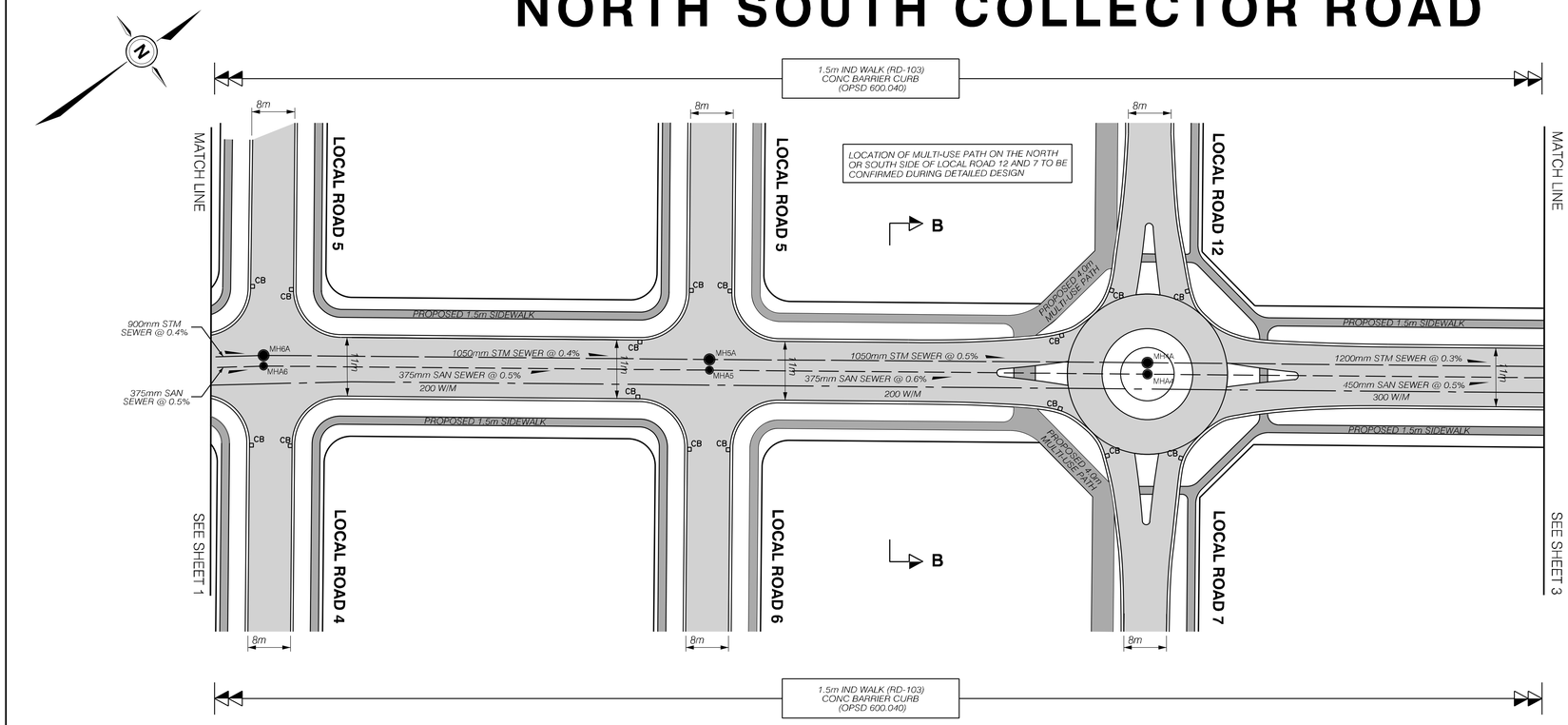
NORTH SOUTH COLLECTOR ROAD

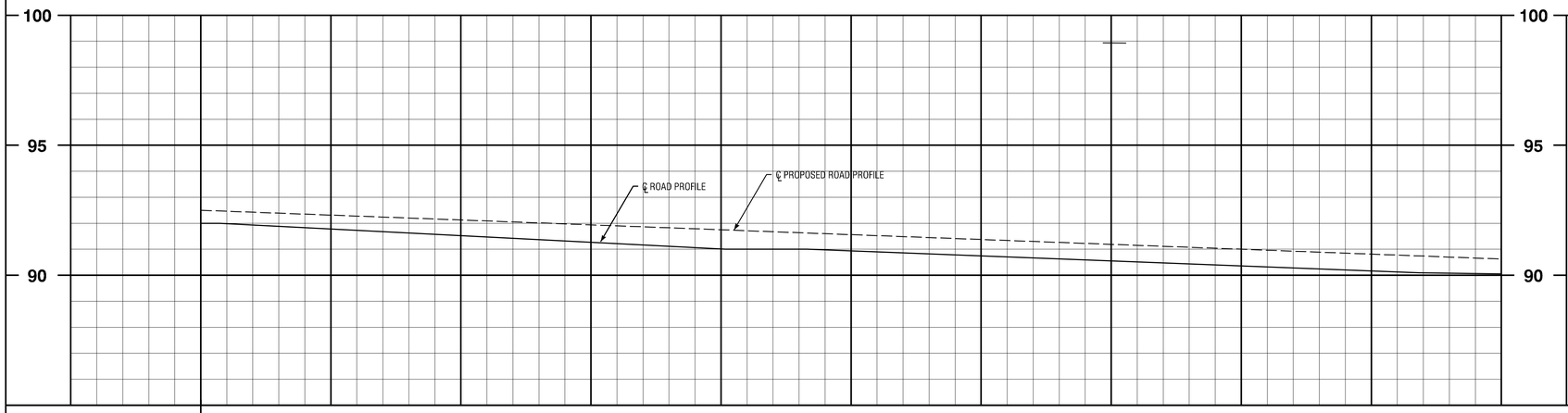
NORTH SOUTH COLLECTOR ROAD

FILE No.	CONTRACT No. DRAWING No.	SHEET No. 2 OF 4

DIMENSIONS SHOWN ON THIS PLAN ARE IN MILLIMETRES UNLESS OTHERWISE NOTED







SEWER REPAIRS and OVERFLOWS	EXISTING SEWER MANHOLES
C.B. REMOVALS/REPLACEMENTS	

PROPOSED ROAD PROFILE	616.0m @ -0.75%																			PROPOSED ROAD PROFILE
EXISTING ℄ OF ROAD PROFILE ELEVATIONS	92.00	91.89	91.74	91.59	91.43	91.27	91.11	91.00	90.97	90.85	90.73	90.61	90.49	90.40	90.31	90.18	90.05	90.00		EXISTING ℄ OF ROAD PROFILE ELEVATIONS
EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE	2+40	2+55	2+70	2+85	3+00	3+15	3+30	3+45	3+60	3+75	3+90	4+05	4+20	4+35	4+50	4+65	4+80	4+90		EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE

No.	REVISIONS	INITIAL	DATE

DRAWN BY: HJF
DATE: JULY 2017
REFERENCE MATERIAL:
Geodetic Bench Mark Index No. Elevation=
Borehole Report -

SCALES
HORIZONTAL 1:500 (0, 5m, 10m, 20m)
VERTICAL 1:100 (0, 1m, 2m, 4m)

Project Manager (Design)
NAME
Manager of Design
NAME

CITY OF HAMILTON
Planning and Economic Development Deparment

NORTH SOUTH COLLECTOR ROAD
Functional Design
From : Highway 8
To : Barton Street

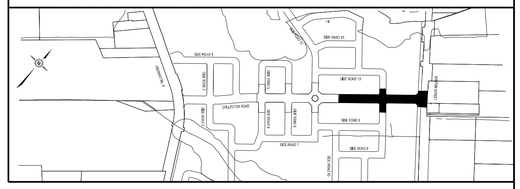
Collector Road 2 (1).dgn 7/4/2017 9:57:59 AM

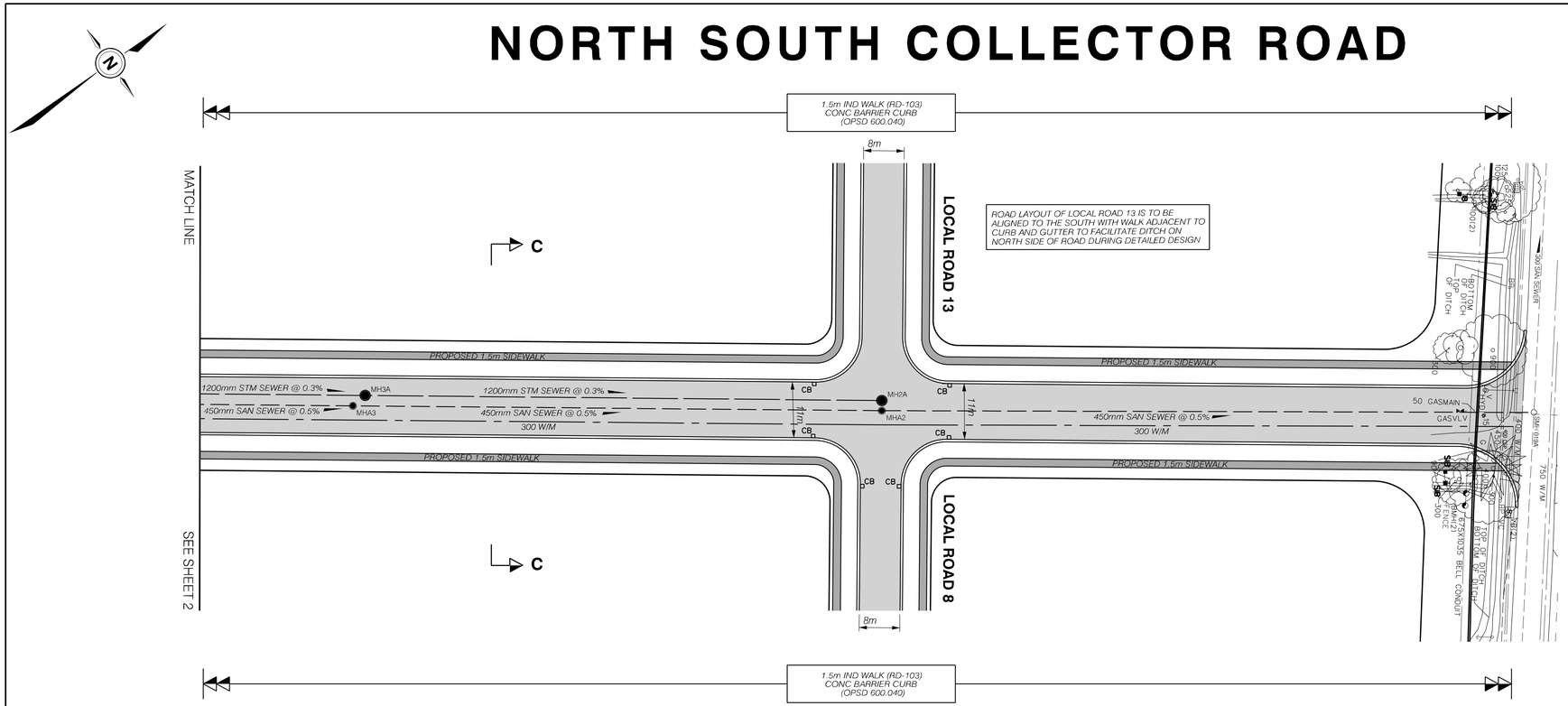
NORTH SOUTH COLLECTOR ROAD

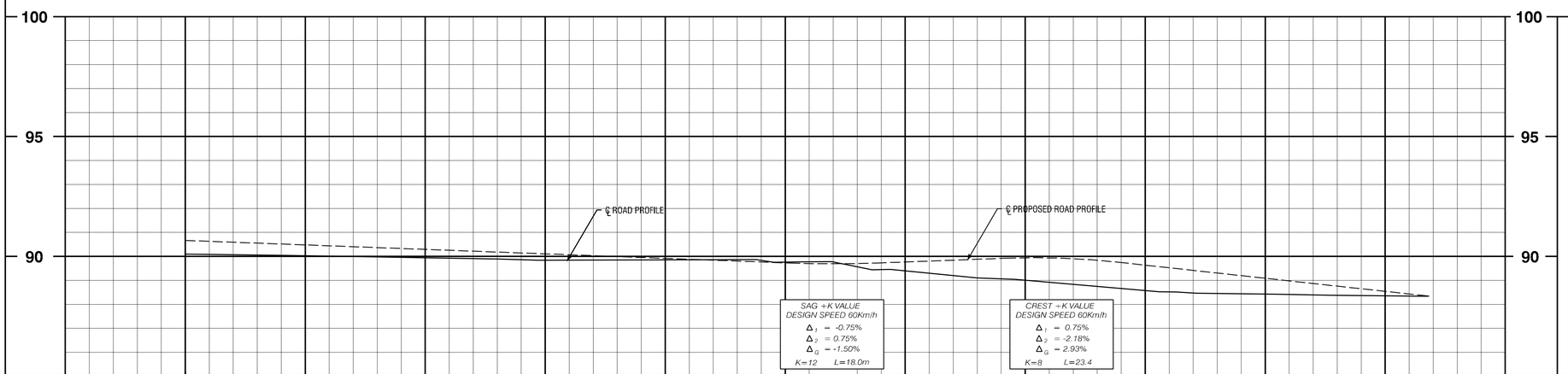
NORTH SOUTH COLLECTOR ROAD

FILE No.	CONTRACT No. DRAWING No.	SHEET No. 3 OF 4

DIMENSIONS SHOWN ON THIS PLAN ARE IN MILLIMETRES UNLESS OTHERWISE NOTED







SEWER REPAIRS and OVERFLOWS	EXISTING SEWER MANHOLES
C.B. REMOVALS/REPLACEMENTS	

PROPOSED ROAD PROFILE		616.0m @ -0.75%								6+16.0 BVC 89.68	6+34.0 EVC 89.68	26.9 @ 0.75%	6+60.9 BVC 89.88	6+84.45 EVC 89.71	64.55 @ -2.18%				7+49.0 PVI 88.30		PROPOSED ROAD PROFILE
EXISTING ℄ OF ROAD PROFILE ELEVATIONS	90.00	90.00	90.00	89.94	89.90	89.95	89.79	89.78	89.77	89.73	89.56	89.30	89.00	88.79	88.54	88.36	88.35	88.32	88.30		EXISTING ℄ OF ROAD PROFILE ELEVATIONS
EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE	4+90	4+95	5+10	5+25	5+40	5+55	5+70	5+85	6+00	6+15	6+30	6+45	6+60	6+75	6+90	7+05	7+20	7+35	7+49		EXISTING ℄ OF ROAD ALLOWANCE CHAINAGE

No.	REVISIONS	INITIAL	DATE

DRAWN BY: HJF DATE: JULY 2017

REFERENCE MATERIAL:

Geodetic Bench Mark Index No. Elevation=
Borehole Report -

SCALES
HORIZONTAL 1:500 (0, 5m, 10m, 20m)
VERTICAL 1:100 (0, 1m, 2m, 4m)

Project Manager (Design)
NAME

Manager of Design
NAME

CITY OF HAMILTON
Planning and Economic Development Deparment

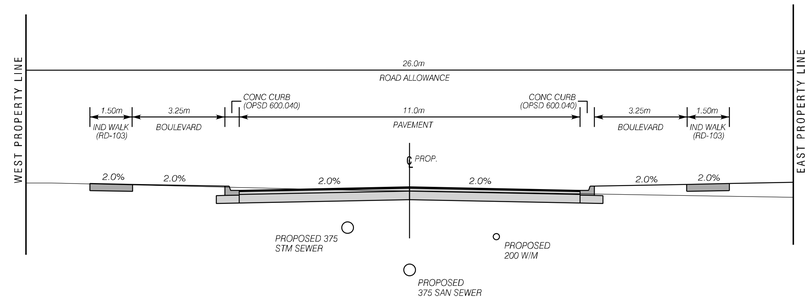
NORTH SOUTH COLLECTOR ROAD
Functional Design
From : Highway 8
To : Barton Street

Collector Road 3 (1).dgn 7/4/2017 10:04:48 AM

NORTH SOUTH COLLECTOR ROAD

FILE No.	CONTRACT No. DRAWING No.	SHEET No. 4 OF 4
DIMENSIONS SHOWN ON THIS PLAN ARE IN MILLIMETRES UNLESS OTHERWISE NOTED		

GENERAL NOTES:
1) SANITARY AND STORM SEWER DEPTHS TO BE DETERMINED DURING DETAILED DESIGN
2) EXISTING GROUND IS APPROX. & NEEDS TO BE CONFIRMED BY TOPOGRAPHICAL SURVEY



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SECTION 'B-B'
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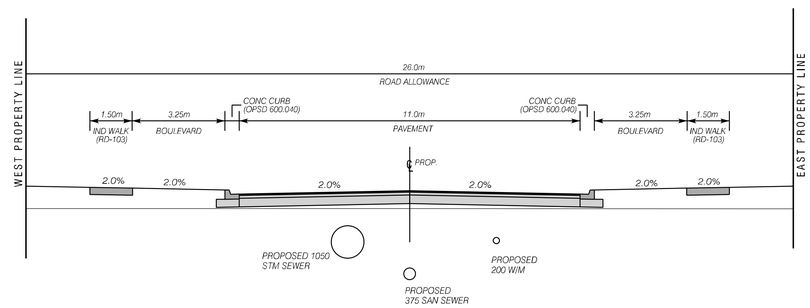

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SECTION 'A-A'
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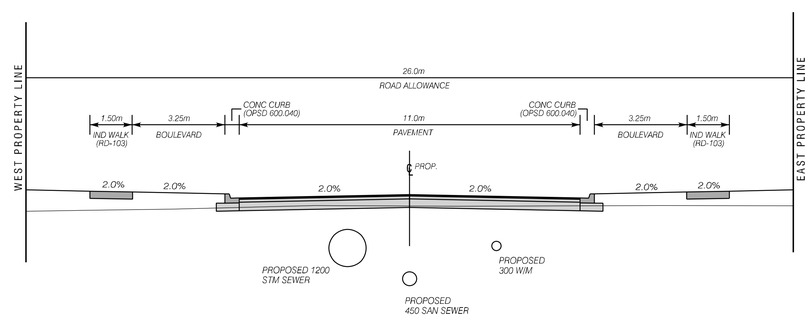

ROADWAY CROSS-SECTION
SECTION 'C-C'
SCALE 1:100

No.	REVISIONS	INITIAL	DATE	DRAWN BY: HJF	DATE: JULY 2017	SCALES				Project Manager (Design)	CITY OF HAMILTON Planning and Economic Development Deparment	NORTH SOUTH COLLECTOR ROAD Functional Design From : Highway 8 To : Barton Street
				REFERENCE MATERIAL:		AS NOTED				NAME		
										Manager of Design		
				Geodetic Bench Mark Index No.	Elevation=					NAME		
				Borehole Report -								

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Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix E

Environmental Impact Study

Submitted to:

City of Hamilton

c/o Margaret Fazio
Sr. Project Manager,
Infrastructure Planning

Environmental Impact Study in support of the Block 2 Servicing Strategy

FINAL REPORT

Submitted by:

Aquafor Beech Limited

in association with
Thompson Environmental Planning and Design

July 5th 2018

Contact:
Ash Baron.
Aquafor Beech Ltd.
baron.a@aquaforbeech.com
519-224-3733

Address:
55 Regal Road, Unit 3
Guelph, ON
N1K 1B6

Aquafor Beech project no. 65736

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Table of Contents

Figures

Tables

1 Introduction

Aquafor Beech Limited has been retained by the City of Hamilton to conduct environmental investigations in supporting Block Two of the Fruitland – Winona Block Servicing Strategy.

This report provides an assessment of the ecological features and functions within the study area and is intended to support the evaluation of servicing from an ecological perspective. Specifically, this report outlines the study area in a landscape context, provincial and regional policies that affect the servicing strategy, current environmental conditions, a description of the proposed future land uses and associated servicing, potential impacts to the Natural Heritage System (NHS) as a result of proposed servicing, recommended mitigation measures to the potential impacts, and a summary of key findings.

As part of the report, ecological studies were conducted within the area defined by the City of Hamilton as Barton Street to the north, Highway 8 to the south, watercourse 6.0 to the west, and Glover Road to the east. This area is herein referred to as the study area.

1.1 Study Area

The Block 2 study area (**Figure 1-1**) is located below the base of the Niagara Escarpment, approximately halfway between the Niagara Escarpment and Lake Ontario. There are no existing natural areas from the study area that act as a linkage to either the Niagara Escarpment or Lake Ontario. The study area consists of natural lands (wetlands, woodlands, thickets, cultural meadows, and watercourses), agricultural fields, hedgerows, and plantations. The most prominent natural heritage features in the study area are wetlands and woodlands associated with watercourses 6.0 and 7.0, and a wetland complex (formerly a woodland-swamp complex) located in the north-east corner. Existing land uses within the study area include agricultural, institutional, commercial (i.e. a gas station), and rural residential uses. Surrounding land uses consist of the aforementioned in addition to commercial uses along Barton Street. The Queen Elizabeth Way (QEW) runs east and west, approximately 1 km north of the study area.

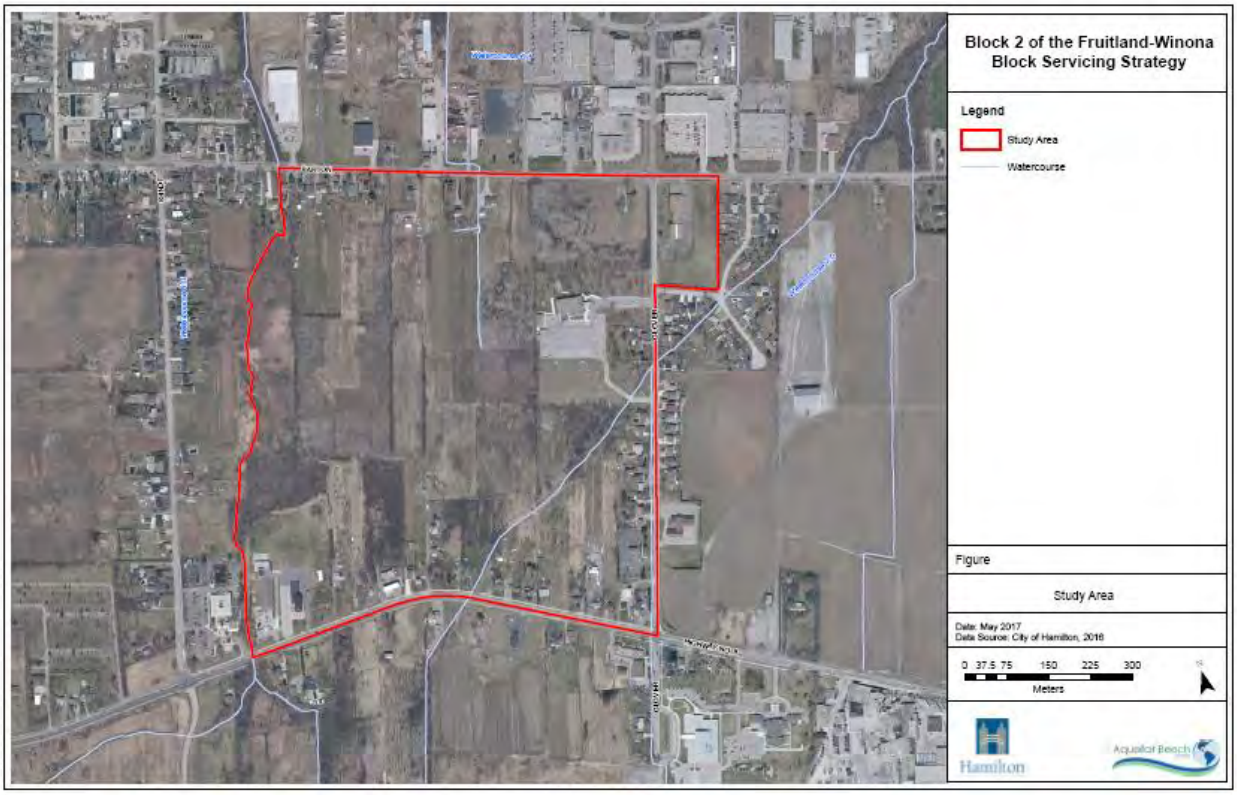


Figure 1-1: Block 2 Study Area

1.2 Background Information Review

In preparation of this report, the following background information has been reviewed and incorporated where relevant:

- City of Hamilton Urban Official Plan (2012);
- The Provincial Policy Statement (2014);
- Hamilton Conservation Authority policies and mapping;
- Hamilton Natural Areas Inventory Species Checklist Document (2014);
- Solicitation of natural heritage data form the Ministry of Natural Resources and Forestry (MNRF);
- Natural Heritage Information Centre (NHIC)/MNRF database (Make-a-Map);
- Stoney Creek Urban Boundary Expansion (SCUBE) Subwatershed Study, Phases 1 and 2 Final Report (Aquafor Beech Ltd., 2014);
- SCUBE Subwatershed Study, Phase 3; Implementation (Aquafor Beech Ltd., 2013);
- Fruitland-Winona Secondary Plan (City of Hamilton, 2016);
- Natural Heritage Assessment of Lands Bounded by Fruitland Road, Glover Road, Barton Street and Highway 8, Hamilton (draft) (Dillon Consulting Ltd. 2009);
- Linkage Assessment of 860 and 884 Barton Street, Stoney Creek (Colville Consulting Inc 2012); and,
- Historic and current aerial photography.

2 Policy Review

The following subheadings outline the NHS policy framework considered in the development of the NHS and subsequent mapping provided by each policy.

2.1 Provincial Policy Statement

The 2014 Provincial Policy Statement (PPS), promulgated under the Planning Act, directs municipal land- use planning activities related to matters of provincial interest. Section 2.1.2 of the PPS states that:

> the diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features (Ministry of Municipal Affairs and Housing, 2014).

The PPS supports not only the protection of individual natural heritage features (woodlands, wetlands, valleylands, wildlife habitat, etc.) but also the linkages that

connect them into a broader Natural Heritage System (NHS). The NHS approach is effective because it acknowledges that natural heritage features have strong functional ties to one another, and this functionality may be compromised when such features become isolated within a predominately agricultural or urban matrix.

The PPS defines a Natural Heritage System as:

> A system made up of natural heritage features and areas, and linkages intended to provide connectivity (at the regional and site level) and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species and ecosystems. These systems can include natural heritage features and areas, federal and provincial parks and conservation reserves, other natural heritage features, lands that have been restored and areas with the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that enable ecological functions to continue (Ministry of Municipal Affairs and Housing, 2014).

The NHS approach is a useful method for the protection of natural heritage features and areas because it reinforces an understanding that the elements of the system have strong ecological ties to each other, as well as to other physical features and areas in the overall landscape. The NHS approach also addresses a number of important land use planning concerns, including biodiversity decline, landscape fragmentation and the maintenance of ecosystem health.

2.2 City of Hamilton Urban Official Plan 2013 & the Fruitland-Winona Secondary Plan

Consistent with the approach taken by the Province, the City of Hamilton has taken a systems approach to natural heritage system planning: the NHS is comprised of Core Areas and Linkages, as illustrated below in **Figure 2-1**. The City of Hamilton's Urban Official Plan (2012; Vol. 1, Chapter G) defines Core Areas as lands comprised of *key hydrologic features, key natural heritage features, and local natural areas.* Linkages are defined as natural areas that within the landscape that ecologically connect Core Areas. These definitions are expanded upon below.

Furthermore, within the Fruitland-Winona Secondary Plan, policy B.7.4.11 states that the Natural Heritage System is comprised of Core Areas, Linkages, Vegetation Protection Zones and Restoration Areas.

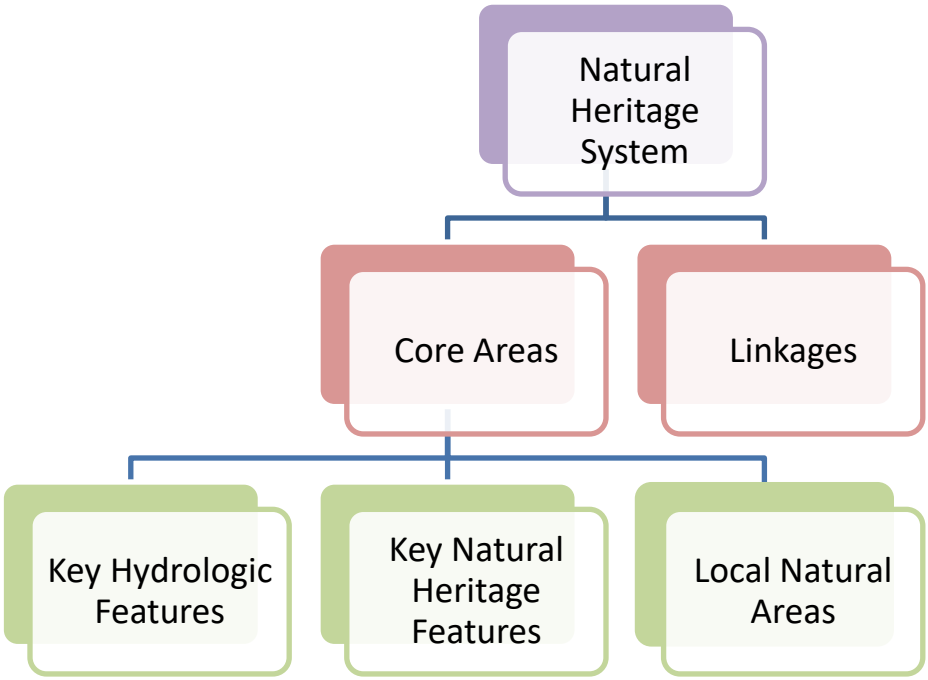


Figure 2-1: Overview of the City of Hamilton's approach to natural heritage planning

Applicable Definitions

The City of Hamilton has identified the components of a municipal NHS consisting of Core Areas and Linkages. In identifying natural heritage features in the study area, Aquafor Beech Limited relied on applicable definitions from the City of Hamilton's Urban Official Plan, as follows:

Key Natural Heritage Features are defined as:

- Significant habitat of endangered, threatened, and special concern species;
- Fish habitat;
- Wetlands;
- Life Science Areas of Natural and Scientific Interest (ANSIs);
- Significant valleylands;
- Significant woodlands;
- Significant wildlife habitat;
- Sand barrens, savannahs, and tallgrass prairies; and
- Alvars.

Key Hydrologic Features are defined as:

- Permanent and intermittent streams;
- Lakes (and their littoral zones);
- Seepage areas and springs; and,
- Wetlands.

Local Natural Areas are defined as:

- Environmentally Significant Areas as identified by the City of Hamilton;
- Unevaluated wetlands; and
- Earth Science Areas of Natural and Scientific Interest.

Linkages are defined as:

> natural areas within the landscape that ecologically connect *Core Areas*. They are avenues along which plants and animals can propagate, genetic interchange can occur, populations can move in response to environmental changes and life cycle requirements, and species can be replenished from other natural areas. Conserving linkages also protects and enhances *Core Areas*.

Connections between natural areas provide opportunities for plant and animal movement, hydrological and nutrient cycling, and maintain ecological health and integrity of the overall Natural Heritage System. Habitat fragmentation results in loss of species diversity and reduced ecosystem health and resilience. It is the intent of the City's policies that Linkages be protected, restored, and enhanced to sustain the Natural Heritage System wherever possible. Linkages are discussed in **Section 10**.

The intent of the City's natural heritage policies is to "to preserve and enhance Core Areas and to ensure that any development or site alteration within or adjacent to them shall not negatively impact their natural features or their ecological functions" (UHOP Policy C.2.3). According to the City of Hamilton's Urban Official Plan (Vol. 1 Policy C.2.3.3), "The natural features and ecological functions of Core Areas shall be protected and where possible and deemed feasible to the satisfaction of the City, enhanced. To accomplish this protection and enhancement, vegetation removal and encroachment into Core Areas shall generally not be permitted, and appropriate vegetation protection zones shall be applied to all Core Areas."

Furthermore,

- New development and site alteration shall not be permitted within fish habitat, except in accordance with provincial and federal requirements. (UHOP Vol. 1 policy C.2.5.3)

- New development and site alteration shall not be permitted within significant woodlands, significant valleylands, significant wildlife habitat and significant areas of natural and scientific interest unless it has been demonstrated that there shall be no negative impacts on the natural features or on their ecological functions. (UHOP Vol. 1 policy 2.5.4)

- New development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in Section C.2.5.2 to C.2.5.4

> unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there shall be no negative impacts on the natural features or on their ecological functions. (UHOP Vol. 1 policy 2.5.5)

According to the City's Urban Official Plan, Core Areas and Linkages are within the Block 2 study area. Core Areas within Block 2 consist of Key Natural Heritage Features (Significant Woodlands, wetlands, fish habitat, significant valleylands, and significant wildlife habitat) and Key Hydrologic Features (Wetlands and Streams). Core Areas include and are adjacent to Watercourse 6.0; Linkages connect the Core Areas within the study area, as well as provide additional corridors to other natural areas (e.g. linking streams to terrestrial habitat. According to OP Schedule Maps B1 to B7, Life Science and Earth Science Areas of Natural and Scientific Interest, alvars, prairies, lakes and littoral zones, and Environmentally Significant Areas (ESAs) are not present within or adjacent to the study area. The identification of Core Areas and Linkages is discussed in **Sections 5-11**.

As stated at the beginning of this section, the Fruitland-Winona Secondary Plan sees the addition of "Restoration Areas" to the NHS as defined by the Urban Official Plan. The NHS within the Block 2 study area per the Fruitland-Winona Secondary Plan is illustrated below in **Figure 2-2**.

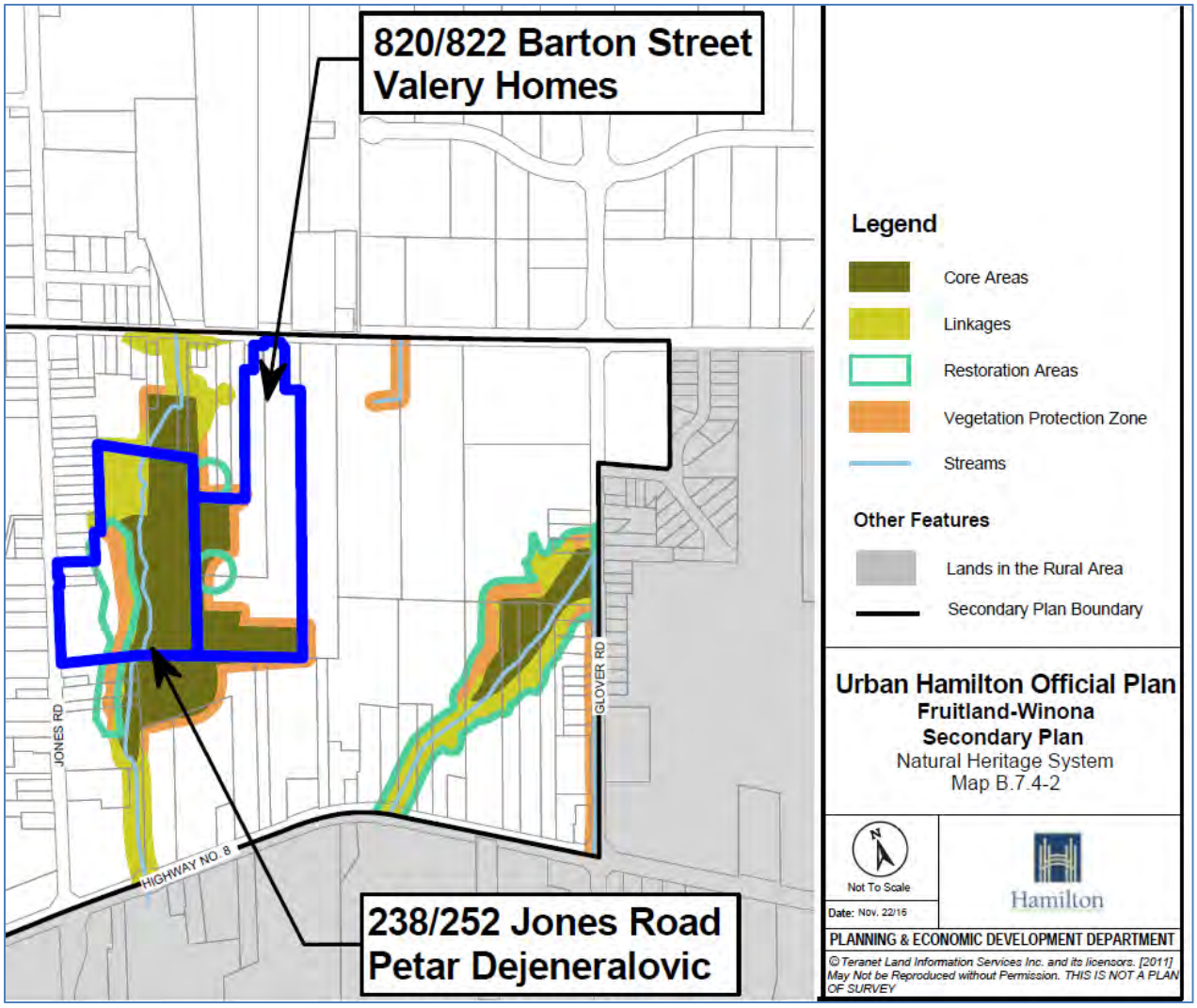


Figure 2-2: Excerpt from the Fruitland-Winona Secondary Plan Natural Heritage System (City of Hamilton 2016)

2.3 Greenbelt Plan

The current version of the Greenbelt Plan (July 2017) shows the eastern half of Block 2 within the Greenbelt. However, Greenbelt maps have yet to be updated to reflect that lands within Block 2 were removed from the Greenbelt following an Ontario Municipal Board decision.

2.4 Hamilton Conservation Authority Policies

All wetlands and their associated areas of interference are regulated by the Hamilton Conservation Authority under the Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulation (Ontario Regulation 161/06).

There are prohibitions to development within regulated flood zones. Prohibit developments within O. Reg. 161/06 are described as follows:

> 2. (1) Subject to section 3, no person shall undertake development or permit another person to undertake development in or on the areas within the jurisdiction of the Authority that are,
>
> > (b) river or stream valleys that have depressional features associated with a river or stream, whether or not they contain a watercourse, the limits of which are determined in accordance with the following rules:
> >
> > > (i) where the river or stream valley is apparent and has stable slopes, the valley extends from the stable top of bank, plus 15 metres, to a similar point on the opposite side,
> > >
> > > (ii) where the river or stream valley is apparent and has unstable slopes, the valley extends from the predicted long term stable slope projected from the existing stable slope or, if the toe of the slope is unstable, from the predicted location of the toe of the slope as a result of stream erosion over a projected 100-year period, plus 15 metres, to a similar point on the opposite side,
> > >
> > > (iii) where the river or stream valley is not apparent, the valley extends the greater of,
> > >
> > > > (A) the distance from a point outside the edge of the maximum extent of the flood plain under the applicable flood event standard, plus an allowance not to exceed 15 metres, to a similar point on the opposite side, and
> > > >
> > > > (B) the distance from a watercourse or the predicted meander belt of a watercourse, expanded as required to convey the flood flows under the applicable flood event standard, plus 15 metres, to a similar point on the opposite side;
> >
> > (c) hazardous lands;
> >
> > (d) wetlands; or

(e) other areas where development could interfere with the hydrologic function of a wetland, including areas within 120 metres of all provincially significant wetlands and wetlands greater than or equal to 2.0 hectares in size, and areas within 30 metres of wetlands less than 2.0 hectares in size. O. Reg. 161/06, s. 2 (1); O. Reg. 60/13, s. 1 (1, 2).

Development is prohibited within the regulated areas unless it is determined by the HCA that the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development (O. Reg. 161/06, s. 3 (1)). As discussed in **Section 1**, the identification of wetlands completed as part of this study may require HCA to update their regulated areas mapping pending the results of future studies which will assess the presence of a surface water connection with said wetlands. Also, the floodplain mapping for Watercourse 6.0 will be updated, if needed, as the Hamilton Conservation Authority ongoing study is finalized.

3 Field Inventory Methodologies

The methodologies of field studies undertaken in support of this study are detailed below. Survey dates are provided in each of the subsections below and are summarized in **Table 3-1**. Incidental wildlife and/or traces of wildlife (e.g. mammals, butterflies, reptiles, and amphibians) were recorded during all field surveys.

Table 3-1: Survey Dates

Survey Type	Survey Dates
Vegetation Community Assessment	Sept. 30 2015
Botanical Survey & Butternut Area Search	Sept. 30 2015 & June 9 2016
Breeding Birds	June 4, June 18 & July 8 2015
Calling Amphibians	April 16, May 21 & June 29 2015

As the majority of property ownership is private, ecological inventories were completed on properties where permission to access was granted. Biophysical surveys were not conducted *on* lands where access was not granted. In cases where permission to access was not granted, properties were assessed using a combination of observations from the property line and/or from roadsides as well as aerial photo interpretation, where possible. An exception includes lands west of Watercourse 6.0, which was actively or recently cleared during the time of vegetation community surveys. As such, a vegetation community type has not been ascribed to these lands. As stated in **Section 4.1.1**, these lands are shown in yellow hatching in **Figure 4-1**. Land access permission status is illustrated in **Figure 14-1**.

Vegetation Community Assessment

Vegetation community assessments were completed on September 30th, 2015 in accordance with the Ecological Land Classification system for Southern Ontario (Lee et al., 1998).

Vegetation communities that were assessed as part of the field work completed in 2010 in support of the SCUBE report (Aquafor Beech Ltd., 2014) were reassessed as permitted by land access permissions. Where land access was not permitted, the previous classifications were confirmed through visual surveys from adjacent properties to which access was granted, or roadsides.

Botanical Inventory and Butternut Area Search

A botanical inventory was conducted in concert with vegetation community assessments. Additional flora observed during a June 9th 2016 scoped site visit were added to the list of species observed. Spring surveys for ephemerals were not completed given the lack of potentially suitable habitat within the study area (i.e. mature upland forest) to which the study team had access. In addition, an area search for Butternut was completed on September 30, 2015.

Breeding Bird Surveys

Three breeding bird surveys were undertaken by qualified, experienced staff, using protocols consistent with the Ontario Breeding Bird Atlas (OBBA) on June 4, 2015 and June 18, 2015 and July 8, 2015 (note: a third visit was completed to confirm a sighting made during the 2nd field visit). Survey locations are illustrated in **Figure 3-1**. These were targeted early morning surveys within the southern Ontario bird breeding period (generally May 24 – July 10), conducted under appropriate weather conditions (i.e., low wind and no precipitation). All habitats within and along the edge of the study area were surveyed utilizing those properties that had provided property access. Frequent listening/observation stops at these properties during the site visits provided the necessary coverage of the study area. During field surveys, species, abundance and level of breeding evidence were recorded for all avifauna observed. Level of breeding evidence was determined using the OBBA methodology and terminology (Cadman et.al. 2007; Bird Studies Canada 2001). Avifaunal species status was evaluated using: pages from Hamilton NAI 3rd Edition 2014 Species Checklist (2014) for regional significance; MNRF / NHIC website for provincial rarity ranks (i.e., S-Ranks); the Species at Risk in Ontario list (MNRF website – updated periodically) for provincial status designations; the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E-5 (MNRF 2015) for Area-Sensitive species; and the national Species at Risk list (COSEWIC website - updated periodically) for national status designations.

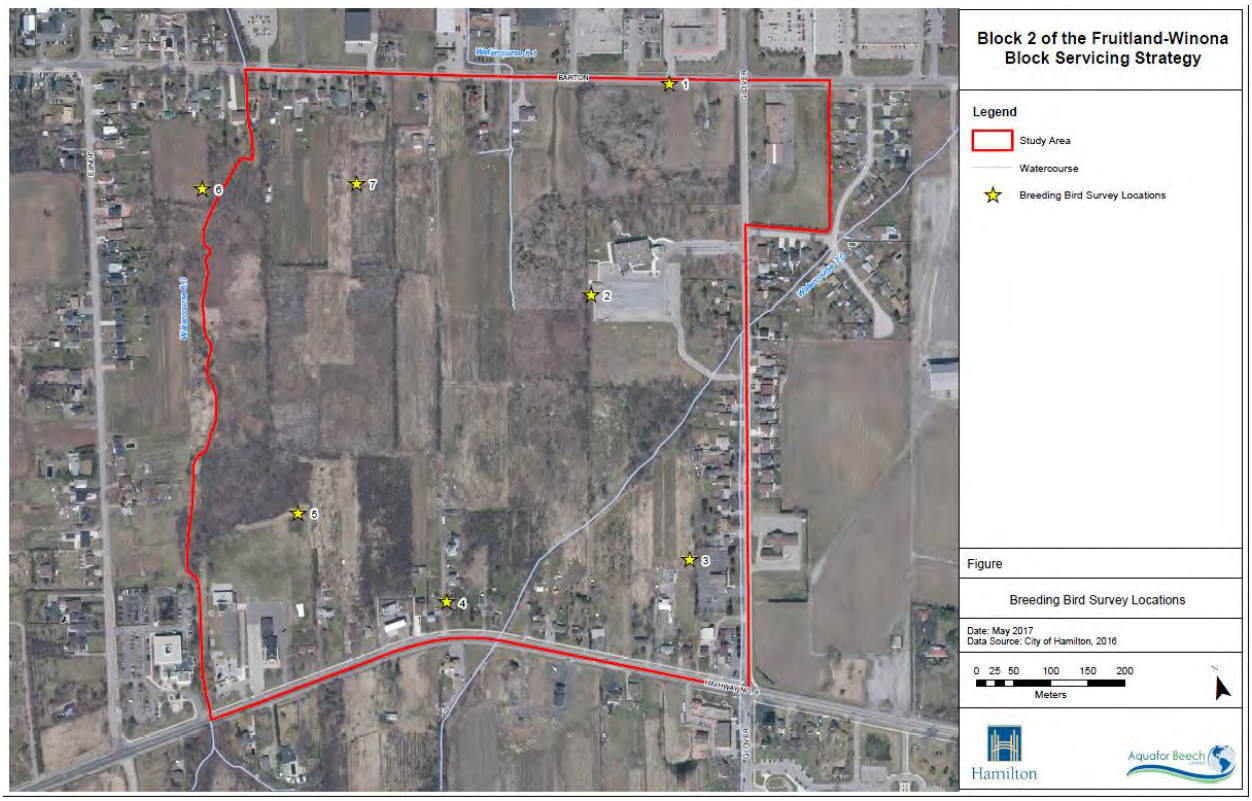


Figure 3-1: Breeding Bird Survey Station Locations

Amphibian Calling Surveys

Aquafor Beech Limited staff conducted amphibian calling surveys at seven (7) locations (illustrated in **Figure 3-2**) in accordance with the methods of the Marsh Monitoring Program (MMP) (Environment Canada, 2003). Land access permissions received at the time of surveys necessitated the need for roadside surveys near potential amphibian habitat. It is the opinion of Aquafor Beech Limited that the coverage is adequate.

Three calling surveys were conducted on still nights, typically during or immediately after rain. Environmental parameters recorded during each survey include date, time, air temperature, wind speed, degree of cloud cover, and level of precipitation; as summarized in **Table 3-2**.

At each call survey station, the intensity and number of calling amphibians were measured using call level and abundance codes, as outlined in the MMP. Call codes are as follows:

Level 1: Calls are not simultaneous and calling individuals can be counted;

Level 2: Some calls are simultaneous but individual calls are distinguishable;

Level 3: Calls are continuous and overlapping.

Table 3-2: Amphibian Survey Metadata

Station #	Date/Time	Air Temp (°C)	Beaufort Wind Scale	Cloud Cover (10ths)	Precipitation
1	April 16, 2015; 21:10	11	2	3	Damp
	May 21, 2015; 21:42	14	2-3	10	None
	June 29, 2015; 22:06	19	2-3	3	Damp
2 (ELC polygon 1)	April 16, 2015; 20:53	11	2	3	Damp
	May 21, 2015; 21:27	14	2-3	10	None
	June 29, 2015; 21:49	19	2-3	3	Damp
3	April 16, 2015; 20:48	11	2	3	Damp
	May 21, 2015; 21:21	14	2-3	10	None
	June 29, 2015; 21:44	19	2-3	3	Damp
4	April 16, 2015;	11	2	3	Damp

Station #	Date/Time	Air Temp (°C)	Beaufort Wind Scale	Cloud Cover (10ths)	Precipitation
	20:43				
	May 21, 2015; 21:18	14	2-3	10	None
	June 29, 2015; 21:39	19	2-3	3	Damp
5 (ELC polygon 8)	April 16, 2015; 20:38	11	2	3	Damp
	May 21, 2015; 21:14	14	2-3	10	None
	June 29, 2015; 21:35	19	2-3	3	Damp
6	April 16, 2015; 21:05	11	2	3	Damp
	May 21, 2015; 21:37	14	2-3	10	None
	June 29, 2015; 22:00	19	2-3	3	Damp
7 (ELC polygon 2)	April 16, 2015; 20:57	11	2	3	Damp
	May 21, 2015; 21:32	14	2-3	10	None
	June 29, 2015; 21:55	19	2-3	3	Damp

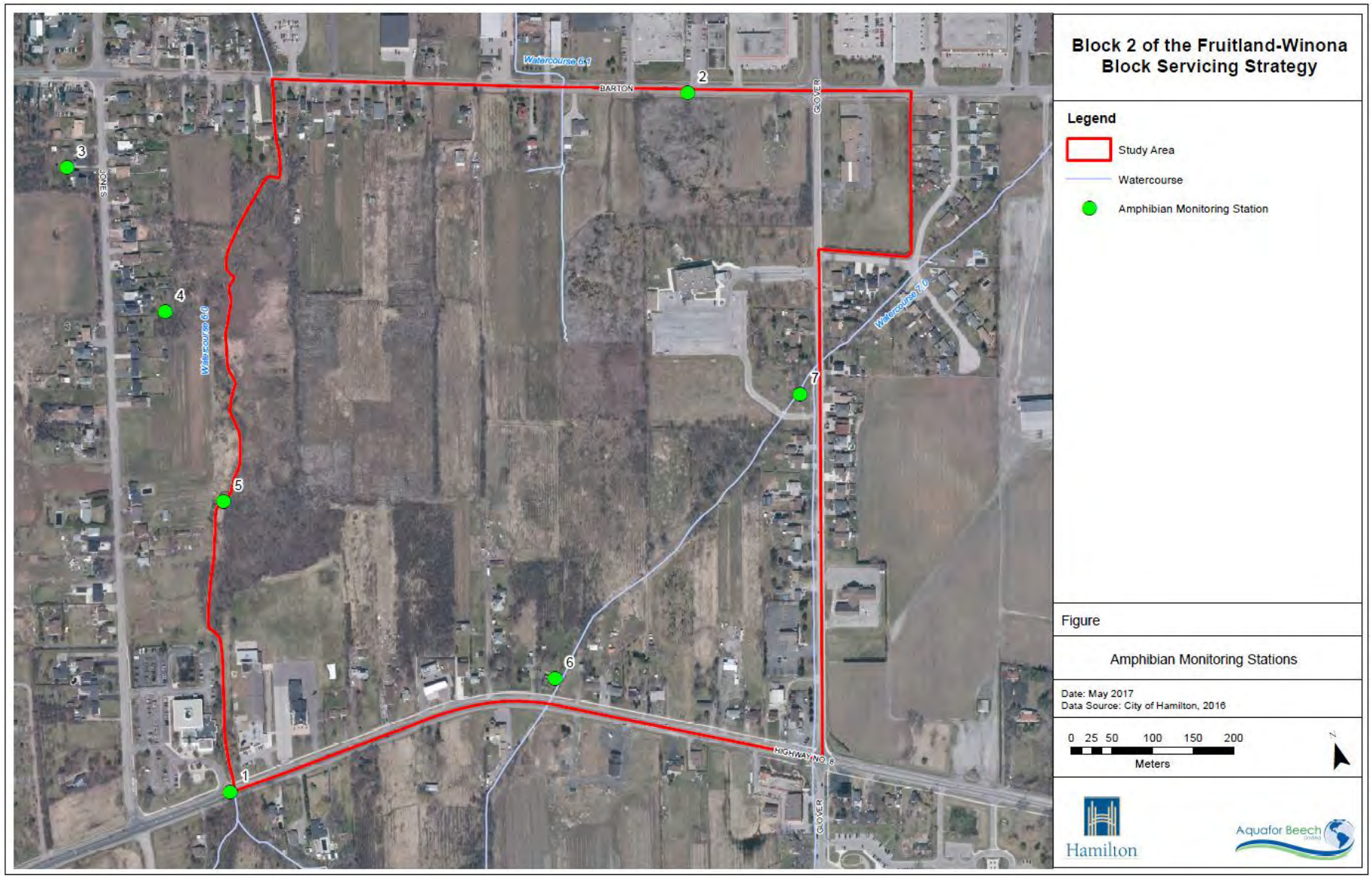


Figure 3-2: Amphibian Calling Survey Station Locations

4 Field Inventory Results: Terrestrial Ecology

The following subsections detail the results of biophysical surveys conducted within the Block 2 study area. Aquatic habitat is discussed in **Section 5**.

4.1 Vegetation Communities and Flora

Vegetation communities and flora within the Block 2 study area were assessed on September 30, 2015. A complete list of the inventoried vegetation communities and flora are shown and discussed under subsequent subheadings.

4.1.1 Vegetation Communities

The vegetation community assessments completed for the SCUBE report were primarily based upon roadside surveys and air photo interpretation. The work completed in support of the Block 2 Servicing Strategy has updated the assessments where applicable, including but not limited to areas that had been altered/cleared since the completion of the SCUBE report. Relevant SCUBE NHS mapping has been included in the report to allow for comparison with the Block 2 NHS.

As part of the work completed in 2015 in support of the Block 2 Servicing Strategy, a total of ten (10) ELC polygons were identified comprising eight (8) vegetation community types. Three (3) ELC polygons represent complex communities (i.e. pattern of two (2) or more ecosites or vegetation types forming a mosaic that cannot be mapped at the level of resolution being employed). Table 4-1 lists and describes the ELC polygons identified within the study area. Vegetation Communities are illustrated in Figure 4-1. Field sheets and representative photos are located in **Appendix A**. None of the vegetation communities within the study area are provincially or globally significant. Overall, vegetation communities within Block 2 are culturally influenced, exhibiting a high abundance of invasive exotic species and anthropogenic disturbances, are mostly low-lying communities (e.g. meadows and thickets) and have undulating wetter and drier portions due to previous agricultural management regimes (i.e. cultivated rows and ditches) and topography.

As previously mentioned, vegetation communities that were assessed as part of the field work completed in 2010 in support of the SCUBE report (Aquafor Beech Ltd., 2014) were reassessed as permitted by land access permissions. Where land access was not permitted, the previous classifications were confirmed through visual surveys from adjacent properties to which access was granted, or roadsides. Extant vegetation communities identified in the SCUBE report that are located on lands where access was not permitted include:

- FOD7-2, located at the downstream end of Watercourse 6.0;
- DECW, located approximately 60 m east of the terminus of McDonald Lane
- SWDM2-2, located at the downstream end of Watercourse 7.0.

Of the above listed vegetation communities, the community classifications of all but one has been confirmed as accurate. Based on roadside surveys, the vegetation community previously assessed as DECW appears to be a cultural thicket (CUT) bordering rear-yard trees on the west side. Air photo interpretation corroborates visual evidence that the community is a cultural thicket. Accordingly, the community designation has been changed from that which is shown in the SCUBE report.

Lands shown in yellow hatching in **Figure 4-1** were not subject to field assessments conducted as part of this study because: a) land access was denied; and, b) recent and/or active vegetation removals at the time of survey precluded an assessment. While these lands were assessed in support of the SCUBE report, the vegetation community designations are likely no longer relevant as extensive site alteration/clearing occurred in 2014 and/or 2015. Other properties not accessed due to lack of land access permissions were characterized using a combination of background information, air photo interpretation, and observations made from adjacent lands (see land access map, **Figure 14-1**).

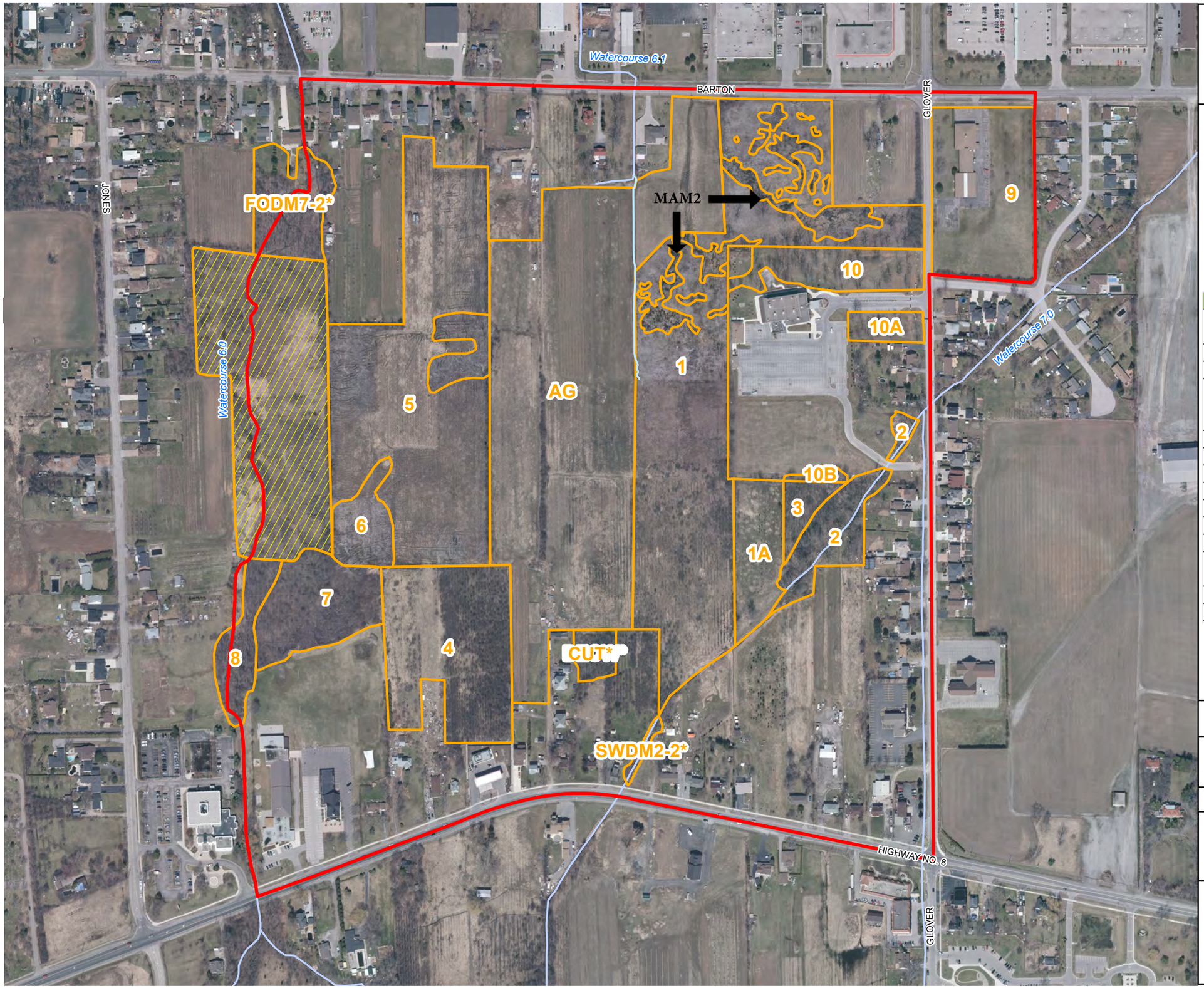
Table 4-1: Vegetation Communities identified within Block 2 Study Area

ELC Polygon	Vegetation Community		Ranking		Vegetation Community Description
	Code	Name	Global	Provincial	
1 & 1A	MAM2 [CUM1] (1A: CUT1)	Mineral Meadow Marsh [Complex: Mineral Cultural Meadow] (Inclusion 1A: Mineral Cultural Thicket)	-	-	At the time of survey, this vegetation community complex is identified as a mineral meadow marsh and mineral cultural meadow complex community as the tableland allows the gradual transition between the wet marshes and drier meadows**.** Vegetation community surveys conducted in 2010 for the Stoney Creek Urban Boundary Expansion (SCUBE) shows a Fresh – Moist Shagbark Hickory Deciduous Forest (referred to in the SCUBE report as Woodland 6) occupying the majority of ELC polygon 1. Since the completion of the field surveys completed for the SCUBE report, the forest was removed. As permission to access the property was not given, the survey of this community was conducted from adjacent lands and through air photo interpretation. The wet meadow is scattered throughout the community in low-lying areas, with the meadow in the higher, drier portions of the ELC polygon. There are a few scattered (<10% canopy cover) Shagbark Hickory (*Carya ovata*), White Oak (*Quercus alba*), White Pine (*Pinus strobus*), Red Oak (*Q. rubra*), and Bitternut hickory (*Carya cordiformis*) left in the canopy layer of the community. The sub-canopy has occasional occurrences of White Elm (*Ulmus americana*) and two willow species. The understory layer is abundant with Wild Carrot (*Daucus carota*) and Panicled Aster (*Symphyotrichum lanceolatum var. lanceolatum*), with occasional occurrences of Devil's Beggar-ticks (*Bidens frondosa*), Common Reed (*Phragmites australis*), and Blue Vervain (*Verbena hastata*). The ground layer is dominated by Canada Goldenrod (*Solidago canadensis*), with Canada Thistle (*Cirsium arvense*), Panicled Aster (*Symphyotrichum lanceolatum)*, Jewelweed (*Impatiens capensis*), and sedges (*Carex* spp.) are abundant in wet areas, with cattail (*Typha angustifolia*) is found occasionally.
2	SWD4-1	Willow Mineral Deciduous Swamp	-	-	This swamp lies along Watercourse 7.0 and acts as a riparian buffer to the watercourse. It is a mid-aged willow dominated swamp, with an abundance of invasive exotic species including Norway Maple (*Acer platanoides*), Black Locust (*Robinia pseudo-acacia*), and European Buckthorn (*Rhamnus cathartica*). Hybrid White Willow (*Salix x rubens*) is dominant in the canopy over Norway Maple. The subcanopy is abundant with Hybrid White Willow, Manitoba Maple (*A. negundo*), and Norway Maple. Black Ash (*Fraxinus nigra*) and Green Ash (*F. pennsylvanica*) have occasional occurrences. European Buckthorn is dominant in the understory over Long-spurred Hawthorn (*Crataegus macracantha*), Red-osier dogwood (*Cornus stolonifera*), and Wild Black Current (*Ribes americanum*). The ground layer is abundant with European Buckthorn, Panicled Aster, Canada Goldenrod, and White Avens (*Geum canadense*). The soil is silty loam, with mottles at 11 cm below the soil surface indicating intermittent soil saturation. Disturbances to this community include invasive species, light extent of tree mortality, localized dumping, light deer browsing, and noise pollution.
3	FOD7-2 [CUT1]	Fresh – Moist Ash Lowland Deciduous Forest [Complex: Mineral Cultural Thicket]	-	-	Directly adjacent to ELC polygon 2 is this lowland ash forest and cultural thicket. Green Ash characterizes the forest, with associate species of Trembling Aspen (*Populus tremuloides*), Red Oak, Shagbark Hickory, White Oak, and Swamp White Oak (*Q. bicolor*). European Buckthorn comprises the cultural thicket, and is dominant in the sub-canopy of this vegetation community. The cultural thicket also includes Choke Cherry (*Prunus virginiana*), Tatarian Honeysuckle (*Lonicera tatarica*), Long-spurred Hawthorn, Grey Dogwood (*C. foemina ssp. racemosa*), and Swamp Dewberry (*Rubus hispidus*). The ground layer is composed of Garlic Mustard (*Alliaria petiolata*), One-sided Aster (*S. lateriflorum var. lateriflorum*), Canada Goldenrod, and Bebb's Sedge (*C. bebbii*). The soil type is silty clay, with mottles present at 18 cm below the soil surface.

ELC Polygon	Vegetation Community		Ranking		Vegetation Community Description
	Code	Name	Global	Provincial	
4	CUT1	Mineral Cultural Thicket	-	-	This cultural thicket lies in the south west side of the study area, behind rural residential properties and adjacent to institutional properties. European Buckthorn characterizes the vegetation community as it is dominant in the sub-canopy, however Common Apple (*Malus pumila*) are abundant, indicating the historic land use as an orchard. Using aerial photo interpretation, one may see evidence of cultivation as indicated by linear striations over the thicket. Green Ash and White Elm are scattered throughout the community and compose the canopy layer. Grey Dogwood (*C. racemosa*), Black Raspberry (*Rubus alleghaniensis*), and Multiflora Rose (*Rosa multiflora*) are abundant in the understory layer. Smooth Brome (Bromus inermis) is dominant in the ground layer, with New England Aster (*S. novae-angliae*), Canada Goldenrod, Reed-canary Grass (*Phalaris arundinacea var. arundinacea*), and Kentucky Blue Grass (*Poa pratensis ssp. pratensis*) abundant. Soil sampling was not feasible as the soil was too tough to auger beyond two auger heads.
5	CUM1-1 [MAM2]	Dry – Moist Old Field Meadow [Complex: Mineral Meadow Marsh]	-	-	At the time of survey, this vegetation community is described as a complex of a fallow old field meadow and mineral meadow marsh. Air photo interpretation and review of vegetation community surveys conducted in 2010 for the SCUBE study shows two woodlands within ELC polygon 5, around the middle of the community. Evidence of tree removal (i.e. stumps and brush piles) was observed during field surveys. Some trees that were cut are regenerating. Wetter portions of this vegetation community are located where the crescent shaped woodlot used to be, in the south end of the ELC polygon, and in east-west running ditches (depressions). The few scattered trees in the canopy layer of the meadow include Green Ash, Swamp White Oak, and White Ash (*F. americana*). The sub-canopy and understory is dominated by European Buckthorn. Gray Dogwood, Common Apple, and Multiflora Rose are abundant in the understory. The ground layer has an abundance of wildflowers, grasses, and sedges, including Blue Vervain, New England Aster, Smooth Brome, Devil's Beggar-ticks, and Canada Goldenrod.
6	MAM2	Mineral Meadow Marsh	-	-	ELC polygon 6 was previously a wooded community. Evidence of tree removal (i.e. stumps and brush piles) was observed during field surveys. At the time of survey, this community was described as a mineral meadow marsh. Green ash is regenerating from stumps, and is dominant in the canopy and sub-canopy layers over Black Ash and White Elm. The understory is abundant with Green Ash and Gray Dogwood, with Riverbank Grape (*Vitis riparia*) and White Elm occasional. Panicled Aster is dominant in the ground layer over New England Aster, Path Rush (*Juncus tenuis*), White Avens (*Geum canadense*), Reed-canary Grass, and Grass-leaved Goldenrod (*Euthamia graminifolia*) which are all abundant. Again, a complete soil sample was not feasible as the soil was too difficult to auger through. Only 35 cm were sampled, and described as silty clay. Mottles were present at 10 cm below the soil surface.
7	CUW1	Mineral Cultural Woodland	-	-	Scattered tree species in the canopy layer include Green Ash, White Ash, Shagbark Hickory, and Common Apple; and are most abundant on the western half of the vegetation community. The sub-canopy layer is dominated by European buckthorn. The understory layer is abundant with Gray Dogwood, Poison Ivy (*Toxicodendron radicans* var. *radicans*), Riverbank Grape, and Black Raspberry. The ground layer is abundant with Smooth Brome, Early Goldenrod (*S. juncea*), Panicled Aster, and Reed-canary Grass.
8	SWD2-2	Green Ash Mineral Deciduous Swamp	G?	S5	Bordering the west side of ELC polygon 7, the ash swamp is situated along Watercourse 6.0. Green Ash is dominant, abundant and occasional in the canopy, sub-canopy, and understory layers, respectively. European Buckthorn is dominant in the sub-canopy and ground layers, and abundant in the understory layer. Panicled Aster is dominant in the ground layer, with abundant occurrences of Garlic Mustard, Woodland Strawberry (*Fragaria vesca* ssp. *americana*), Jewelweed (*Impatiens capensis*), and Reed-canary Grass.
9	CUM1	Mineral Cultural Meadow	-	-	This vegetation community lies on the south-east corner of Glover Road and Barton Street. At the time of survey it is described as a cultural meadow, having become a fallow field after the church was taken down. Asphalt is still on site, turned up and in piles. The vegetation community is dominated by Canada Goldenrod and Kentucky Blue Grass. Associate species include Panicled Aster, New England Aster, Chicory (*Cichorium intybus*), Bird's-foot Trefoil (*Lotus corniculatus*), Wild Carrot (*Daucus carota*), and Smooth Brome.

ELC Polygon	Vegetation Community		Ranking		Vegetation Community Description
	Code	Name	Global	Provincial	
10, 10A, & 10B	CUW1	Mineral Cultural Woodland	-	-	The understory of this cultural woodland is maintained as manicured lawn. It is possible that the trees within this vegetation community reflect the forest composition of what was Woodland 6. White Oak, Bur Oak (*Q. macrocarpa*), Red Oak, Swamp White Oak (*Q. bicolor*), Pin Oak (*Q. palustris*), Schuett's Oak (*Quercus x schuettei*), Red Maple (*A. rubrum*), Shagbark Hickory, Basswood (*Tilia americana*), and Green Ash are in the canopy layer. Ironwood (*Ostrya virginiana*) is the only species in the sub-canopy. There are no species in the understory. Kentucky Blue Grass is dominant in the ground layer. Associate species in the ground layer include Dandelion (*Taraxacum officinale*), Bird's-foot Trefoil, Chicory, and Wild Carrot.
n/a	SWMD2-2	Green Ash Mineral Deciduous Swamp	-	-	The 2009 Natural Heritage Assessment Report completed by Dillon Consulting Ltd. describes this vegetation community as follows: "This natural wetland system's canopy is dominated by red ash with occasional presence of bur oak, white willow and Manitoba maple. The understory contains buckthorn, red ash and grey dogwood. The ground layer includes buckthorn, spotted jewelweed and common strawberry."
n/a	CUT	Cultural Thicket	-	-	The 2009 Natural Heritage Assessment Report completed by Dillon Consulting Ltd. describes this vegetation community as follows: "This small woodlot consists of common buckthorn, red ash, domestic apple, Norway maple, hawthorn and grey dogwood", ascribing a community classification of DECW. Roadside filed observations and air photo interpretation completed as part of the Block 2 study resulted in the reclassification of this vegetation community to a cultural thicket.
n/a	FODM7-2	Green Ash Hardwood Lowland Deciduous Forest	-	-	Identified during work completed in support of the SCUBE study (Dillon, 2009). The 2009 Natural Heritage Assessment Report completed by Dillon Consulting Ltd. describes this vegetation community as follows: "This mid-aged community's canopy and sub-canopy is dominated by red ash with rare occurrences of shagbark hickory, red oak and maple. Understory consists of bur oak, buckthorn and red ash. Jack'n pulpit [sic], garlic mustard, enchanter's nightshade and spotted jewelweed are all present in groundcover."

Block 2 of the Fruitland-Winona Block Servicing Strategy



Legend

- Study Area
- Watercourse
- Vegetation Communities
- Vegetation Community Not Assessed Due to Recent/Active Removals

Polygon #	ELC Code	Community Type
1	MAM2 & CUM1	Complex: Mineral Meadow Marsh & Mineral Cultural Meadow
1A	CUT1	Mineral Cultural Thicket
2	SWD4-1	Willow Mineral Deciduous Swamp Type
3	FOD7-1 (CUT1)	Complex: Fresh-Moist White Elm Lowland Deciduous Forest & Mineral Cultural Thicket
4	CUT1	Mineral Cultural Thicket
5	CUM1-1	Dry-moist old field meadow
6	MAM2	Mineral Meadow Marsh
7	CUT1	Mineral Cultural Thicket
8	SWD2-2	Green Ash Mineral Deciduous Swamp
9	CUM1	Mineral Cultural Meadow
10	CUW1	Mineral Cultural Woodland
*	FODM7-2	Fresh – Moist Green Ash - Hardwood Lowland Deciduous Forest Type
*	CUT	Cultural Thicket
*	SWDM2-2	Green Ash Mineral Deciduous Swamp

* These areas were assessed as part of SCUBE and therefore not visited for this project. See Section 4.1.1 of the EIS for further details.

Figure 4-1: Vegetation Communities

Date: July 2018
Data Source: City of Hamilton, 2016

Note: Refer to Figure 14-1 for land access permissions

0 25 50 100 150 200
Meters

N

Hamilton

Aquafor Beech Limited

4.1.2 Flora

A botanical inventory was conducted in concert with the vegetation community classification surveys. A total of 137 vascular plants were identified to the species level, with an additional 10 species identified to genus.

Of the species identified to the species level, 90 (67%) are native to Ontario; the other 46 (34%) are introduced species. As detailed below, two (2) species of conservation concern were recorded during vegetation surveys and a subsequent site visit on June 9th 2016. Butternut, an Endangered species, was not recorded within or adjacent to the study area. Refer to **Appendix B** for a complete annotated list of vascular plants identified during surveys.

Significant Findings

Pin oak (*Quercus palustris*) was identified in the Mineral Cultural Woodland (ELC polygon 10), along with other Carolinian species. This species has not been recorded in the City of Hamilton previously, and its likely naturally occurring state; it is the opinion of Aquafor Beech Limited and the Hamilton Conservation Authority that this species is rare within Hamilton.

During a site visit with the City of Hamilton and the Hamilton Conservation Authority on June 9th 2016, a provincially rare sedge was recorded within ELC polygon 1. Fuzzy-wuzzy sedge (*Carex hirsutella*, S3) was located on the border of the vegetation community during a site visit on an adjacent property. This species was also recorded by Colville Consulting Inc. during investigations in support of the *Linkage Assessment of 860 and 884 Barton Street, Stoney Creek* report (2012). Per the MNRF's Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E, confirmation of the presence of a provincially rare species means that the species' habitat qualifies as Confirmed Significant Wildlife Habitat. In addition, given that this species has not been recorded in the City of Hamilton previously, and its likely naturally occurring state; it is the opinion of Aquafor Beech Limited and the Hamilton Conservation Authority that this species is rare within Hamilton.

4.2 Wildlife

Wildlife within the study area was characterized using specific survey protocols for target species (i.e. breeding birds and anurans), incidental observations recorded during field surveys in 2015, as well as a review of online resources and solicitation from the MNRF. The following subsections detail the wildlife observed within the study area.

4.2.1 Breeding Birds

A comprehensive bird species list, including field observations from Thompson Environmental Planning & Design Ltd. is included in **Table 4-2**. A total of 28 bird species are reported from the area according to our breeding bird field surveys. Of the species observed, 25 exhibited signs of breeding, such as males singing, agitated behavior or defending nests, and the presence of fledged young. Field sheets are contained within **Appendix C**.

The most abundant species observed during breeding bird surveys included tree swallow (*Tachycineta bicolor*) and Barn Swallow (*Hirundo rustica*).

Significant Findings

Only one species is considered to be Uncommon in the Hamilton Area. A single singing male least flycatcher (*Empidonax minimus*) was identified during the breeding bird field surveys. The location was central to the study area. This species favors moderately vegetated woodlands that provide shade for nest and open space for feeding. The habitat of uncommon species is not protected as part of the City of Hamilton's Natural Heritage System unless associated with protected natural heritage features.

Two species are Threatened as their populations are declining in northeastern North America. Both the bobolink (*Dolichonyx oryzivorus*) and barn swallow were recorded within the study area. Bobolink 'Probable' breeding evidence had singing males located between observation locations 2 and 6, within the disturbed field habitat. Bobolink requires large expanses of grassland or forb cover. Barn swallows 'Confirmed' were observed flying throughout the study area. Adults with fledged young were observed entering and exiting a building structure at 833 Barton Street. Barn swallows require man-made structures especially building for nesting. The habitat of Threatened species is protected under the City of Hamilton's Urban Official Plan and policy B.7.4.11.1 b) of the Fruitland-Winona Secondary Plan, and Threatened species and their habitat are protected under the Endangered Species Act. Further information on these and other species-at-risk is contained within **Section 6**.

Table 4-2: Breeding Bird Survey Results

Species		Status						MNR Area Sensitive	Habitat Use	NHIC Tracked	Highest Breeding Evidence	Breeding Status	Highest Abundance	Point Locations*
Common Name	Scientific Name	G-RANK	S-RANK	COSEWIC	COSSARO	SARA Status	Hamilton							
Canada Goose	*Branta hutchinsii*	G5	S5B						M/F	N	X	OBSERVED	2	3
Mallard	*Anas platyrhynchos*	G5	S5B						M/F	N	X	OBSERVED	2	6
Ring-billed Gull	*Larus delawarensis*	G5	S5B						M/F	N	X	OBSERVED	4	1,2,3,7
Northern Flicker	*Colaptes auratus*	G5	S5B						I/E	N	S/H	POSS	1	6
Willow Flycatcher	*Empidonax traillii*	G5	S5B						M/F	N	S/H	POSS	3	2
Least Flycatcher	*Empidonax minimus*	G5	S4B				Uncommon		M/F	N	S/H	POSS	1	3,5,6
Red-winged Blackbird	*Agelaius phoneniceus*	G5	S5B						E	N	S/H	POSS	8	1, 2, 3, 4, 5, 6, 7
Warbling Vireo	*Vireo gilvus*	G5	S5B						I/E	N	S/H	POSS	1	6
American Crow	*Corvus brachyrhnchos*	G5	S5B						E	N	S/H	POSS	5	1, 2, 3
Tree Swallow	*Tachycineta bicolor*	G5	S5B						M/F	N	NY	CONFIRMED	21	5,6
Barn Swallow	*Hirundo rustica*	G5	S4B	THR	THR				E	Y	NY	CONFIRMED	12	1,4,5,6
House Wren	*Troglodytes aedon*	G5	S5B						I/E	N	S/H	POSS	2	2,3
American Robin	*Turdus migratorius*	G5	S5B						E	N	S/H	POSS	7	1, 2, 3, 4, 5,6, 7
Gray Catbird	*Dumetella carolinensis*	G5	S5B						E	N	S/H	POSS	2	2,5
European Starling	*Sturnus vulgaris*	G5	SE						E	N	S/H	POSS	4	1,2,3,4,6
Cedar Waxwing	*Bombycilla cedrorum*	G5	S5B						E	N	S/H	POSS	2	4,6
Yellow Warbler	*Dendroica petechia*	G5	S5B						E	N	S/H	POSS	4	2,3,4,5,6
Mourning Dove	*Zenaida macroura*	G5	S5B						E	N	S/H	POSS	3	3,4,5,6
Common Yellowthroat	*Geothlypis trichas*	G5	S5B						I/E	N	S/H	POSS	2	2,5,6
Chipping Sparrow	*Spizella passerina*	G5	S5B						E	N	S/H	POSS	3	1,2,3,4,6
Field Sparrow	*Spizella pusilla*	G5	S5B						E	N	S/H	POSS	2	3,5
Savannah Sparrow	*Passerculus sandwichensis*	G5	S5B						E	N	S/H	POSS	2	1,2,3
Song Sparrow	*Melospiza melodia*	G5	S5B						E	N	S/H	POSS	4	1,2,3,4,5,6, 7
Northern Cardinal	*Cardinalis cardinalis*	G5	S5B						I/E	N	S/H	POSS	4	1,2,3,4,5,6
Bobolink	*Dolichonyx oryzivorus*	G5	S4	THR	THR				E	N	S/H	POSS	1	2,6
Brown-headed Cowbird	*Molothurs ater*	G5	S5B						E	Y	S/H	POSS	1	6
American Goldfinch	*Spinus tristis*	G5	S5B						E	N	S/H	POSS	6	2,3,5,6
House Sparrow	*Passer domesticus*	G5	SE						E	N	NY	CONFIRMED	6	1,3

*Point Count Survey locations 5 and 7 correspond to ELC polygons 7 and 6, respectively.

4.2.2 Amphibians

As detailed in **Section 3**, Aquafor Beech Limited staff completed three (3) surveys at each of the seven (7) survey stations. The results of the surveys are detailed in **Table 4-3**. Two (2) species were detected during the surveys: the Carolinian population of the western chorus frog (*Pseudacris triseriata*) (S4), and gray treefrog (*Hyla versicolor*) (S5). Both species are considered common in Ontario and Hamilton. Field sheets are located in **Appendix D**.

Western chorus frogs were only heard during the first survey in April. Gray treefrog was only heard during the third and final survey in June. No anurans were heard during the second survey in May. The highest Call Code level recorded was 2.

Table 4-3: Amphibian Survey Results

Date	Station #	Species Detected*	Call Level Code	Count
April 16, 2015	1	Chorus Frog*	1	2
	2	Chorus Frog	2	3
	3	No Calls		
	4	Chorus Frog	1	2
	5	Chorus Frog	1	2
	6	No Calls		
	7	Chorus Frog	1	3
May 21, 2015	1	No calls at any stations.		
	2			
	3			
	4			
	5			
	6			
	7			
June 29, 2015	1	Gray Treefrog	2	7-8
	2	Gray Treefrog	2	3-4
	3	Gray Treefrog	1	1
	4	Gray Treefrog*	1	1
	5	Gray Treefrog*	1	2
	6	No Calls		
	7	Gray Treefrog	2	2-3

*Species recorded within wetlands outside of the 100 m survey station.

4.2.3 Incidental Wildlife Observations

Wildlife and/or traces of wildlife (e.g. mammals, butterflies, reptiles, and amphibians) observed incidentally were recorded during field surveys conducted in 2015. **Table 4-4** contains an annotated list of incidental wildlife observations.

Table 4-4: Incidental Wildlife Observations

Species		Status					ELC Polygon #									
Scientific Name	Common Name	COSEWIC	COSSARO	G-Rank	S-Rank	Hamilton	1	2	3	4	5	6	7	8	9	10
Birds																
Buteo jamaicensis	Red-Tail Hawk	NAR	NAR	G5	S5	Common	X			X						
Corvus brachyrhynchos	American Crow			G5	S5B	Common	X									
Cyanocitta cristata	Bluejay			G5	S5	Abundant		X	X							
Dumetella carolinensis	Gray Catbird			G5	S4B	Abundant		X								
Poecile atricapillus	Black-capped Chickadee			G5	S5	Abundant		X	X							
Sphyrapicus varius	Yellow-bellied Sapsucker			G5	S5B	**Rare**		X								
Turdus migratorius	American Robin			G5	S5B	Abundant		X	X							
Mammals																
Procyon lotor	Northern Raccoon			G5	S5	Common		X	X							
Microtus sp.	Vole species							X								
Sciurus carolinensis	Gray Squirrel			G5	S5	Common			X							X
Fish																
None observed																
Molluscs																
None observed																
Herpetofauna																
None observed																
Odonates and Lepidopterans																
Danaus plexippus	Monarch	END	SC	G4	S2N,S4B	Common	X				X					

Species observed incidentally are considered common in Hamilton and the province, with the exception of two (2) species, as detailed below.

Two (2) yellow-bellied sapsuckers (*Sphyrapicus varius*) were observed in ELC polygon 1 on September 30, 2015 during vegetation surveys. This observation was made outside of the period in which birds would be breeding, and as such is not considered significant. (Breeding) Yellow-bellied sapsucker is rare in Hamilton according to the Hamilton Natural Areas Inventory (Schwetz, 2014). As breeding evidence was not observed, the species observation is not considered significant.

Three (3) monarch butterfly (*Danaus plexippus*) adults were observed foraging in the wetlands in vegetation community 1 and 5. Monarch is listed as Endangered by COSEWIC and as Special Concern by COSSARO; further discussion is provided in

Section 6. All other species observed incidentally are considered common or abundant in Hamilton and the province.

5 Aquatic Habitat

Fish habitat characterization and recommendations for enhancement and restoration are based upon information contained within the SCUBE West Subwatershed Study Phase 1 and Phase 2 Final Report (Aquafor Beech Ltd., 2013) and the SCUBE Subwatershed Study Phase 3 Final Report (Aquafor Beech Ltd., 2014), and are illustrated below in **Figure 5-2**. Aquatic field work was not conducted as part of the Block 2 study. The three watercourses within the study area are described as follows:

Watercourse 6.0

Watercourse 6.0 is considered indirect/supporting fish habitat. Like the other watercourses within the study area, the planform has been altered and straightened.

Restoration or enhancement recommendations from the SCUBE report specific to the portion of this watercourse that is within the Block 2 study area include restoration of the downstream portion of the channel located between two residential properties. As show in **Figure 5-1**, ongoing erosion is impacting water quality and adjacent residential lands. Furthermore, due to the recent extensive vegetation removals which occurred on the lands surrounding this watercourse, it is recommended that riparian areas which were subject to removals be replanted with self-sustaining native woody and herbaceous vegetation.

Figure 5-1: Watercourse 6.0, downstream end (June 9 2016)

Watercourse 6.1

The southern "hockey stick-shaped" portion of Watercourse 6.1, as shown in the SCUBE West Subwatershed Study Phase 1 and Phase 2 Final Report (Aquafor Beech Ltd., 2013), is considered indirect/supporting fish habitat. The portion of the watercourse south of the aforementioned portion of Watercourse 6.1 was added to the watercourse mapping following a site visit by the Hamilton Conservation Authority on June 9th 2016. The Hamilton Conservation Authority has indicated that while Watercourse 6.1 "does contribute to fish habitat downstream it has limited function overall and would not be required to be retained as an open feature when these lands go forward for development. The drainage contribution of the existing feature to downstream reaches would have to be maintained through the stormwater management design."

Accordingly, there are no restoration or enhancement recommendations specific to the portion of this watercourse that is within the study area.

Please note that alterations to this and/or any other watercourse within the study area will need to follow the DFO review process.

Watercourse 7.0

Within the study area, Watercourse 7.0 is considered indirect/supporting fish habitat. Downstream of the CN rail track between Glover Road and the Queen Elizabeth Way, Watercourse 7.0 is considered direct fish habitat. The tributary to Watercourse 7.0 (partially hidden by the study area boundary shown in **Figure 5-2**), which runs along the west side of Glover Road, is regulated by the Hamilton Conservation Authority. Regarding potential re-development for the existing residential lots located along the west side of Glover Road to the north of Highway No. 8, an assessment of development constraints would be required should re-development be considered at a future planning stage.

In recognition of the straightened planform of this watercourse, restoration or enhancement recommendations specific to this watercourse consist of increasing the width of riparian area to allow for natural sinuous channel migration. Where possible, it is further recommended that the corridor be vegetated with wood and herbaceous native species to provide binding strength to the banks and increase aquatic habitat health.

Figure 5-2: Fish Habitat Classification (source: revised maps prepared in support of the SCUBE report)

6 Species-at-Risk and other Species of Conservation Concern

For the purpose of this study, SAR are defined as species listed as Endangered, Threatened, or of Special Concern by the Committee on the Status of Species at Risk in Ontario (COSSARO). Species of conservation concern are defined as species listed as Endangered, Threatened, or of Species Concern as listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC); species with Global Ranks of G1-G3; species with Sub- National/Provincial ranks of S1-S3; and species considered rare within the City of Hamilton (Schwetz, 2014).

Aquafor Beech Limited consulted a number of primary and secondary information sources to assess the presence of SAR and species of conservation concern within the study area. An aggregated list of SAR and other species of concern was compiled using the following data:

- NHIC data from the MNRF Make-a-Map query results;
- The MNRF's list of SAR known to occur within Hamilton;
- species provided by the SCUBE Phase 3 report (Aquafor Beech Ltd. 2014); and,
- species observed during field surveys.

Using this aggregated list of SAR and other species of conservation concern, Aquafor Beech Ltd. cross-referenced the habitat needs of each species with the habitat conditions present within the study area and adjacent lands. In total, **39** SAR and other

species of conservation concern have previously been recorded within or adjacent to the study area. A detailed assessment of species' potential to occur within the study area is contained in **Appendix E**. A summary of species known to occur or having the potential to occur within or adjacent to the study area is found below.

Recent correspondence with the MNRF indicates that there are no previous records of SAR within the study area. Correspondence with the MNRF is also contained within **Appendix E**.

Per policy B.7.4.11.1.b) of the Fruitland-Winona Secondary Plan, all development within the Secondary Plan shall comply with the Endangered Species Act.

Summary of SAR and Species of Conservation Concern Present Within the Study Area

Barn Swallow – Present
Status: Threatened (COSEWIC & COSSARO); S4B; Common

During breeding bird surveys, barn swallow was observed entering and exiting a large outbuilding (UTM 606805 E, 4785856 N) located behind a residential home on Barton Street. The breeding status of this species is confirmed for observations made at this location. Other observations of barn swallow consist of foraging birds.

Barn Swallow now mostly nest in human-made structures, although can still be found in caves, crevices, and ledges of rocky cliff faces. According to the COSEWIC status report for this species, "nests are most commonly located in and around open barns, garages, sheds, boat houses, bridges, road culverts, verandahs and wharfs, and are situated on such things as beams and posts, light fixtures, and ledges over windows and doors" (COSEWIC, 2011).

As a Threatened species, Barn Swallow and its habitat are protected under the Ontario Endangered Species Act (ESA) (2007) and the City of Hamilton's Urban Official Plan. The general habitat regulated under the ESA is categorized according to the habitats' tolerance to disturbance as follows:

1. Nest (least tolerant of disturbance)
2. The area within 5 m of the nest
3. The area within 5 m and 200 m of the nest (most tolerant of disturbance)

Activities in general habitat can continue as long as the function of these areas for the species is maintained and individuals of the species are not killed, harmed, or harassed. Alteration of habitat will require a permit under the ESA, in consultation with the MNRF.

Bobolink – Present
Status: Threatened (COSEWIC & COSSARO); S4B; Uncommon

A single male bobolink was observed on June 4th and June 18th 2015 calling within ELC polygon 1, west of Winona Vine Estates. Bobolink was recorded as a possible breeder.

Historically, tall-grass prairies were the natural habitat of bobolink in North America. This habitat has declined by 88-99% of its historic range due to conversion to cropland (COSEWIC, 2010). Bobolink has since adapted, now primarily nesting in croplands of hay and pasture, likely because tall-grass prairies and croplands have a similar structure. A shift in the type of cropland planted in recent decades (i.e. from hay and pasture to alfalfa and row crops) has resulted in a decline of bobolink across its modern range (COSEWIC, 2010).

Bobolink also occurs in abandoned fields dominated by tall grasses, remnants of uncultivated virgin prairie (tall-grass prairie), no-till cropland, and small-grain fields (COSEWIC, 2010). It does not generally occupy fields of row crops, such as corn, soybean. Habitat size is a critical component of bobolink habitat. According to COSEWIC, "reproductive success is lower in small habitat fragments. In addition, the Bobolink responds negatively to the presence of edges separating its habitat, and particularly forest edges" (COSEWIC, 2010).

As a Threatened species, bobolink and its habitat are protected under the ESA (2007) and the City of Hamilton's Urban Official Plan. The general habitat regulated under the ESA is categorized according to the habitats' tolerance to disturbance as follows:

1. Nest and the area within 10 m of the nest (least tolerant of disturbance)
2. The area between 10 m and 60 m of the nest or centre of approximated defended territory
3. The area of continuous suitable habitat between 60 m and 300 m of the nest or centre of approximated defended territory (most tolerant of disturbance)

Activities in general habitat can continue as long as the function of these areas for the species is maintained and individuals of the species are not killed, harmed, or harassed. Alteration of habitat will require a permit under the ESA, in consultation with the MNRF.

Monarch – Present
Status: Special Concern (COSSARO); Endangered (COSEWIC); S2N, S4B

Cultural meadows and other areas with wildflowers provide potentially suitable foraging habitat for monarch; during field studies, adult monarchs (inset photo) were observed in wetland habitats complexed in ELC polygons 1 and 5.

Monarch requires a variety of habitats including overwintering sites (in Mexico), breeding areas, staging areas and nectaring areas. Breeding areas are confined to meadows with species in the Asclepias genus, and commonly include common milkweed (*Asclepias syriaca*) and swamp milkweed (*A. incarnata*). Staging areas are generally found on the north shores of the Great Lakes and along other large barriers to migration, where monarchs roost and feed to gain energy. Foraging areas include meadows dominated by a mix of forb species (asters, goldenrods, etc.) providing food throughout the summer.

As a Special Concern species, habitat protection under the ESA does not extend to monarch. Migratory butterfly stopover areas that meet criteria as Significant Wildlife Habitat are protected, however no such sites exist in the study area. As a Special Concern species, monarch breeding and foraging habitat may also be protected as Significant Wildlife Habitat should it be significant in the planning area. Monarch habitat in the Block 2 study area consists of foraging habitat, with wildflowers present in many of the cultural meadows, though the area is not likely providing a significant benefit to the species. Significant stands of milkweeds were not recorded within the study area, and it is unlikely that the Block 2 study area would function as a stopover. In sum, though monarch is present within the study area, there are no features of significance to the species.

Fuzzy-wuzzy Sedge – Present
Status: S3; Rare in Hamilton (No current status in NAI)

Fuzzy-wuzzy sedge was recorded at the edge of a wetland on the border of ELC polygon 1 during a site visit on an adjacent property on June 9th 2016. This species was also recorded in the same area by Colville Consulting Inc. during investigations in support of the *Linkage Assessment of 860 and 884 Barton Street, Stoney Creek* report (2012), which occurred before Woodland 6 was removed. While typically found in forests dominated by oak species, the persistence of this species on the landscape after the removal of the woodland indicates that does not require oak forest for survival. In Ontario, the species has been recorded in open woodlands and old fields (NHIC, 2016).

Per the MNRF's Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E, confirmation of the presence of a provincially rare species means that the species' habitat qualifies as Confirmed Significant Wildlife Habitat. Accordingly, this species habitat is protected under the City of Hamilton's Urban Official Plan.

Pin Oak – Present
Status: S4; Rare in Hamilton (No current status in NAI)

Northern Pin Oak was identified in ELC Polygon 10B during field surveys on September 30, 2015. As the tree within Block 2 is the only confirmed record of the species within the City of Hamilton, it is appropriate to consider this species rare. Species that are rare within the City of Hamilton are protected under the Official Plan.

Summary of SAR and Species of Conservation Concern Potentially Present Within the Study Area

Bats – Potentially Present
Status: END (COSEWIC & COSSARO); S3-S4; Uncertain
Potentially suitable maternity roosting habitat for myotis species and tri-colored bat is present within the study area. According to the Guelph District Office of the MNRF's *Survey Protocol for Species at Risk Bats within Treed Habitats* (MNRF, 2017), "any coniferous, deciduous, or mixed wooded ecosite, including treed swamps, that includes trees at least 10 cm diametre-at-breast height (dbh) should be considered suitable maternity roost habitat", to be confirmed through further study. In accordance with this definition, potentially suitable habitat within the study area includes ELC polygons 2, 3, 8, and 10 as well as wooded communities identified during the SCUBE study (Aquafor Beech Ltd., 2014), *i.e. FOD7-2 and SWDM2-2*. According to the MNRF's survey protocol, once potentially suitable vegetation communities have been identified bat maternity roost habitat is to be confirmed through identification of suitable maternity roost trees and, if applicable, acoustic surveys.

As Endangered species, bats and their habitat are protected under the ESA (2007) and the City of Hamilton's Urban Official Plan. As detailed in **Section 0** and **Section 9**, all treed communities within the study area (with the exception of ELC polygon 10A) are considered Significant Woodlands and/or Wetlands, and as such are protected under the City of Hamilton's Urban Official Plan.

Snapping Turtle – Potentially present
Status: Special Concern (COSEWIC & COSSARO); S3
Snapping turtles prefer slow-moving water such as in ponds, sloughs, shallow marshes, river edges, and slow streams with a soft mud bottom and dense aquatic vegetation; and are known to tolerate heavily urbanized waterbodies such as storm water management ponds, irrigation canals, and golf course ponds.

Suitable foraging habitat for snapping turtle is present within the study area along stream corridors, though the species was not observed incidentally during other surveys.

As a species of Special Concern and provincially rare species, snapping turtle habitat is protected under the City of Hamilton's Urban Official Plan.

Eastern Milksnake – Potentially present
Status: Special Concern (COSEWIC); S4

The Eastern milksnake is a harmless snake that occurs throughout southern Ontario. The species uses a wide range of habitats, including suburban parks and gardens, hayfields, pastures, old fields, meadows, and deciduous, coniferous and mixed forests. In rural areas, the species is found in and around sheds, barns, abandoned buildings and anthropogenic debris (Harding 1997, COSEWIC 2002). Little is known about the movement patterns of Eastern milksnakes in Canada, but their activity range is estimated to encompass approximately 20 ha and it is assumed that individuals migrate to and from hibernation sites (COSEWIC 2002).

Eastern milksnake was not observed within the study area, though due the species' secretive nature (COSEWIC, 2002) Aquafor Beech Limited staff cannot say with certainty that Eastern milksnake is not within the study area. Accordingly, additional surveys of suitable habitat at subsequent planning stages (e.g. EIS) to determine whether the species is extant are recommended. The presence of snake hibernacula in buildings was not confirmed during surveys, though it is noted that potentially suitable natural or semi-natural hibernacula were not observed within lands accessed as part of this study.

West Virginia White – Potentially present
Status: Special Concern (COSEWIC & COSSARO); S3; Uncommon

Potential habitat for this species and its larval food plant, two-leaved toothwort (*Cardamine diphylla*), is present within the Fresh – Moist Green Ash - Hardwood Lowland Deciduous Forest (FODM7-2) located within the study area at the downstream portion of Watercourse 6.0. As access to this forest was denied to the study team, the area was not subject to biophysical inventories and it is not known if two-leaved toothwort is present.

As a species of Special Concern and provincially rare species, West Virginia white is protected under the City of Hamilton's Urban Official Plan. The aforementioned forest community is considered a significant woodland (see **Section 9** for details), and as such is also protected under the City of Hamilton's Urban Official Plan.

7 Significant Wildlife Habitat

Significant Wildlife Habitat (SWH) is considered a Core Area of the City's natural heritage system and thus is protected under the City's Official Plan. The City of Hamilton's Urban OP define significant wildlife habitat as:

> wildlife habitat areas which are ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographical area or natural heritage system. Significant Wildlife Habitat will be identified based on criteria established by the Province (PPS, 2005).

Aquafor Beech Limited used the MNRF's *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E* (Jan 2015) as a guiding document in determining the presence of SWH in the study area. The corresponding detailed analysis and assessment are located in **Appendix F**. A summary of SWH within the study area is as follows:

Confirmed Significant Wildlife Habitat

Specialized Habitat for Wildlife: Special Concern and Rare Wildlife Species

As detailed in **Section 6,** monarch has been confirmed in wetland habitats present in ELC polygons 1 and 5. In addition, a provincially rare species, fuzzy-wuzzy sedge (S3), was recorded on a wetland edge on the border of ELC polygon 1. The wetland where the species was found has been included as part of the NHS and the limitations to development.

Through discussions with the study team, it was decided that the habitat of pin oak was of significance due to the tree being the only known record in Hamilton. The grove in which the tree was found has been included in the NHS and the limitations to development.

Potential Significant Wildlife Habitat

Seasonal Concentrations of Animals; Bat Maternity Colonies

As detailed in **Section 6** and **Appendix G**, there is potential for Bat Maternity Colonies in extant treed habitats within the study area; including ELC polygons 2, 3, 8, and 10; as well as the forest (FODM7-2), and treed swamp (SWDM2-2) communities in the north east and south, respectively. While use by bats is not known, treed habitats within the study area have been included as part of the NHS and limitations to development, and are thus protected.

Specialized Habitat for Wildlife: Special Concern and Rare Wildlife Species

There is potential for snapping turtle (Special Concern) to occur along stream corridors, though this species was not observed (incidentally) during field studies. Wetlands and stream corridors have been included in the NHS and limitations to development, and thus are protected.

Eastern milksnake, a highly secretive species, may also be present within natural and semi-natural lands throughout the study area. As previously stated, this species uses a wide range of habitats, including suburban parks and gardens, hayfields, pastures, old fields, meadows, and deciduous, coniferous and mixed forests. In rural areas, the species is found in and around sheds, barns, abandoned buildings and anthropogenic debris (Harding 1997, COSEWIC 2002). It is the opinion of Aquafor Beech Limited that the most potentially suitable foraging habitats within the study area (e.g. wetlands, forest edges) are included within the NHS, and are thus protected. What is not known is if potential hibernacula exist within the foundations of buildings, etc.; these structures are not included in the limitations to development or NHS. Potentially suitable natural hibernacula were not observed during field surveys. It is therefore recommended that surveys for Eastern milksnake occur on lands not accessed as part of this study.

Another species of Special Concern, West Virginia white, may be present in the forest community at the downstream end of Watercourse 6.0 (FODM7-2). This area was not accessed during field surveys. This forest is considered a Significant Woodland (see **Section 9** for details) and is thus protected under the City of Hamilton's Urban Official Plan.

8 Wetlands

As detailed in **Section 4.1.1**, multiple wetlands have been identified through the field work completed in support of this study and that of the SCUBE report (Aquafor Beech Ltd., 2014). Wetlands are protected under the City of Hamilton's Urban Official Plan (2013), and wetlands that directly contribute to the hydrologic function of a surface watercourse are regulated by the Hamilton Conservation Authority (Hamilton Conservation Authority, 2011).

Wetlands identified through field work completed as part of this study include ELC polygons 1 (in part), 2, 6, 8. Wetlands identified through work completed as part of the SCUBE report (Aquafor Beech Ltd., 2014) include a green ash mineral deciduous swamp (ELC code SWDM2-2) at the upstream section of the main branch of Watercourse 7.0. All of the above listed wetlands are associated with other natural heritage features such as thickets, woodlands, watercourses, and significant wildlife habitat; with the exception of the small wetland areas complexed with ELC polygon 5. Wetlands complexed within ELC polygon 5 consist of small depressions (< 1 m^2) in areas that had historically been tilled and a wet backwards C-shaped area adjacent to the hedgerows on the east side of the vegetation community that, until recently, was treed. Due to the low habitat value of these wetlands and the limited ecological function they would provide when further isolated from the NHS in a post-development scenario, they are not included in the NHS. All other wetlands are included in the NHS and the limitations to development.

9 Significant Woodlands

Significant Woodlands are protected under the City of Hamilton's Urban Official Plan (2013). According to the City of Hamilton's Urban Official Plan (2013), Significant Woodlands are defined as:

> …an area which is ecologically important in terms of:
> a) Features such as species composition, age of trees, stand history;
> b) Functionally important due to its contribution to the broader landscape because of its location, size, or due to the amount of forest cover in the planning area; and
> c) Economically important due to site quality, species composition or past management history. (PPS, 2005)
>
> The presence of European Buckthorn, Common Lilac, and Staghorn Sumac shall be irrelevant to the determination of whether a woodland is a significant woodland.

In the City of Hamilton, significant woodlands must meet two or more of the following six criteria (**Table 9-1**):

Table 9-1: Significant Woodland Criteria

Criterion	Description
Size	<table><tr><th>Forest Cover (by planning unit)</th><th>Minimum patch size for significance</th></tr><tr><td>< 5 %</td><td>1 ha</td></tr><tr><td>5-10 %</td><td>2 ha</td></tr><tr><td>11-15 %</td><td>4 ha</td></tr><tr><td>19-20 %</td><td>10 ha</td></tr><tr><td>21-30 %</td><td>15 ha</td></tr></table> Woodlands shall meet a minimum average width of 40 metres.
Interior Forest	Woodlands that contain interior forest habitat. Interior forest habitat is defined as 100 metres from edge.
Proximity/Connectivity	Woodlands that are located within 50 metres of a significant natural area (defined as *wetlands* 0.5 hectares or greater in size, *ESA*s, PSWs, and *Life Science ANSIs*).
Proximity to Water	Woodlands where any portion is within 30 metres of any hydrological feature, including all streams, headwater areas, *wetlands*, and *lakes*.
Age	Woodlands with 10 or more native trees/hectare greater than 100 years old.
Rare Species	Any woodland containing threatened, endangered, special concern, provincially or locally rare species.

Several significant reductions in the amount of tree cover in the study area have occurred since the completion of the SCUBE reports (Aquafor Beech Ltd., 2014; Aquafor Beech Ltd., 2013). To determine the presence of significant woodlands, extant treed communities within the study area were assessed against the six criteria listed above in **Table 9-1**. The results of this assessment are detailed below in **Table 9-2**. Significant Woodlands within the study area are designated as such due to their proximity/connectivity to significant natural areas and their proximity to hydrologic features. Criteria in **Table 9-2** marked as "n/a" denotes criteria where detailed field information is lacking due to land access limitations. Note that none of the treed habitats within the study area have been subject to surveys for species-at-risk bats, and as such it is not known if the Rare Species criterion is met. Significant woodlands and other woodlands are included in the NHS and limitations to development.

Table 9-2: Significant Woodland Assessment

ELC Polygon	Significant Woodland Criterion						Significant Woodland?
	Size	Interior Forest	Proximity/ Connectivity	Proximity to Water	Age	Rare Species	
#2 (SWD4-1)			✓	✓			Yes
#3 (FOD7-2)			✓	✓			Yes
#7 (CUW)			✓	✓			Yes
#8 (SWD2-2)			✓	✓			Yes
#s 10, 10A & 10B (CUW1)			ELC polygon 10B only	ELC polygons 10 & 10B only		ELC polygon 10B only	Yes, ELC polygon 10B only
FODM7-2				✓	n/a	n/a	No
SWDM2-2				✓	n/a	n/a	No

10 Linkages

As mentioned in **Section 2.2**, Linkages are natural areas within the landscape that constitute ecological connections between Core Areas. All natural heritage features within the study area are considered confirmed Core Natural Heritage features, with the exception of the following:

- ELC Polygon 1, in part (cultural meadow only), and 1A;
- ELC Polygon 4 (cultural thicket);
- ELC Polygon 5 (cultural meadow), including the small wetland inclusion (MAM2) within ELC Polygon 5;
- ELC polygon 9;
- ELC polygons 10 and 10A (10A's status as a Core Area is unconfirmed, see **Section 6**);
- The forest (FODM7-2) associated with the lower reaches of Watercourse 6.0;
- The cultural thicket (CUT) near McDonald Lane;
- Riparian areas associated with Watercourse 6.0; and,
- Riparian areas associated with Watercourse 7.0.

The above-listed natural heritage features were subject to a Linkage Assessment in accordance with City of Hamilton's Urban Official Plan Policy F.3.2.1.11. (2013), as detailed in **Table 10-1**, below. Linkages are considered a part of the City's Natural Heritage System.

Table 10-1: Linkage Assessment

Natural Heritage Feature	Vegetative, wildlife, and/or landscape features or functions						Discussion	Linkage?
	i) Natural areas and habitats/functions linked	ii) Linkage type	iii) Vegetation cover quality type	iv) Width (m)	v) Length (m)	vi) Continuity of vegetation		
ELC polygon 1 (CUM only)	Links wetland complex in the north with itself and also (potentially the southward extension of Watercourse 6.1) with wetland and woodland habitats, as well as Watercourse 7.0 to the south.	Cultural meadow	Med.; common native and non-native herbaceous species.	99.5 -276	45.8 - 560	Community type mostly continuous; punctuated & bisected by wetlands.	The wetland complex in the north of this vegetation community is habitat for chorus frog. The small distance between wetlands in the complex likely allow for both movement and foraging opportunities for this species and as such should be considered a Linkage. This linkage area is contained within the minimum Vegetation Protection Zone associated with the wetland. Given the open conditions on site, it is unlikely that amphibians would travel between the wetlands in the north of this vegetation community and natural heritage features in the south (i.e. ELC polygons 2 & 3 and Watercourse 7.0) as they would be subject to desiccation.	Yes; northern portion surrounding wetland complex.
ELC polygon 1A		Cultural thicket	Low; dominated by exotic species.	53.3	129.4	Continuous		
ELC polygon 4	Limited; does not connect Core Areas and is not providing significant ecologic function.	Cultural thicket	Low; dominated by exotic invasive species.	156.3	130 -192	Mostly continuous, some meadow interspersed.	This vegetation community is dominated by exotic invasive species, does not connect Core Areas, and does not perform any significant ecologic function.	No
ELC polygon 5	Somewhat limited due to recent tree removals on adjacent property to the west.	Cultural meadow with meadow marsh	Med.; common native and non-native herbaceous species.	112.2 - 176.2	127 - 435	Continuous	This vegetation community is dominated by common native and non-native herbaceous species. Recent extensive vegetation removals to the west have likely negatively impacted the ecologic potential of this community. Given the low ecologic function of the small wetland inclusion within this community currently, it is highly unlikely that the wetland inclusion and the portion of ELC polygon 5 between said wetland inclusion area and ELC polygon 6 would function in a post-development scenario.	No
ELC polygon 9	Very limited; vegetation unit is isolated from natural areas.	Cultural meadow	Low; lawn reverting to meadow.	103	181.4	Continuous	This vegetation community is surrounded by roads and existing development. It consists of an asphalt parking lot and lawn that is reverting to meadow.	No
ELC polygon 10	Limited; land is fenced and understory is maintained by regular mowing regime.	Cultural woodland	Med.; high quality native trees with no understory and mown lawn.	185.1	47.4	Continuous	This vegetation community is located between development and natural areas. However, the property line between this woodland and the adjacent natural area is fenced and the understory of the community is maintained through mowing. As such, the linkage potential of this community is likely limited to the potential provision of habitat for avifauna.	Yes

ELC polygon 10A	Limited; vegetation unit is isolated and understory is maintained by regular mowing regime.	Cultural woodland	Med.; high quality native trees with no understory and mown lawn.	91.5	33.5	Continuous	This vegetation community is surrounded by development and isolated from other natural heritage features.	No
FODM7-2	Contributes to fish habitat and water quality of Watercourse 6.0.	Forest	High; site access not granted in 2015, observations made in 2016 indicate high-quality forest habitat is present.	85.4	112.6	Continuous	Watercourse 6.0 is partially contained within this forest community. The forest likely provides valuable habitat for fish and other wildlife.	Yes
CUT	Very limited; vegetation unit is isolated.	Cultural thicket	Unknown; site access not granted.	39.4	38.2	Continuous	This thicket community is isolated from other natural heritage features. This community is known as DECW in the SCUBE studies; and was updated to CUT following air photo interpretation and roadside observations.	No
Riparian lands associated with Watercourse 6.0	Links wetlands and woodlands within the study area.	Watercourse/riparian	Med.; upper reaches treed, middle reaches open, lower reaches partially treed.	522.2	varies	Discontinuous vegetation; continuous floodplain and meanderbelt.	The main branch of this watercourse connects two Core Areas. It is unknown at the time of writing if the mid-reaches of this watercourse will be subject to restoration plantings as part of an agreement to compensate for recent tree and wetland removals in the area.	Yes
Riparian lands associated with Watercourse 7.0	Main branch links forests within the study area. Tributary consists of roadside ditch.	Watercourse/riparian	High; upper and lower reaches are mostly treed. Unknown for mid-reaches; full site access not granted; extensive tree removals evident.	912.2	varies	Discontinuous vegetation; continuous floodplain and meanderbelt.	The main branch of this watercourse connects two Core Areas. The tributary is a roadside ditch and does not connect Core Areas.	Yes, main branch only.

11 Natural Heritage System

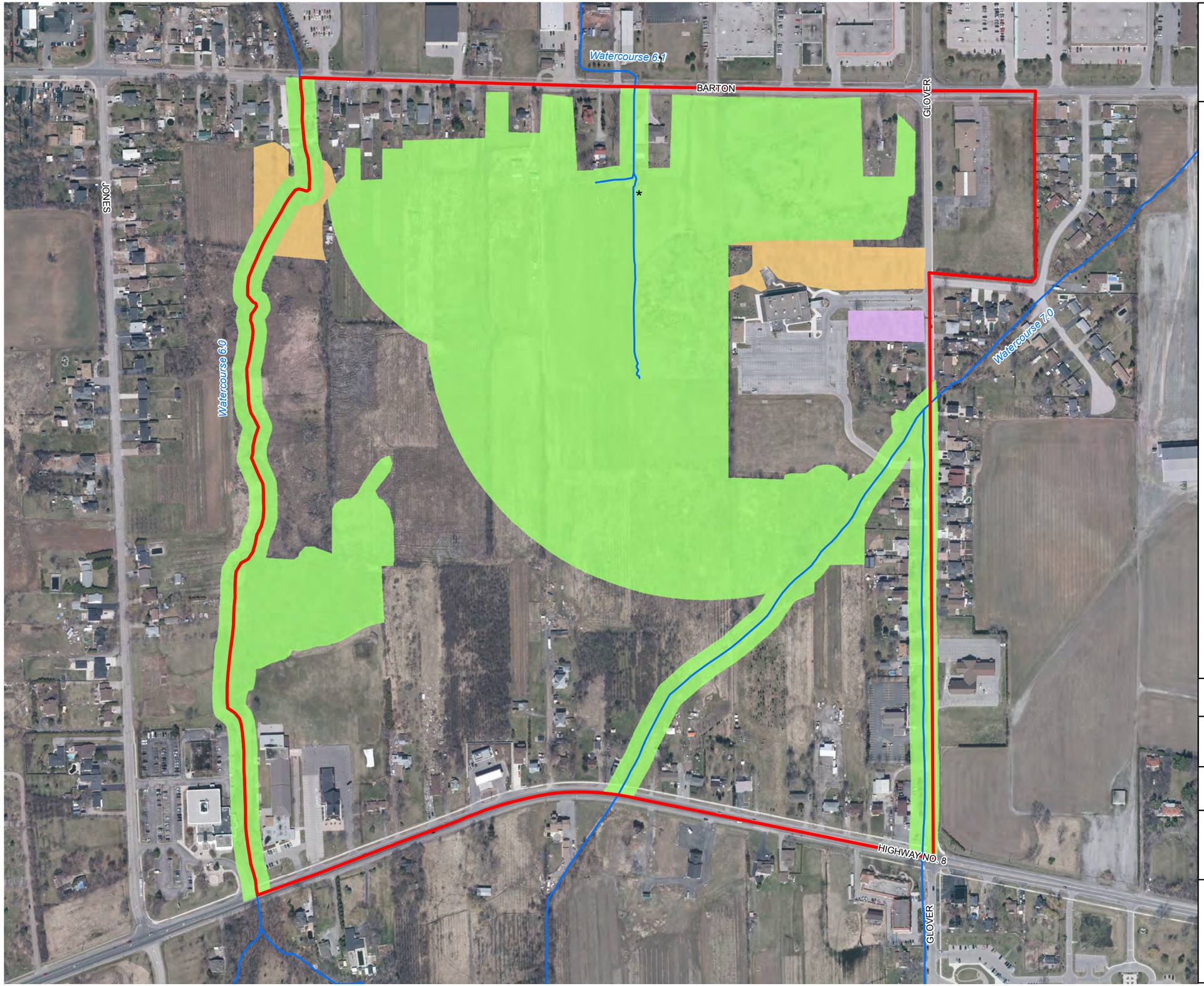
As detailed in **Section 2.2,** according to the Fruitland-Winona Secondary Plan, Core Areas (comprised of Key Natural Heritage Features, Key Hydrologic Features, and Local Natural Areas and their associated Vegetation Protection Zones (VPZs)) collectively with Linkages and Restoration Areas, comprise the Natural Heritage System (NHS). **Table 11-1** lists and describes the components of the Natural Heritage System (NHS) within the Block 2 study area. Core Areas and Linkages are illustrated in **Figure 11-1**.

As detailed in **Section 4.2.1** and **Section 6**, nesting and foraging habitat for both barn swallow and bobolink is present within the study area. It is expected that habitat for barn swallow will be compensated for within the study area in a natural area adjacent to open parkland and wetland; habitat for bobolink will be compensated for off-site (to be confirmed through consultation with the MNRF). Accordingly, habitats for these species are not shown as a constraint (**Figure 13-1**). Permitting under the Endangered Species Act is the responsibility of the landowner(s). **Consultation with the MNRF, including discussions regarding the acceptability of compensation, will be required.**

Table 11-1: Summary of Core Areas and Linkages within the Natural Heritage System

		Key Natural Heritage Features	Discussion
Natural Heritage System	Core Natural Areas	Fish Habitat	All watercourses within the study area provide contributing fish habitat.
		Wetlands	Wetlands within the study area consists of ELC polygons 1 (in part), 2, 5 (in part), 6, and 8. ELC polygons 1 (in part), 5 (in part), and 6 are composed of Mineral Meadow Marshes, while ELC polygons 2 and 8 are deciduous swamps. In addition, a green ash mineral deciduous swamp (SWDM2-2), located at the downstream end of Watercourse 7.0, was identified during the SCUBE study (Aquafor Beech Ltd., 2014) and based on air photo interpretation appears to be extant. As detailed in **Section 0**, all wetlands except for those complexed within ELC polygon 5 are included in the NHS.
		Significant Woodlands	As detailed in **Section 9**, Significant Woodlands within the study area include all treed communities *with the exception of* ELC polygons 10 and 10A, SWDM2-2, and FODM7-2.
		Significant Wildlife Habitat	Confirmed significant wildlife habitat within the study area includes Habitat for Species of Special Concern and Rare Species, consisting of wetlands complexed within ELC polygons 1 and 5, as well as woodland represented by ELC polygon 10B. Potential significant wildlife habitat consists of bat maternity roosts in treed habitats, and snapping turtle habitat within watercourses and stream corridors. Both of these habitats are protected under other natural heritage designations (i.e. significant woodlands, watercourses) and hazard lands (i.e. floodplain, meanderbelt/erosion hazard), with the exception of the treed habitat represented by ELC polygon 10A. As such, ELC polygon 10A is considered a candidate Core Area; it's status is to be confirmed through further study.
		Significant Habitat of Endangered, Threatened, and Special Concern Species	As detailed in **Section 6**, regulated habitat for bobolink and barn swallow is present within the study area. Alteration of regulated habitat will require a permit under the Endangered Species Act, in consultation with the MNRF. As detailed above, potentially suitable habitat for Endangered bats, consisting of treed habitats, are included in the NHS. In addition, potentially suitable habitat for species of special concern; i.e. snapping turtle and West Virginia white, consisting of stream corridors and FODM7-2, respectively; are included in the NHS.
		Key Hydrologic Features	**Discussion**
		Permanent and Intermittent Watercourses	Watercourses 6.0 and 7.0 are shown in Schedule B-8 of the City of Hamilton's Urban Official Plan (2013). Based upon observations made in the field and information contained within the SCUBE Phase 1 & 2 report, Watercourse 6.1 and Watercourse 7.0 are intermittent watercourses. Watercourse 6.0 also exhibits characteristics of an intermittent watercourse, with the exception of the lower reach that is located between residential properties fronting on Barton Street. This latter area is considered a permanent watercourse. Regarding potential re-development for the existing residential lots located along the west side of Glover Road to the north of Highway No. 8 adjacent to the tributary to Watercourse 7.0, an assessment of development constraints would be required should re-development be considered at a future planning stage.
		Wetlands	ELC polygons 1, 2, 5, 6, and 8 are wetlands, or are complex communities which include wetlands. ELC polygons 1 (in part), 5 (in part), and 6 represent Mineral Meadow Marshes, while ELC polygons 2 and 8 represent deciduous swamps. In addition, a green ash mineral deciduous swamp (SWDM2-2), located at the downstream end of Watercourse 7.0, was identified during the SCUBE study (Aquafor Beech Ltd., 2014). As detailed in **Section 0**, all wetlands except for that which is complexed within ELC polygon 5 are included in the NHS.
		Local Natural Areas	**Discussion**
		Unevaluated Wetlands	None of the wetlands within the study area were subject to evaluation under the Ontario Wetland Evaluation System (OWES). ELC polygons 1 (in part), 2, 5 (in part), 6, 8 and the green ash mineral deciduous swamp (SWDM2-2) associated with the downstream end of Watercourse 7.0 represent wetlands, or are complex communities composed of wetlands. As detailed in **Section 0**, all wetlands except for those complexed within ELC polygon 5 are included in the NHS.
	Linkages		**Discussion**
			As detailed in **Section 10**, Linkages within the study area consist of ELC Polygon 10 and the portion of cultural meadow in ELC Polygon 1 that surrounds the wetland complex in the northern portion of the vegetation polygon, the forest on the downstream end of Watercourse 6.0 (FODM7-2), and Watercourses 6.0 and 7.0.
	Restoration Areas		**Discussion**
			Per the Fruitland-Winona Secondary Plan, Restoration Areas are included in the NHS. See **Section 14.3** for details.

Block 2 of the Fruitland-Winona Block Servicing Strategy



Legend

- Study Area
- Watercourse

Natural Heritage System

- Core Area
- Linkage
- Core status to be confirmed through additional study

* Status of Watercourse 6.1 extension as a core area will be determined by HCA at a later date

Figure 11-1

Natural Heritage System
Core Areas and Linkages

Date: March 2018
Data Source: City of Hamilton, 2016

0 25 50 100 150 200
Meters

N

Hamilton

Aquafor Beech Limited

12 Assessment of Potential Impacts and Recommended Mitigation Measures

Post-development land use within Block 2 is expected to primarily consist of residential development and accessory land uses including institutional, arterial commercial (both represent pre-existing uses) and park lands; as well as associated servicing requirements (sewers, stormwater management, etc.). Potential impacts to the Natural Heritage System resulting from land use change and mitigation measures specific to each potential impact are discussed in **Table 12-1**.

Table 12-1: Potential Impacts and Associated Recommended Mitigation Measures

Potential Impact	Mitigation Measures
Potential impacts to nesting birds protected under the Migratory Bird Convention Act including minor habitat reduction, fragmentation and disturbance during important life stages. Disturbance to nesting birds (if proposed construction to occur within Generalized Nesting Period – April 1 to August 31) may also occur.	When possible, avoid construction and site preparation work during the generalized nesting period of March 31 to August 31. If site works must occur during the generalized nesting period, a Qualified Avian Ecologist must conduct an active nest survey immediately prior to site disturbances or alterations (e.g. tree removal). Establish temporary Nest Protection Zones for any nests at the edge of the woodland, which will remain in place until all fledged birds have left the vicinity or as advised by a qualified wildlife biologist. This will ensure that site alteration does not contravene the federal Migratory Convention Act (1994), which protects the nests of most breeding bird species in Ontario.
Potential for birds to collide with building windows.	It is recommended that building design be in accordance with the design guidelines in the City of Toronto's Bird Friendly Development Guidelines, a document which outlines designs which reduce the likelihood of bird collisions with buildings. The first 12 metres above-grade is where most collisions occur and thus is the most critical zone for the application of bird-friendly design guidelines (City of Toronto, 2007).
Encroachment (e.g., unauthorized access) and dumping within the NHS could potentially occur if residents and trail users have access to the natural areas on site.	Residual impacts are expected and can be minimized through provision of an environmental guide/brochure to advise residents of action and activities that can be taken to avoid impacts to adjacent natural features, including and not limited to cautioning about not putting garbage and other refuse into natural areas, keeping pets inside or on leashes, not emptying pools into watercourses, etc.. In addition, the use of educational signage (especially in association with trails and parks) may also further the messaging of the environmental guide/brochure. Fencing along the perimeter of
Wildlife experience an increased risk of predation due to domestic pets, especially cats.	

Potential Impact	Mitigation Measures
	developed lots will also discourage encroachments.
Without proper erosion and sediment controls, sediment entering the NHS will negatively impact vegetation, especially that of the ground layer, and sedimentation may also negatively affect fish populations.	Develop and implement an Erosion and Sediment Control Plan that minimizes risk of sediment entering woodlands, wetlands, and watercourses. Install and monitor silt and sediment control barriers, prior to and during all site preparation and construction works.
Artificial light at night can have negative effects on wildlife, in particular amphibians and reptiles in urban environments. The alteration of the natural variation in diurnal and nocturnal light intensities and spectral properties of lights has the potential to disrupt the physiology, behavior and ecology of amphibians (Buchanan et al. 2008). Research has also shown that artificial night lighting may enhance the invasive potential of some species (Perry et al. 2008).	Aquafor Beech Limited recommends using low mast lighting directed downward and/or shielded to minimize light projection into the natural area and up into the sky (often referred to as directional lighting systems, see schematic in **Figure 12-1**). The use of outdoor motion sensors could also be considered, but are considered of secondary importance compared to directional lighting.
The use of salt on roads, sidewalks, etc. has the potential to negatively impact water quality in the wetland and watercourse. Changes in water quantity and/or quality may affect downstream fish populations.	Reduced salt use and the use non-chloride de-icers will reduce the amount of salts entering wetlands and watercourses. It may also be useful for institutional, commercial, and multi-residential (e.g. townhomes) land uses to develop and implement a salt management plan which specifies when, where, and how much salt will be applied during winter months; as well as consideration of the use of salt alternatives. Consideration of snow storage should also be included in the management plan.
Decrease in overall land base for the NHS as a result of road crossings.	As compensation for lost NHS land base, it is recommended that opportunities for plantings in the neighbourhood park and in SWM blocks should be considered. It is also recommended that opportunities to reduce the amount of NHS displaced by roads be investigated at the site plan phase/detailed design.
Loss of hedgerows and tree losses due to road construction in NHS areas will result in an overall reduction of tree canopy coverage.	Where possible, opportunities to retain and incorporate extant native hedgerows and specimen trees into future development should be explored. Opportunities for tree planting, especially in parkland and SWM blocks, should be prioritized. All developments should be subject to a tree preservation plan.
Fragmentation of the NHS as a result of road crossings.	It is recommended that watercourse crossings incorporate terrestrial benches to allow for wildlife

Potential Impact	Mitigation Measures
	passage. It is further recommended that tree planting occur along the eastern edges of the neighbourhood park as a means of facilitating a connection between NHS areas in the north with those in the south.
Reduction of habitats available to SAR birds (barn swallow and bobolink).	In order to proceed with development in regulated habitat for barn swallow and bobolink, landowners will likely have to obtain a permit under the Endangered Species Act from the MNRF. It is expected that habitat for barn swallow will be compensated for within the Block 2 lands, while habitat for bobolink will be compensated for off-site.

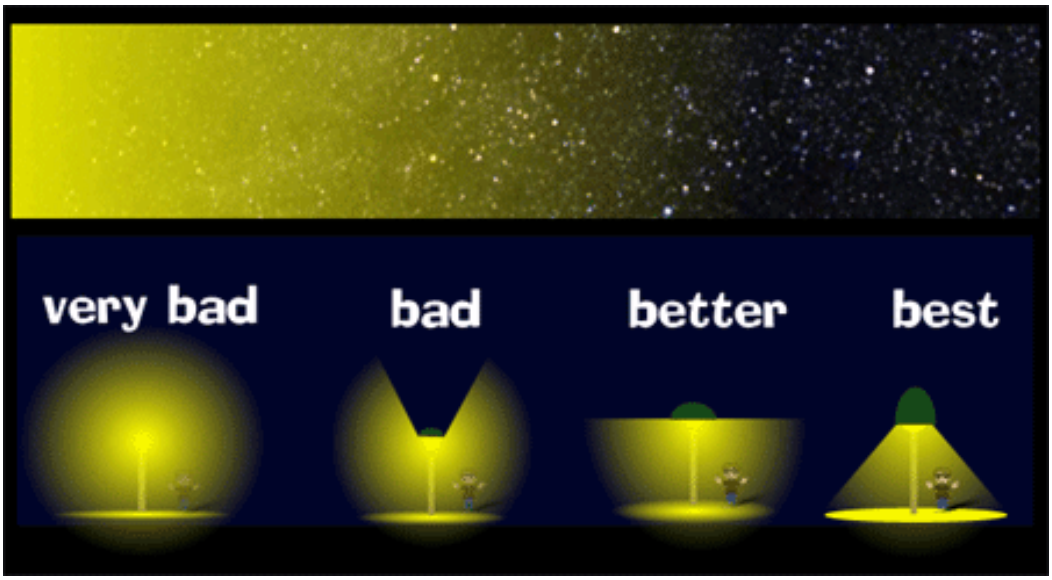


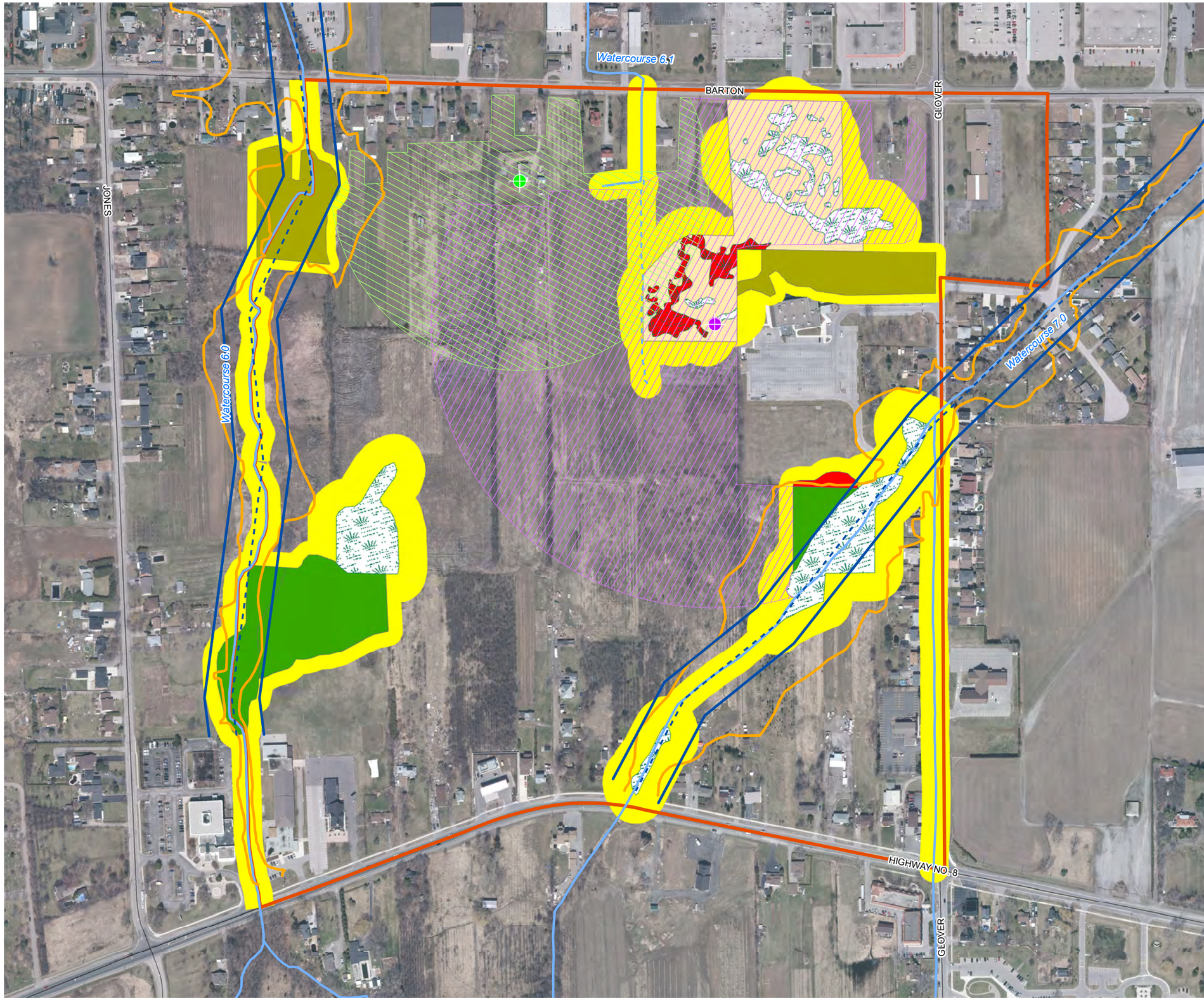
Figure 12-1: Schematic representation of effect of light fixture type on light pollution.

13 Opportunities and Limitations to Development

Limitations to development include natural heritage features protected under the City of Hamilton's Urban Official Plan (2013), the Fruitland-Winona Secondary Plan, and the policies of the HCA, vegetation protection zones (VPZ) associated with natural heritage features, restoration areas, as well as hazards such as floodplain and erosion hazard lands. Opportunities to development consist of lands outside of constraint areas. Opportunities and limitations to development within the Block 2 study area are illustrated in **Figure 13-1**. VPZ widths are consistent with the requirements under the City of Hamilton's Official Plan and the policies of the Hamilton Conservation Authority. For comparison, the NHS as defined in the Fruitland-Winona Secondary Plan has been provided (**Figure 13-2**). Changes in land use and policy updates since the completion of the Secondary Plan, in addition to the completion of detailed studies within the Block 2 area, necessitated updates and refinements to the NHS contained in the Secondary Plan.

The regulated habitats of barn swallow and bobolink are shown on the Opportunities and Limitations to Development map. As mentioned in **Section 11**, future impacts to habitats for these species are anticipated to be compensated for under the Endangered Species Act permitting process. **Consultation with the MNRF, including discussions regarding the acceptability of compensation, will be required.**

Limitations and opportunities to development shown on lands not subject to surveys completed as part of this study (see **Figure 14-1**) will need to be confirmed through the completion of an EIS. The EIS is to be completed by the development proponent(s) in consultation with the City of Hamilton and the Hamilton Conservation Authority in accordance with the City's EIS Guidelines.



Block 2 of the Fruitland-Winona Block Servicing Strategy

Legend

- Study Area
- Watercourse
- Floodlines
- Meander Belt/Erosion Hazard
- Barn Swallow (SAR)
- Barn Swallow 200m Buffer
- Bobolink (SAR)
- Bobolink 300m Buffer
- Unevaluated Wetland
- Significant Woodland
- Woodland
- Significant Wildlife Habitat
- Linkages
- Buffer

Buffer Distances:
Unevaluated Wetland - 30m
Significant Woodland - 15m
Woodland - 10m
Significant Wildlife Habitat - 15m
Watercourse - 15m

Note - The status of Watercourse 6.1 and the adjacent ditch connecting WC6.1 and the wetlands behind Winona Vine Estates is to be determined in consultation with the Hamilton Conservation Authority. As such, this map is considered interim and may be subject to updates.

Figure 13-1

Limitations and Opportunities to Development

Date: January 2018
Data Source: City of Hamilton, 2016

0 25 50 100 150 200
Meters

N

Hamilton

Aquafor Beech Limited

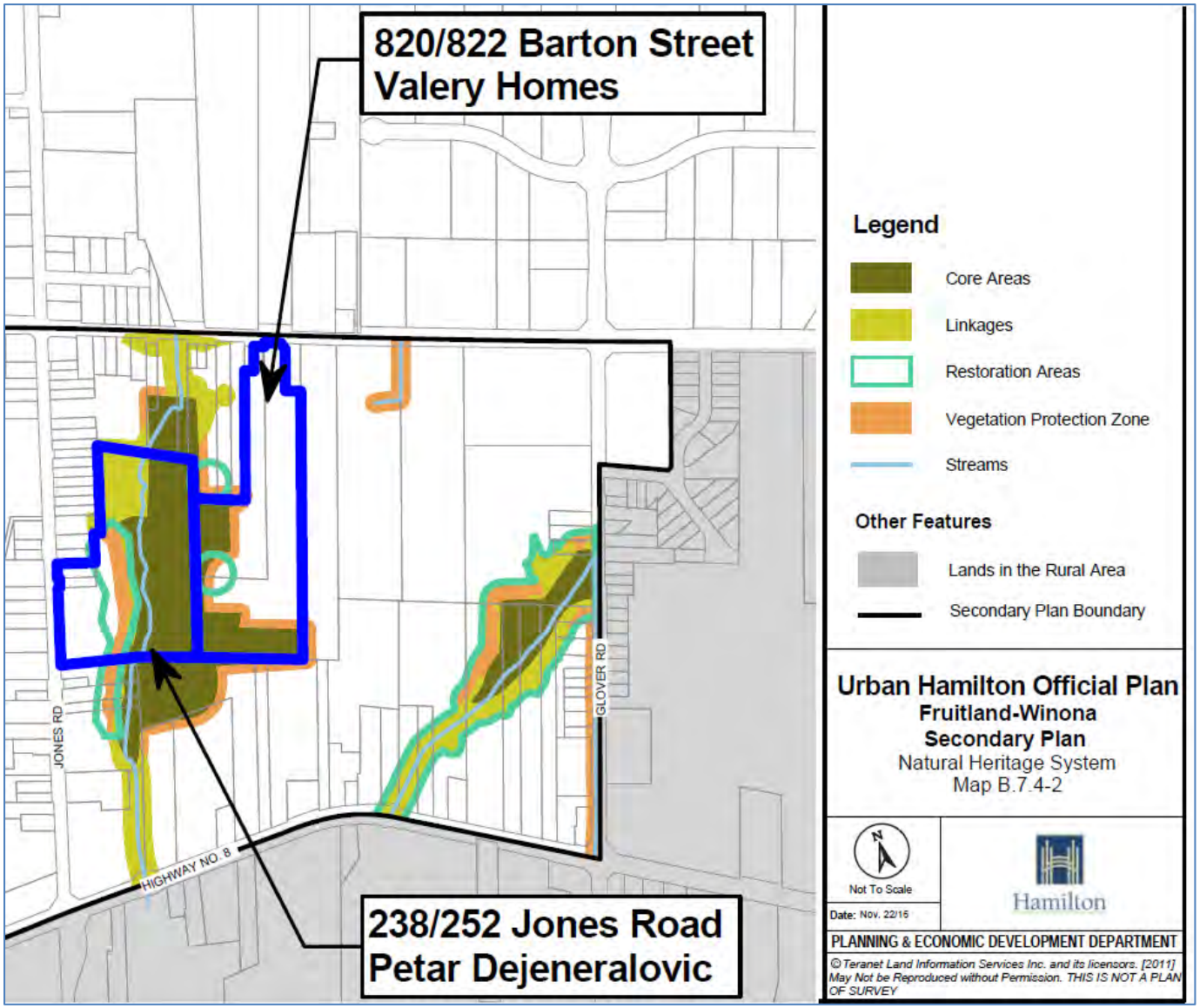


Figure 13-2: Natural Heritage System as shown in the Fruitland-Winona Secondary Plan (City of Hamilton, 2016)

14 Conclusions

The subsections below detail the key findings and recommendations of the EIS.

14.1 Summary of Key Findings

Terrestrial habitat and wildlife:

- A total of 137 vascular plants were identified to the species level, with an additional 10 species identified to genus. Two (2) species of conservation concern were recorded: pin oak and fuzzy-wuzzy sedge.
- A total of ten (10) ELC polygons were identified comprising eight (8) vegetation community types. Three (3) ELC polygons represent complex communities. Overall, vegetation communities within Block 2 are culturally influenced. None of the vegetation communities within the study area are provincially or globally significant.
    - Wetlands include ELC polygons 1 (in part), 2, 6, 8 and a green ash mineral deciduous swamp (ELC code SWDM2-2) at the upstream section of Watercourse 7.0.
    - Treed communities consist of ELC polygons 2, 3, 7, 8, 10, 10A, 10B, FOD7-2 and SWDM2-2. All except the last two listed are considered Significant Woodlands.
- A total of 28 bird species are reported from the area according to our breeding bird field surveys. Of the species observed, 25 exhibited signs of breeding. Two (2) species of conservation concerns were recorded: barn swallow and bobolink. Both species are Threatened and protected under the Endangered Species Act.
- Two (2) species of amphibians were recorded during surveys: western chorus frog (Car. Pop.) and gray treefrog. Both species were recorded throughout the study area, and are considered common in Ontario and Hamilton.
- Species-at-risk and other species of conservation concern confirmed within the study area include barn swallow (THR), bobolink (THR), monarch (SC); fuzzy-wuzzy sedge (S3, rare in Hamilton); and pin oak (rare in Hamilton).
- Species-at-risk potentially present within the study area include: little brown myotis (END), northern myotis (END, S3), tri-colored bat (END, S3?), snapping turtle (SC, S3), and West Virginia white (SC, S3).
- Significant Wildlife Habitat confirmed within the study area consists of *Specialized Habitat for Wildlife: Special Concern and Rare Wildlife Species*. Significant Wildlife Habitat potentially present within the study area includes *Seasonal Concentrations of Animals: Bat Maternity Colonies* and *Specialized Habitat for Wildlife: Special Concern and Rare Wildlife Species*.

Aquatic habitat:

- All watercourses within the study area have had their planform altered and straightened.
- Within the study area, Watercourses 6.0 and 7.0 are considered indirect/supporting fish habitat. Downstream of the CN rail track between Glover Road and the QEW, Watercourse 7.0 is considered direct fish habitat.
- The southern "hockey stick-shaped" portion of Watercourse 6.1, as shown in the SCUBE West Subwatershed Study Phase 1 and Phase 2 Final Report (Aquafor Beech Ltd., 2013), is considered indirect/supporting fish habitat. The portion/extension of the watercourse south of the aforementioned portion of Watercourse 6.1 was added to the watercourse mapping following a site visit by the Hamilton Conservation Authority.
- The HCA has indicated that Watercourse 6.1 contributes to downstream fish habitat and has limited function overall and would not be required to be retained as an open feature post-development provided that the drainage contribution of the watercourse to downstream reached is maintained through stormwater management design.
- Restoration of the downstream portion of Watercourse 6.0 and all of Watercourse 7.0 is recommended. Furthermore, in recognition of the recent extensive vegetation removals along Watercourse 6.0., it is recommended that riparian areas which were subject to removals be replanted.
- Alterations to any of the watercourses within the study area will be subject to the DFO review process.

Natural Heritage System:

Following the completion of detailed studies within the Block 2 study area, land use changes/vegetation clearing, and policy updates; Aquafor Beech Limited redefined the Natural Heritage System from that which was presented in the SCUBE reports and the Fruitland-Winona Secondary Plan (see **Figure 13.2**):

- Core Areas of the Natural Heritage System consist of wetlands, significant woodlands, significant wildlife habitat, watercourses, and their associated Vegetation Protection Zones (see summary in **Section 11**, **Table 11-1**).
- Linkages consist of the northern portion of ELC polygon 1, ELC polygon 10, FODM7-2, and Watercourses 6.0 and 7.0.

The Natural Heritage System, along with hazard lands such as floodplain and meanderbelt hazards, collectively represent limitations to development. The floodplain mapping for Watercourse 6.0 will be updated, if needed, as the Hamilton Conservation Authority ongoing study is finalized.

Recommendations to mitigate potential negative impacts to the form and function of the Natural Heritage System resulting from the proposed land use change and servicing plan are detailed in **Section 12**, **Table 12-1**.

14.2 Recommendations for Further Study

Recommendations for further study and future updates are as follows:

1. It is recommended that lands not accessed as part of the work completed for the Block 2 study be subject to further study (e.g. an EIS) at the expense of the landowner(s). The EIS is to be completed in consultation with the City of Hamilton and the Hamilton Conservation Authority in accordance with the City's EIS Guidelines. Access status of properties within the study area are illustrated in **Figure 14-1**, below.
2. To ensure compliance with the Endangered Species Act, the following is recommended:
    a. Treed habitats (including and not limited to ELC polygon 10A) throughout the study area, but especially those subject to road crossings, should be surveyed for bat maternity roosts in accordance with the Guelph District MNRF's *Survey Protocol for Species at Risk Bats within Treed Habitats: Little Brown Myotis, Northern Myotis & Tri-Colored Bat* (MNRF, 2017).
    b. In order to develop, persons owning lands that contain regulated habitat for barn swallow and/or bobolink should consult with the MNRF about obtaining a permit under the Endangered Species Act prior to any habitat alteration.
3. The Hamilton Conservation Authority is to determine whether there is a surface water connection between the wetland complex on the corner of Barton Street and Glover Road (ELC polygon 1) in order to determine if the wetland is regulated according to the policies of the Conservation Authority. This determination would be based on ecological inventory/assessment work completed by the future development proponent(s) at this location. HCA may request a site visit to confirm conditions.
4. Furthermore, it is recommended that the Hamilton Conservation Authority update their regulated areas mapping per the findings of this report and the result of (3) and (7).
5. Watercourses 6.0 and 7.0, as identified in the SCUBE report and reiterated in this report, are candidates for restoration and revegetation. Accordingly, as development moves forward it is recommended that comprehensive channel and riparian restoration plans be developed for these watercourses. Coordination amongst landowners within Block 2 and, in the case of Watercourse 6.0, in Block 1 will likely be required.

6. Opportunities to restore and enhance previously degraded ecosystems (e.g. especially those associated with Watercourse 6.0 and lands on the corner of Barton Street and Glover Road) should be given due consideration.
7. Updated floodplain mapping for Watercourse 6.0 is expected to soon be available from the Hamilton Conservation Authority. This update will necessitate the update of the development limitations mapping.
8. Note that future development applications will have to conduct a DFO screening assessment in support of any alterations to watercourses.

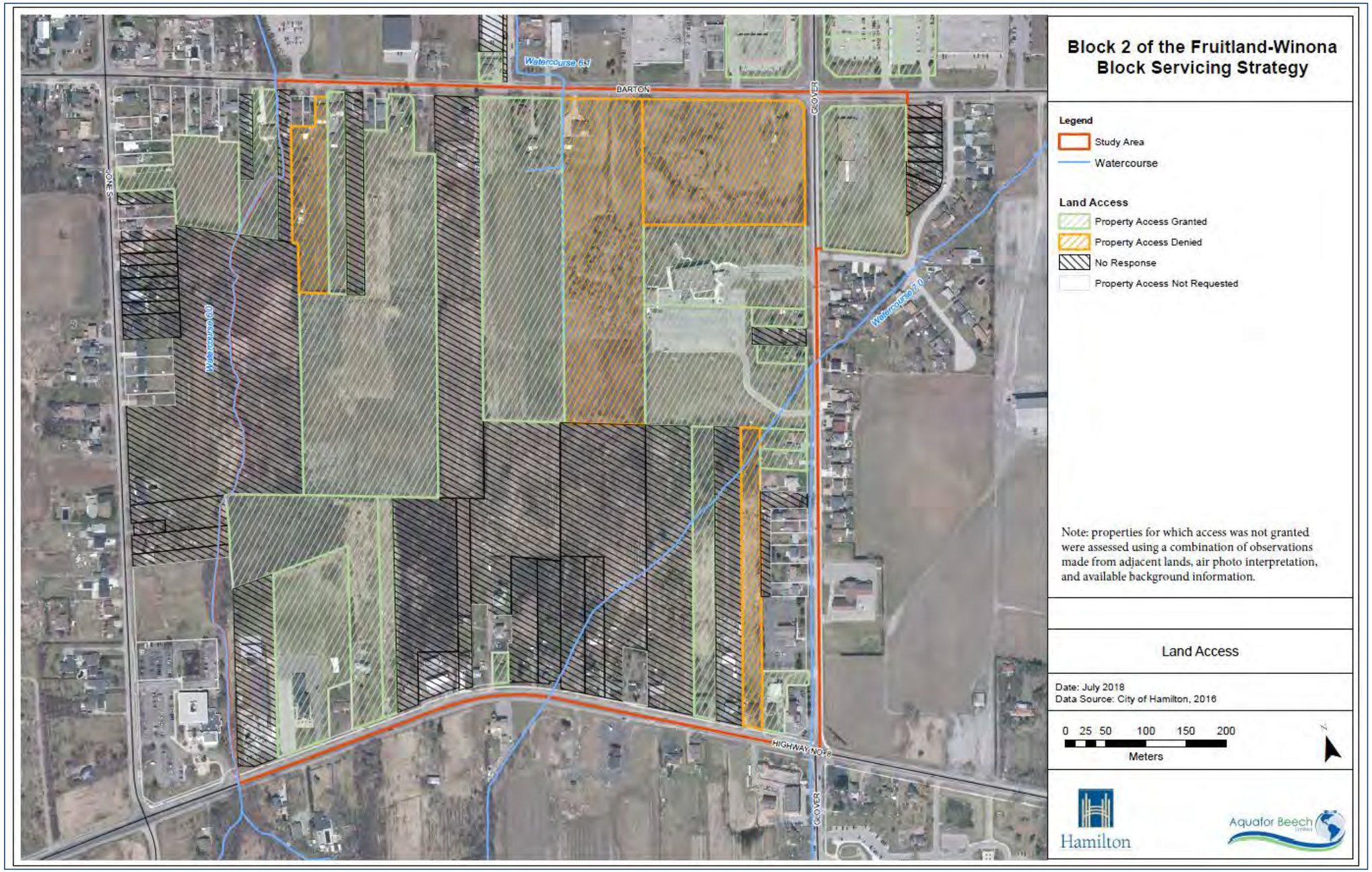


Figure 14-1: Land Access

14.3 Restoration and Enhancement Opportunities

The City of Hamilton may undertake enhancements to Core Areas and Linkages within Block 2 or seek to implement these works as Conditions of Approval through future applications under the Planning Act. The timing of the other restoration and enhancement works is not dependent on any other works or development, but coordination of enhancement activities with other works (e.g. drainage and infrastructure improvements) and/or development may present opportunities to minimize potential disturbance to the NHS and achieve cost savings. Adaptive monitoring of enhancement measures is strongly recommended.

For most of the above restoration works, the Hamilton Conservation Authority and City of Hamilton would be the primary approval agencies, with additional approvals/permits from MNRF and DFO where appropriate. Opportunities to involve other community organizations in enhancement activities should be investigated. Potential partners include the Hamilton-Wentworth Stewardship Council, ReLeaf Hamilton, the Hamilton Naturalists Club, and the Field and Stream Rescue Team.

Several recommendations for restoration and enhancement measures are contained within the SCUBE reports (Aquafor Beech Ltd., 2012 & 2013). The objectives of the aforementioned enhancement measures include the following:

- naturalize Hazardous Lands (e.g. floodplain) as defined by the Hamilton Conservation Authority;
- decrease the edge-interior ratio of Significant Woodlands and Wetlands;
- provide improved opportunities for wildlife movement;
- buffer Core Areas from future land uses;
- increase habitat diversity; and
- improve water quality.

Figure 13-2 illustrates the environmental restoration and enhancement works recommended in the Fruitland-Winona Secondary Plan (which include restoration of hazard lands such as floodplain. Please note that the NHS and enhancements as shown in the figure have been updated as part of this study). These works are not directly related to, or expected to benefit the future urban development lands. Rather, these works are generally recommended to address existing environmental issues, or to protect and enhance the Core Areas and Linkages of the recommended NHS. Development proponents are not responsible for any of the recommended restoration and enhancement works at this time. It should be recognized that the City of Hamilton may seek to implement these works as Conditions of Approval through future applications under the Planning Act. Restoration and enhancement works will be

reviewed by the City of Hamilton and the Hamilton Conservation Authority. These works include the following:

Watercourse 6.0 Stream Restoration – The following works are recommended to improve the existing aquatic habitat, bank stability and stream shading of the urbanized reaches of Watercourse 6.0 so that it can ultimately function as direct fish habitat

- Secure banks and improve aquatic habitat through woody and herbaceous riparian plantings at erosion points.
- Removal of garbage and debris.
- Assess the feasibility of replacing the deteriorated culvert at Barton Street.
- It is recommended that Hamilton Conservation Authority staff be included at the early restoration design stages to identify specific areas of concern.
- It is recommended that the City of Hamilton explore opportunities to encourage stewardship of watercourses. Potential measures include providing support for the purchase of riparian plantings and facilitating the development/distribution of educational/interpretive materials.

Enhancement of terrestrial features associated with Watercourse 6.0 – A woodland and a swamp, referred to as Woodland 2 and Wetland 2 in the SCUBE reports; once connected ELC Polygons 6, 7, and 8 with the Green Ash Hardwood Deciduous Forest (FODM7-2) to the north. A significant portion of Woodland 2 and Wetland 2 were removed since the completion of the SCUBE studies; presently the results of the related ongoing Ontario Municipal Board (OMB) hearing and the results of charges under the Conservation Authorities Act (CAA) are not known. Accordingly, the applicability of the restoration and enhancement recommendations contained in the SCUBE reports (i.e. reduction of edge-interior ratio of woodlands, enhanced VPZs along Wetland 2) is not known at this time.

From a natural heritage perspective, it is recommended that *at a minimum*, the hazard lands associated with Watercourse 6.0 be subject to reforestation that will re-establish the connection between natural areas located at the northern and southern extent of Watercourse 6.0. For the purposes of establishing limitations and opportunities to development, Aquafor Beech Limited and the City of Hamilton have assumed that the aforementioned minimum area will be restored. It is further recommended that the restored communities reflect extant natural communities present or once present within Block 2 (e.g. oak-hickory lowland deciduous forest). These recommendations are not intended to supersede any decisions made under the OMB process or the charges under the CAA.

Watercourse 7.0 Restoration and Enhancement – The following works are recommended to improve existing aquatic habitat and increase the ecological function of the riparian corridor:

- The existing culvert at the proposed east-west road crossing upstream of Glover Road should be replaced; the use of an open-bottom culvert should be considered to facilitate fish passage.
- It is recommended that the City of Hamilton explore opportunities to encourage stewardship of watercourses. Potential measures include providing support for the purchase of riparian plantings and facilitating the development/distribution of educational/interpretive materials.

Enhancement of terrestrial features associated with Watercourse 7.0 – In keeping with the recommendations of the SCUBE studies, it is recommended that extant natural areas along Watercourse 7.0 (i.e. ELC Polygons 1A, 2, and SWDM2-2) be connected via riparian reforestation efforts (general area shown in **Figure 13-2**, above).

Aquafor Beech Limited recommends enhancement of the floodplain Watercourse 7.0 through the use of site-specific plantings. Enhancement plantings should consist of native trees and shrubs. Specifically, it is recommended that the lands within the floodplain be subject to restoration consisting of forest nucleation cells (**Figure 14-2**) planted in a gradient of concentration from the edge of extant wetlands (higher concentration) outwards to the limits of the floodplain (lower concentration). Such a planting density gradient would mimic patterns of natural succession, providing habitat diversity within the ecotone and enhancing its potential use by wildlife (OMNR, 2000). Recommended riparian plantings would have the added benefit of improving water quality and enhancing aquatic habitat.

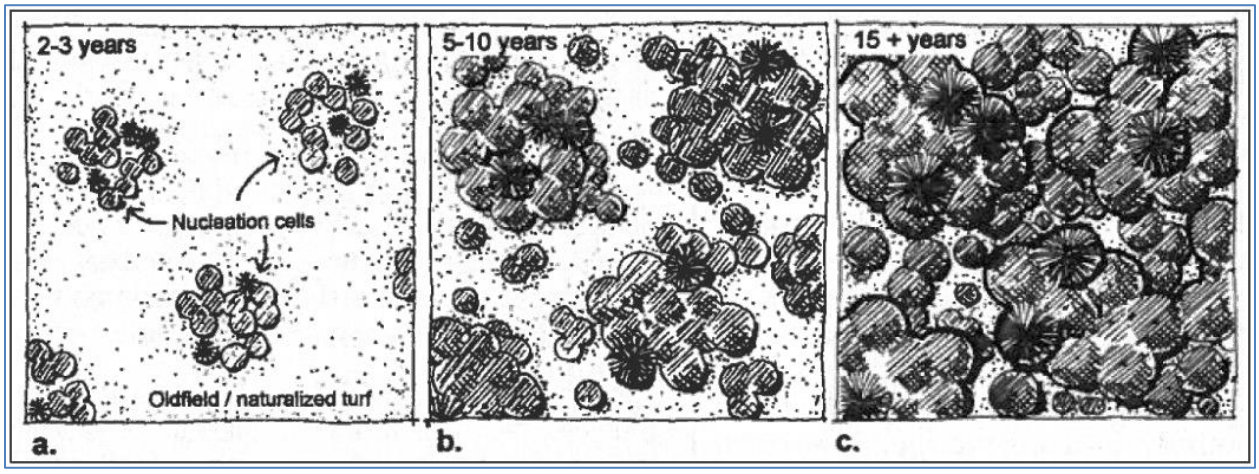


Figure 14-2 - Gradual expansion of forest nucleation cells over time (from Daigle and Havinga, 1996)

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Appendix A: ELC Field Sheets and Representative Photos

ELC Polygon 1

Head Office:
2600 Skymark Ave, Building 6, Suite 202
Mississauga, ON L4W 5B2
Tel: 905-629-0099 Fax: 905-629-0089

Branch Office:
55 Regal Rd, Unit 3,
Guelph, Ontario N1K 1B6
Tel: 519-224-3740 Fax: 519-224-3750

www.aquaforbeech.com

ELC Polygon 1A

ELC Polygon 2

Head Office:
2600 Skymark Ave, Building 6, Suite 202
Mississauga, ON L4W 5B2
Tel: 905-629-0099 Fax: 905-629-0089

Branch Office:
55 Regal Rd, Unit 3,
Guelph, Ontario N1K 1B6
Tel: 519-224-3740 Fax: 519-224-3750

www.aquaforbeech.com

ELC Polygon 3

ELC Polygon 4

ELC Polygon 5

ELC Polygon 6

ELC Polygon 7

ELC Polygon 8

Head Office:
2600 Skymark Ave, Building 6, Suite 202
Mississauga, ON L4W 5B2
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www.aquaforbeech.com

ELC Polygon 9

ELC Polygon 10

FOD7-2 (note: photo taken on June 9 2016)

Lands between ELC polygon 6 and Watercourse 6.0 (note: photo taken on June 9 2016)

Roadside survey. Property access denied

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Hamilton Block 2	POLYGON: 1	
	SURVEYOR(S): Ash Baron	DATE: Sept 2015	TIME: start / finish
	UTMZ: 17	UTME: 607070	UTMN: 4785754

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL (mix)	G ORGANIC	G LACUSTRINE	G NATURAL	G PLANKTON	G LAKE
G WETLAND (mix)	G MINERAL SOIL	G RIVERINE	G CULTURAL	G SUBMERGED	G POND
G AQUATIC	G PARENT MIN.	G BOTTOMLAND		G FLOATING-LVD.	G RIVER
assume mixed	G ACIDIC BEDRK.	G TERRACE		G GRAMINOID	G STREAM
	G BASIC BEDRK.	G VALLEY SLOPE		G FORB	G MARSH
	G CARB. BEDRK.	G TABLELAND		G LICHEN	G SWAMP
SITE		G ROLL. UPLAND		G BRYOPHYTE	G FEN (complex)
G OPEN WATER		G CLIFF	**COVER**	G DECIDUOUS	G BOG
G SHALLOW WATER		G TALUS	G OPEN	G CONIFEROUS	G BARREN
G SURFICIAL DEP.		G CREVICE / CAVE	G SHRUB	G MIXED	G MEADOW
G BEDROCK		G ALVAR	G TREED		G PRAIRIE
		G ROCKLAND			G THICKET
		G BEACH / BAR			G SAVANNAH
		G SAND DUNE			G WOODLAND
		G BLUFF			G FOREST
					G PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	1	QUEALBA>QUERUBR=CAROVAT
2	SUB-CANOPY	4	2	SAL SP1=SAL SP2>ULMAMER>CAROVAT
3	UNDERSTOREY	5	3	ASTLANC>DALCARO>CORRACE
4	GRD. LAYER	6	4	SOLCANA>>ASTLANC>all others

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS: (n/a)		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER	✓	YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

n/a

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:		
INCLUSION		
X COMPLEX	meadow marsh / meadow	MAM2/CUM1

Notes: This area was once occupied by Woodland 6, which has been clearcut.
- Nearby field to west is in hay.

ELC STAND CHARACTERISTICS	SITE:	
	POLYGON: 1	
	DATE:	
	SURVEYOR(S):	

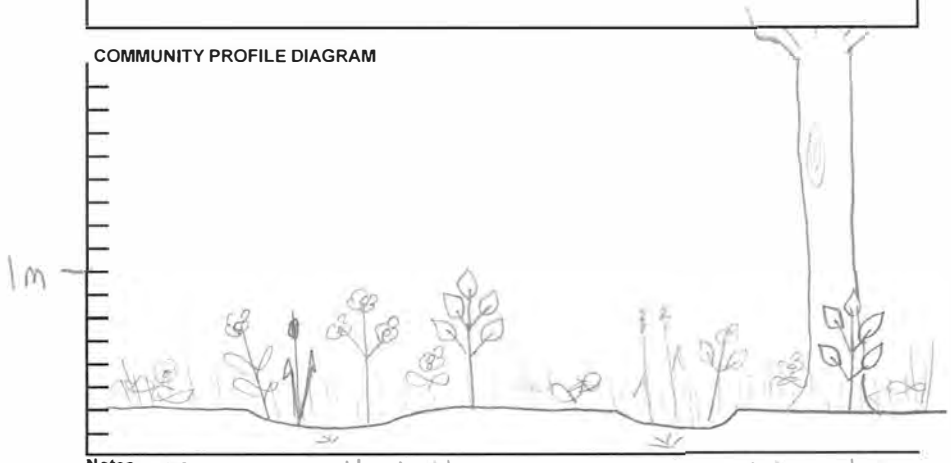
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes: It appears that there are some wet low-lying spots throughout the area (scattered) ↳ wetland sedges + forbs present. See p...

note: - Chorus frog heard during calling amph surveys this year

ELC

SOILS ONTARIO

SITE:
POLYGON:
DATE:
SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Slope Type	Slope Class	Z	UTM EASTING	UTM NORTHING
1											
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON	Permission to access property was denied, ∴ soils not completed.				
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

0607020
4785454 ±35m
* sample taken

ELC

PLANT SPECIES LIST

SITE: Hamilton Block 2
POLYGON: 1
DATE: Sept 30 2015
SURVEYOR(S): AVB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
FRAPENN			O		
POR_SP			O		
CAROVAT	O	R			
QUEALBA	O				
ULMAMER		O			
PINSTRO	R				
QUERUBR	O				
CARCORD	R				
OSTVIRG		R			
RHACATH				O	
CORSTOL				O	
SAL-SP1		O			
SAL-SP2		O			
TOXRADI			O		
CORRACE			O		
PARINN			O		
PRUVIRG			O		
VIBOPUL			R		

on South rd, higher land

Southern end

SPECIES CODE	LAYER 1	2	3	4	COL.
CIRARVE				A	
DAUCARO			A		
GOLCANA				D	
CHLINTY				O	
BIDFRON			O		
ASTLANC			A	A	
CAR_SP				A	
CAR_SP				A	
CANARVE				A	
Late G. rod				O	
ASTNOVA				O	
PHAARUN				A	
CARVULP				A	
ASTLALA			A	A	
EUTGRAM				A	
TAROFFI				O	
HIEAURA			O		
PHLPRAT				O	
ONOACAN				A	
PHRAUST			O		
woodcress			O		
VERHAST			O	O	
CALDULC				O	
EPIPARV				O	
GERMACU				R	
ARITRIP				O	
VERCOMM				O	
ASTPUPU				O	
TYPANGU			R		
POLPUBE				O	
IMPCAPE				A	

Page ..... of .....

community centre

- Bur + S pump white oaks on adjacent property, ... shlbrid
-> P + Chrysanthemum, ...

ELC

MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	3
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	9
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	0
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	4
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	0
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	0
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	4
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	2
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC

WILDLIFE

SITE: Hamilton Block 2
POLYGON: 1
DATE:
SURVEYOR(S): AVB
START TIME:
END TIME:

TEMP (°C): 18 | CLOUD (10th): 9 | WIND: | PRECIPITATION: 0

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

X	VERNAL POOLS likely		SNAGS
	HIBERNACULA		FALLEN LOGS log piles

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	Crow	OB		∴					
O	crickets	VO	tons!	n/a					
L	monarch	OB	nectaring	∴					
B	red-tail hawk	OB		∴					

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

- note that CHFR recorded during calling anuran surveys

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Hamilton Block 2		POLYGON: 2
	SURVEYOR(S): Ash Doron	DATE: Sept 30 '15	TIME: start / finish
	UTMZ: 17	UTME: 607000	UTMN: 4785383

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN. G ACIDIC BEDRK. G BASIC BEDRK. G CARB. BEDRK.	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL. UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION
SITE			**COVER**		
G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK			G OPEN G SHRUB G TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	X	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	Swamp	SW
COMMUNITY SERIES:	Deciduous swamp	SWD
ECOSITE:	Mineral Deciduous Swamp	SWD4
VEGETATION TYPE:	Willow mineral deciduous swamp	SWD4-1
INCLUSION		
COMPLEX		

Notes:

ELC STAND CHARACTERISTICS	SITE:
	POLYGON: 2
	DATE:
	SURVEYOR(S):

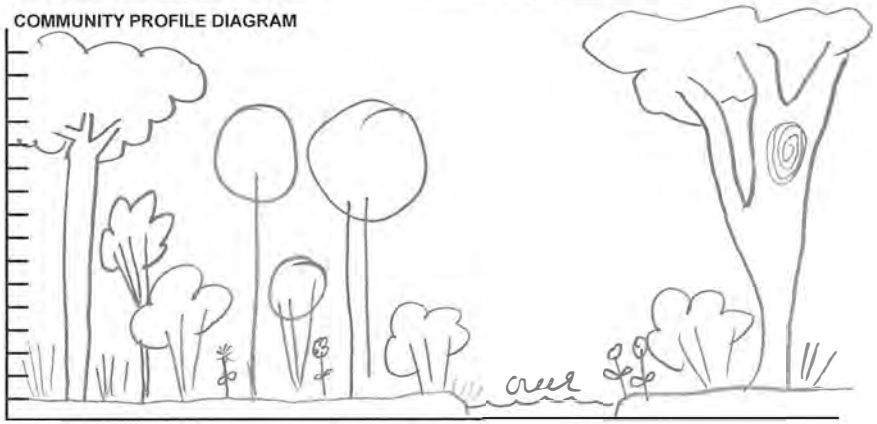
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC

SOILS ONTARIO

SITE: Hamilton Block 2
POLYGON: 2
DATE: Sept 25 '15
SURVEYOR(S): AVB

	P/A	PP	Dr	Position	Aspect	Slope %	Type	Class	UTM Z	EASTING	NORTHING
1									17	607000	4785383
2											
3											
4											
5											

± 2.4m

SOIL	1	2	3	4	5
TEXTURE x HORIZON	A 0-80 cm; B 80-120 cm				
A TEXTURE	SiL				
COURSE FRAGMENTS	none				
B TEXTURE	SiCL				
COURSE FRAGMENTS	none				
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS	none				
SURFACE ROCKINESS	none				
DEPTH TO / OF					
MOTTLES	11 cm				
GLEY	none				
BEDROCK	>120				
WATER TABLE	>120				
CARBONATES	Y				
DEPTH OF ORGANICS	Ø				
PORE SIZE DISC #1	—				
PORE SIZE DISC #2	—				
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC PLANT SPECIES LIST

SITE: Hamilton Block 2
POLYGON: 2
DATE: Sept '15
SURVEYOR(S): AVB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
SAL x RUBE	D	A		O	
ACENEGU		A	A		
FRAPENN (var rubra)		O		A	
ACEPLAT	A	A			
ROBPSEU			R		
ULMAMER			O		
FRANIGR		O			
JUGNIGR		R			
VIBOPUL					
CRAMACR			O		
RHACATH			D	A	
PARINN				A	
VITRIPA				A	
CORSTOL			O	O	
LONTATA			R		
RIBAMER			R		
TOXRADI				O	
CRA. SP (thorns ≈ 3cm long)					x
SCI_SP				R	
EUT GRAM				R	
CONARVE				R	
EUPMACU				O	
BIDFRON				A	
LYCUNIF				O	
ELYSTRI				O	
SCIATRO				O	
PRUVULG				O	

SPECIES CODE	LAYER 1	2	3	4	COL.
ARCMINI				O	
DACGLOM				O	
ASTLAEVA				A	
ASTLANC				A	
BIDFRON				O	
BROINN				R	
PHAARUN				A	
SOLCANA				A	
IMPCAPE				A	
ASTNOVA				A	
LYTSALI				O	
ALIPLAN				O	
cockleburr				R	
SOLDULC				O	
CONARVE				R	
~~THE AURA~~				R	
creeping agill				A	
LEEORYZ				A	
GEUCANA				A	
GEUALLE				A	
TOAPALU				A	
GENBIEN				O	
VERURTI				A	
RHUCRIS				R	
TYPLATI				R	
CHEALBU				R	
ALIPETI				R	
VERHAST				R	
ASTPUPU				O	
CARVULP				A	
CARBEBO				O	

Page ..... of .....

eastern edge of community @ 0607015 4785398 ±2.5m

ELC

MANAGEMENT / DISTURBANCE

SITE: Block 2
POLYGON: 2
DATE:
SURVEYOR(S):

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	0
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	2
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	4
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	0
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	1
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	1
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	2
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	2
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	1
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	1
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC

WILDLIFE

SITE:
POLYGON: 2
DATE:
SURVEYOR(S):
START TIME: END TIME:

TEMP (°C): 25 CLOUD (10th): 2 WIND: 2 PRECIPITATION: 0

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
M	Raccoon	TK							
B	[illegible] bird	VO							
B	Robin	VO							
B	Red winged [illegible]	VO							
B	yellow bellied sapsucker	OB + VO							
B	chickadee	OB							
M	vole	OB							

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Hamilton Block 2		POLYGON: 3	
	SURVEYOR(S): Ash Simon	DATE: Sept 15	TIME: start / finish	
	UTMZ: 17	UTME: 607008	UTMN: 4785447 ±4m	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL	G ORGANIC	G LACUSTRINE	G NATURAL	G PLANKTON	G LAKE
G WETLAND	G MINERAL SOIL	G RIVERINE	G CULTURAL	G SUBMERGED	G POND
G AQUATIC	G PARENT MIN.	G BOTTOMLAND		G FLOATING-LVD.	G RIVER
	G ACIDIC BEDRK.	G TERRACE		G GRAMINOID	G STREAM
	G BASIC BEDRK.	G VALLEY SLOPE		G FORB	G MARSH
	G CARB. BEDRK.	G TABLELAND		G LICHEN	G SWAMP
SITE		G ROLL. UPLAND		G BRYOPHYTE	G FEN
G OPEN WATER		G CLIFF	**COVER**	G DECIDUOUS	G BOG
G SHALLOW WATER		G TALUS	G OPEN	G CONIFEROUS	G BARREN
G SURFICIAL DEP.		G CREVICE / CAVE	G SHRUB —	G MIXED	G MEADOW
G BEDROCK		G ALVAR	G TREED —		G PRAIRIE
		G ROCKLAND			G THICKET —
		G BEACH / BAR			G SAVANNAH
		G SAND DUNE			G WOODLAND —
		G BLUFF			G FOREST
					G PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER	X	YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	Forest	FO
* COMMUNITY SERIES:	Deciduous forest	FOD
ECOSITE:	Fresh-moist lowland Deciduous forest	FOD7
3B → VEGETATION TYPE:	Fresh moist Ash lowland deciduous forest	FOD7-2
INCLUSION		
3A → X COMPLEX	Mineral cultural thicket (Buckthorn)	CUT1

Notes:

ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

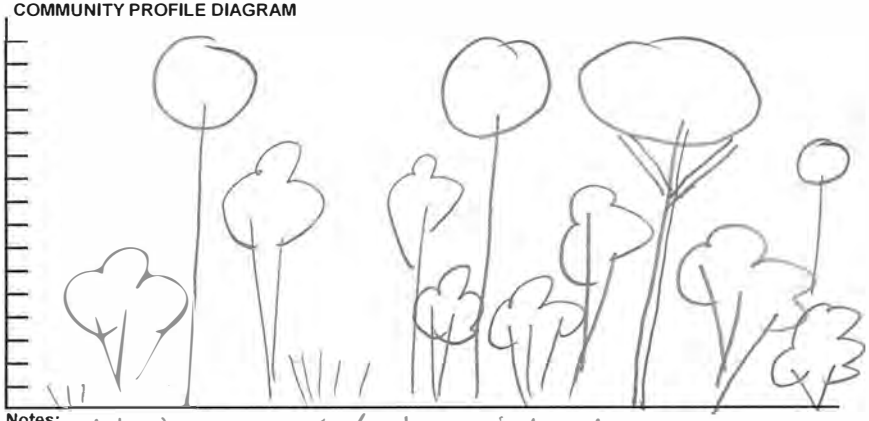
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes: old plow marks/ruts evident

ELC
SOILS ONTARIO

SITE:
POLYGON: 3
DATE:
SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Type	Class	UTM Z	EASTING	NORTHING
1									17	607008	4785447
2											
3											
4											
5											

±4m

SOIL	1	2	3	4	5
TEXTURE x HORIZON	A 0-20 cm B 20-120				
A TEXTURE	SiCL				
COURSE FRAGMENTS	none				
B TEXTURE	SiC				
COURSE FRAGMENTS	none				
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS	none				
SURFACE ROCKINESS	none				
DEPTH TO / OF					
MOTTLES	18cm				
GLEY	none				
BEDROCK	>120				
WATER TABLE	>120				
CARBONATES					
DEPTH OF ORGANICS	∅				
PORE SIZE DISC #1	—				
PORE SIZE DISC #2	—				
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC
PLANT SPECIES LIST

SITE: Hamilton Block 2
POLYGON: 3
DATE: Sept '15
SURVEYOR(S): AVB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
POPTREM	D				
FRAPENN	A	A	O	A	
QUERUBR	O	O			
CAROVAT	O	R			
QUEBICO	R				
CARCORD		R			
ULMAMER		R		O	
QUEALBA	O			O	
VIBCASS			R		
RHACATH		D			
PRUVIRG					
CRAMACR					x
TOXRADI					
CORRACE			D		
LONTATA					
VITRIPA					
CRA-SP					
PARININ					
PURPHIST					
ROS-SP					

SPECIES CODE	LAYER 1	2	3	4	COL.
CARARCT					
ALIPETI					
ASTLALA					
CARGRAC					
ASTLANC					
SOLJUNC					
CARROSE					
CARVULP					
PRUVUVU					
VALUGUL					X
FRAVIRG					
HYPPUNC					
GEUALEP					
CAR-SP					
SOLCANA					
CARBEBB					
OXASTRI					
CIRLUTE					
ASTNOVA					

607005
4785421
±3.5m

Valerian officinalis
Euro. Valerian

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- Climacium dendroides

ELC

MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC

WILDLIFE

SITE: Hamilton Block 2
POLYGON: 3
DATE:
SURVEYOR(S):
START TIME: END TIME:

TEMP (°C): 20 CLOUD (10th): 9 WIND: 1 PRECIPITATION: 0

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	[illegible]	OB		[illegible]					
B	[illegible]	OB		[illegible]					
B	Bluejay	NO							
M	Squirrel	OB							
M	Raccoon	TR							

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Hamilton Blvd 2		POLYGON: 4	
	SURVEYOR(S): Ash Baron	DATE: Sept 30/18	TIME: start / finish	
	UTMZ: 17	UTME: 606547	UTMN: 4785432 ± 2m	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN. G ACIDIC BEDRK. G BASIC BEDRK. G CARB. BEDRK.	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL. UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION
SITE G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK			**COVER** G OPEN G SHRUB G TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	Cultural	CU
COMMUNITY SERIES:	Cultural thickets	CUT
ECOSITE:	Mineral Cultural Thicket	CUT1
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes: No Reed canary grass marsh found. Patch of RCG present on edge near school / ball diamond, but not ⇓.

ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

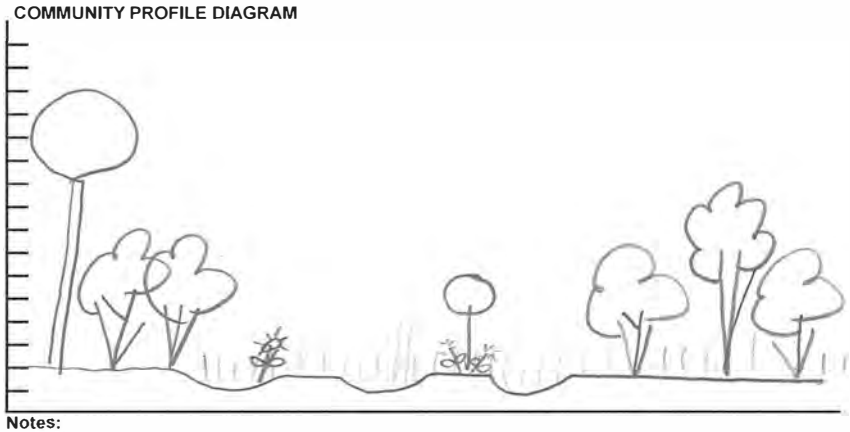
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC

SOILS ONTARIO

SITE: Hamilton Block 2
POLYGON: 4
DATE:
SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Type	Class	UTM Z	EASTING	NORTHING
1									17	606547	4785432
2											
3											
4											
5											

±2m

SOIL	1	2	3	4	5
TEXTURE x HORIZON	couldn't auger in b/c soil too tough - 2 - auger heads in				
A TEXTURE	CL				
COURSE FRAGMENTS	none				
B TEXTURE					
COURSE FRAGMENTS	/				
C TEXTURE					
COURSE FRAGMENTS	/				
EFFECTIVE TEXTURE					
SURFACE STONINESS	none				
SURFACE ROCKINESS	none				
DEPTH TO / OF					
MOTTLES	no				
GLEY	no				
BEDROCK	>120				
WATER TABLE	>120				
CARBONATES					
DEPTH OF ORGANICS	Ø				
PORE SIZE DISC #1	/				
PORE SIZE DISC #2	/				
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC

PLANT SPECIES LIST

SITE: Block 2
POLYGON: 4
DATE:
SURVEYOR(S): AVB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
ULMAMER	R				
FRAPENN	O	O			
RHACATH		D			
RHUTYPH		R			
CORRACE			A		
MALPUMI		A			
RUBALLE			A		
ROSMULT			A		
CRAMACR		O			
CRA-SP		O			
VITVINI					

old orchard →

SPECIES CODE	LAYER 1	2	3	4	COL.
SOLJUNC				A	
BROININ				D	
PHAARUN				A	
ASTNNA				A	
SOLCANA				A	
Late c.-rod				A	
Bull thistle				O	
fennel				O	
PHLPRAT				A	
ASTLANC				A	
ASCSYRI				O	
ACHIMIM				A	
VICCRAC				A	
AMBARTE				O	
FRAVIRG				O	
butter + eggs				O	
POAPRAT				A	
ASTERIC				A	
GEUALLE				A	
DAUCARO				O	
HYPPUNC				O	
CHRLEUC				O	
CIRARVE				O	

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hedgerows are buckthorn dominated [illegible] during Ash.

ELC

MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC

WILDLIFE

SITE: Block 2
POLYGON: 4
DATE:
SURVEYOR(S):
START TIME: END TIME:

TEMP (°C): 15 CLOUD (10th): 8 WIND: 4 PRECIPITATION: 0

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
R	rtail hawk	OR		•					

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Hamilton Blaze 2		POLYGON: 5	
	SURVEYOR(S): Ash Baron	DATE: Sept 30, 15	TIME: start / finish	
	UTMZ: 17	UTME: 606594	UTMN: 4785561 ±2.6m	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN. G ACIDIC BEDRK. G BASIC BEDRK. G CARB. BEDRK.	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL. UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION
SITE			**COVER**		
G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK			G OPEN G SHRUB G TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:		PIONEER	X	YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	Cultural	CU
COMMUNITY SERIES:	Cultural meadow	CUM
ECOSITE:	Mineral Cultural meadow	CUM1
VEGETATION TYPE:	Dry-moist old field meadow type	CUM1-1
INCLUSION		
X COMPLEX	mineral meadow marsh	MAM2

Notes: evidence of tree cutting, esp in southern portion, & one previously treed area on east side near hedgerow → shaped like this + <0.5 ha

ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

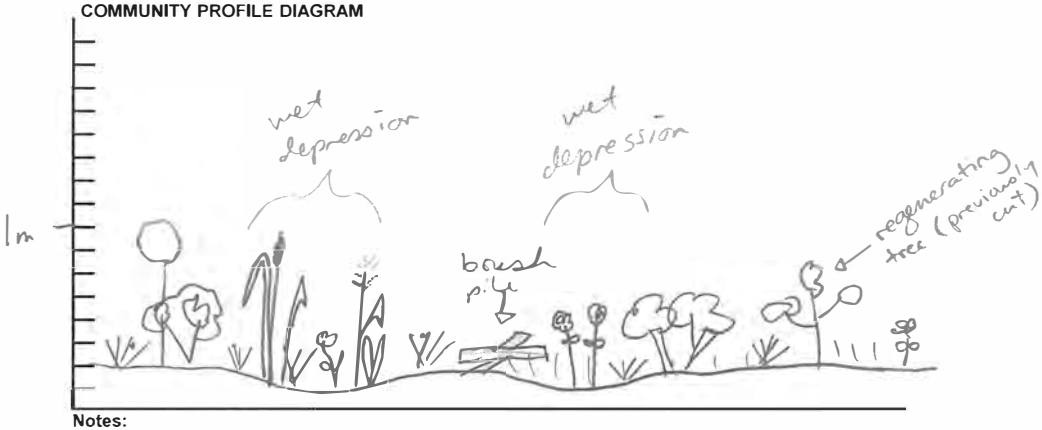
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC

SOILS ONTARIO

SITE:
POLYGON: 5
DATE:
SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Type	Class	UTM Z	EASTING	NORTHING
1									17	606594	4785561
2											
3											
4											
5											

± 2.6 m

SOIL	1	2	3	4	5
TEXTURE x HORIZON	hard dry loam, couldn't auger in past 2 auger heads.				
A TEXTURE	CL				
COURSE FRAGMENTS	none				
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS	none				
SURFACE ROCKINESS	none				
DEPTH TO / OF					
MOTTLES	no				
GLEY	no				
BEDROCK	>1.0				
WATER TABLE	>1.0				
CARBONATES	"				
DEPTH OF ORGANICS	0				
PORE SIZE DISC #1	—				
PORE SIZE DISC #2	—				
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC PLANT SPECIES LIST

SITE: Hamilton Block 2
POLYGON: 5
DATE: Sept 2015
SURVEYOR(S): AVB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
FRAPENN	O				
QUEBICO	R		R		
FRAAMER	R				
ULMAMER			R	R	
JUNVIRG				R	
QUERUBR				R	
RHACATH		D	D		
CORRACE			A		
CORFOEM			R		
PRUVIRG			R		
RHUTYPH		O			
MALPUMI			A	A	
TOXRADI				O	
wild crab			R		
russian olive					
Privet			O		
ROSMULT			A		
VIBLENT			R		
RUBIDID			R		
VITVINI					x
VITRIPA					
ASTPIP				O	
VERHAST				O	

Vitis vinifera

SPECIES CODE	LAYER 1	2	3	4	COL.
FRAVIRG					
CIRARVE					
ANTNOVA					
ASTERIC					
ASTLANC					
ASTAMET				R	x
BROININ					
SOLJUNC					
SOLCANA					
SOLGIGA					
late G-rod					
DAUCARO					
VICCRAC					
EUTGRAM					
PHLPRAT					
AMBARTE					
POAPRAT					
wild garlic					
PRUVULU					
DACGLOM					
SONARVE					
PHAARUN					
CAR-SP					
pickerel sedge					
JUN-SP					
BIDFRON					
ASTLAL					
CARVULP					
CAR-SP					
SOLNEMO					
ACHMIMI					

NEW

cool!! Amethyst aster! try ASTXAME

Page ..... of .....

- ditches running e-w, + wetter in southern end, also where "D"-shaped treed area once was.

ELC

MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC

WILDLIFE

SITE: Hamilton Block 2
POLYGON: 5
DATE:
SURVEYOR(S): AVB
START TIME:
END TIME:

TEMP (°C): 15 | CLOUD (10th): 6 | WIND: 3 | PRECIPITATION: Ø

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
L	monarch	OB	was tired	•					

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Hamilton Block 2		POLYGON: 6
	SURVEYOR(S): Rish Baron	DATE:	TIME: start / finish
	UTMZ: 17	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN. G ACIDIC BEDRK. G BASIC BEDRK. G CARB. BEDRK.	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION
SITE			**COVER**		
G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK			G OPEN G SHRUB G TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	4	3	
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER	X	YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	Marsh	MA
COMMUNITY SERIES:	Meadow marsh	MAM
ECOSITE:	mineral meadow marsh	MAMZ
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes: Tree cutting evident. Lots of ash, some elm.

ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

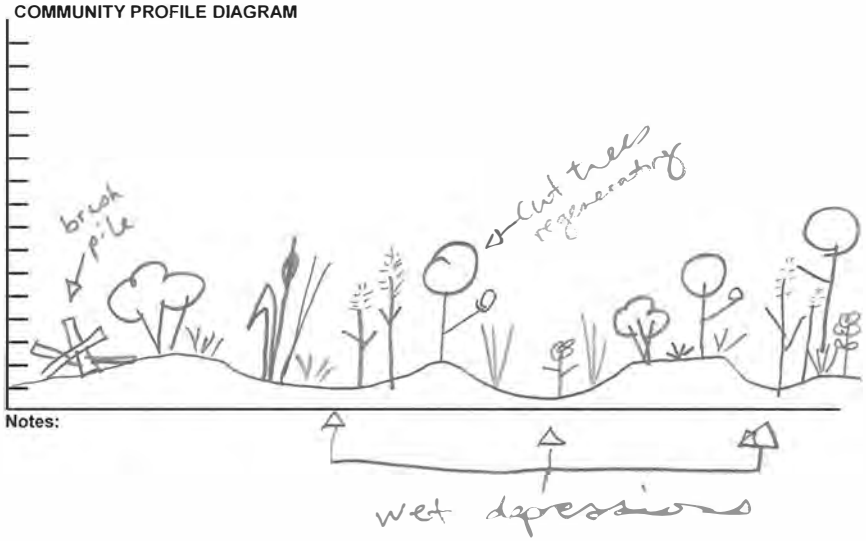
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC

SOILS ONTARIO

SITE:
POLYGON: 6
DATE:
SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Type	Class	UTM Z	EASTING	NORTHING
1									17	606553	4785588 ±2.4m
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON	A 8cm B 8-35 cm	Soil is difficult to auger through. Could only get 3 auger heads deep.			
A TEXTURE	SiCL				
COURSE FRAGMENTS	none				
B TEXTURE	SiC				
COURSE FRAGMENTS	none				
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS	none				
SURFACE ROCKINESS	none				
DEPTH TO / OF					
MOTTLES	10cm				
GLEY	none				
BEDROCK	>35cm				
WATER TABLE	>35cm				
CARBONATES	Y				
DEPTH OF ORGANICS	Ø				
PORE SIZE DISC #1	—				
PORE SIZE DISC #2	—				
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

Red clay

ELC PLANT SPECIES LIST

SITE: Hamilton Block 2
POLYGON: 6
DATE:
SURVEYOR(S): AWB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
FRAPENN	D	D	A		
ULMAMER		O	O	O	
FRANIGR	R				
SAL-SP					
CORRACE			A		
CRA-SP			R	O	
ROS-SP					
RUBALLE			R		
SAMCANA			R		
CORSTOL				R	
CARSTIP				O	
VITRIPA			O		
VERURTI			R		
teasel					
CARHYST				R	
POLPENN				R	
SOLGIGA				R	

(@ south end)

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
LYCUNI				A	
ASTLANC				D	
ASTNOVA				A	
SOLJUNC				O	
JUNTENU				A	
BIDFRON				O	
EUTGRAM				A	
PHAARUN				A	
GEUCANA				A	
CAR-SP				A	
VERHAST				A	
CARVULP				A	
CARBEBB				O	
EPI-				A	
AGR-SP				A	
ASTLALA				O	
FRAVIRG				O	
ACHMIMI				O	
PRUVULU				O	
path rush				O	
CAR-SP				O	
FRAVESC				O	
BIDFRON				O	
BIDCERN				O	
AMBARTE				O	
HYPPERF				R	
Woolgrass				R	
common cinquefoil				R	
POLPERS				R	
SOLDULC				O	
JUN-SP					

Wild crabapple near to where soil sample was taken

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ELC

MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC

WILDLIFE

SITE:
POLYGON:
DATE:
SURVEYOR(S):
START TIME: END TIME:

TEMP (ºC): CLOUD (10th): WIND: PRECIPITATION:

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Hamilton, Block 2		POLYGON: 7	
	SURVEYOR(S): Ash Baron	DATE: Sept 3 '15	TIME: start / finish	
	UTMZ: 17	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL	G ORGANIC	G LACUSTRINE	G NATURAL	G PLANKTON	G LAKE
G WETLAND	G MINERAL SOIL	G RIVERINE	G CULTURAL	G SUBMERGED	G POND
G AQUATIC	G PARENT MIN.	G BOTTOMLAND		G FLOATING-LVD.	G RIVER
	G ACIDIC BEDRK.	G TERRACE		G GRAMINOID	G STREAM
	G BASIC BEDRK.	G VALLEY SLOPE		G FORB	G MARSH
	G CARB. BEDRK.	G TABLELAND		G LICHEN	G SWAMP
SITE		G ROLL. UPLAND		G BRYOPHYTE	G FEN
G OPEN WATER		G CLIFF	**COVER**	G DECIDUOUS	G BOG
G SHALLOW WATER		G TALUS		G CONIFEROUS	G BARREN
G SURFICIAL DEP.		G CREVICE / CAVE	G OPEN	G MIXED	G MEADOW
G BEDROCK		G ALVAR	G SHRUB		G PRAIRIE
		G ROCKLAND	G TREED		G THICKET
		G BEACH / BAR			G SAVANNAH
		G SAND DUNE			G WOODLAND
		G BLUFF			G FOREST
					G PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	Cultural	CU
COMMUNITY SERIES:	Cultural thicket	CUT
ECOSITE:	Mineral Cultural Thicket	CUT1
VEGETATION TYPE:		
X INCLUSION		
COMPLEX		

Notes:

ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

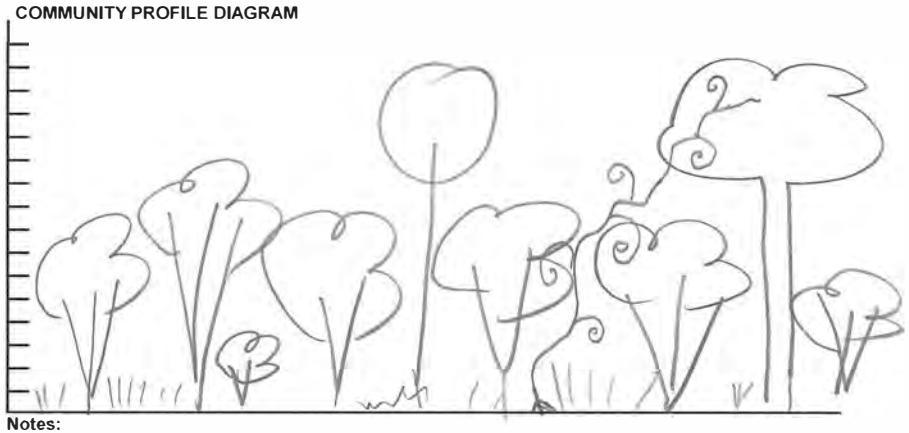
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC

SOILS ONTARIO

SITE:
POLYGON:
DATE:
SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Type	Class	Z	UTM EASTING	UTM NORTHING
1											
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON					
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC

PLANT SPECIES LIST

SITE: Hamilton Block 2
POLYGON: 7
DATE: Sept 3, 2015
SURVEYOR(S): AVB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
FRAPENN	O	R			
FRAAMER	R				
PYRCOMM	R				
CARONAT	R				
CORRACE			A		
RHACATH		D			
MALCORO		O			
CRA-SP		R	O		
CRAMACR			R		
LONTATA			R		
TOXRADI			A		
CRACOCC		R			
VITRIPA			A		
RUBALLE			A		

Cr-tanogi
coccinea
var.
coccinea

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
BROINN				A	
SOLJUNC				A	
DAUCARO				O	
ASTLANC				A	
CHRLEUC				R	
PLAMAJO				R	
ASTNOVA				O	
POAPRAT				R	
SOLCANA				O	
MELALBA				R	
Chickory				R	
SOLDULC				A	
PHMARUN				A	

Page ..... of .....

The school has been cutting too!?

ELC

MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC

WILDLIFE

SITE:
POLYGON:
DATE:
SURVEYOR(S):
START TIME: END TIME:

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Hamilton, Block 2		POLYGON: 8
	SURVEYOR(S): Ash Barun	DATE: Sept 3 '15	TIME: start / finish
	UTMZ: 17	UTME: 606365	UTMN: 4785441 ±3.5 m

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL	G ORGANIC	G LACUSTRINE	G NATURAL	G PLANKTON	G LAKE
G WETLAND	G MINERAL SOIL	G RIVERINE	G CULTURAL	G SUBMERGED	G POND
G AQUATIC	G PARENT MIN.	G BOTTOMLAND		G FLOATING-LVD.	G RIVER
	G ACIDIC BEDRK.	G TERRACE		G GRAMINOID	G STREAM
	G BASIC BEDRK.	G VALLEY SLOPE		G FORB	G MARSH
	G CARB. BEDRK.	G TABLELAND		G LICHEN	G SWAMP
		G ROLL. UPLAND		G BRYOPHYTE	G FEN
		G CLIFF		G DECIDUOUS	G BOG
		G TALUS		G CONIFEROUS	G BARREN
		G CREVICE / CAVE		G MIXED	G MEADOW
		G ALVAR			G PRAIRIE
		G ROCKLAND			G THICKET
		G BEACH / BAR			G SAVANNAH
		G SAND DUNE			G WOODLAND
		G BLUFF			G FOREST
					G PLANTATION

SITE	COVER
G OPEN WATER	G OPEN
G SHALLOW WATER	G SHRUB
G SURFICIAL DEP.	G TREED
G BEDROCK	

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	X	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	Swamp	SW
COMMUNITY SERIES:	Deciduous swamp	SWD
ECOSITE:	Ash mineral decid swamp	SWD2
VEGETATION TYPE:	Green Ash Mineral Deciduous Swamp	SWD2-2
INCLUSION		
COMPLEX		

Notes:

ELC STAND CHARACTERISTICS	SITE:
	POLYGON: X
	DATE:
	SURVEYOR(S):

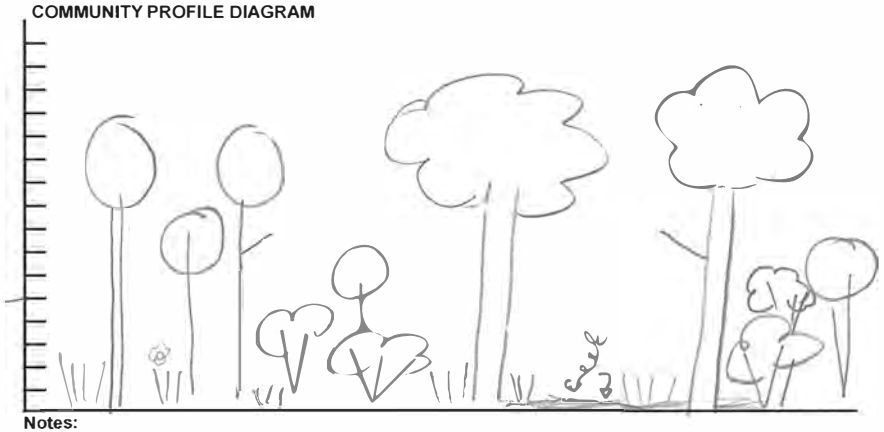
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC

SOILS ONTARIO

SITE:
POLYGON: 8
DATE:
SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Type	Class	UTM Z	EASTING	NORTHING
1									17	606365	4785441
2											
3											
4											
5											

±3.5m

SOIL	1	2	3	4	5
TEXTURE x HORIZON	A 0-65cm B 65-120cm				
A TEXTURE	SiC				
COURSE FRAGMENTS	none				
B TEXTURE	SiC (red)				
COURSE FRAGMENTS	none				
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS	none				
SURFACE ROCKINESS	none				
DEPTH TO / OF					
MOTTLES	30				
GLEY					
BEDROCK	>120				
WATER TABLE	>120				
CARBONATES	Y				
DEPTH OF ORGANICS	Ø				
PORE SIZE DISC #1	—				
PORE SIZE DISC #2	—				
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC PLANT SPECIES LIST

SITE: Hamilton Block 2
POLYGON: 8
DATE: Sept 3 2015
SURVEYOR(S): AVB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
FRAPENN	D	A	O	O	
RHACATH		D	A	D	
CORSTOL			O		
PARININ			O		

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
ALIPETI				A	
ASTLALA				O	
RANACRI				R	
ASTLANC				D	
FRAVESC				A	
CAR-SP				A	
HESMATR				O	
TAROFFI				O	
creeping Jenny				D	
gill-on-ground				A	
TMPCAPE				A	
LYTSALI				R	
PHAARUN				A	
CAR-SP				O	
EPI-SP				O	
BIDFRON				O	
RUMCRIS				R	
GEUCANA				O	

ELC

MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC

WILDLIFE

SITE:
POLYGON:
DATE:
SURVEYOR(S):
START TIME: END TIME:

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Block 2, Hamilton	POLYGON: 9	
	SURVEYOR(S): A. Baron	DATE: Sept 30 '15	TIME: start / finish
	UTMZ: 17	UTME: 607260	UTMN: 4785667 ± 3 m

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL	G ORGANIC	G LA CUSTRINE	G NATURAL	G PLANKTON	G LAKE
G WETLAND	G MINERAL SOIL	G RIVERINE	G CULTURAL	G SUBMERGED	G POND
G AQUATIC	G PARENT MIN.	G BOTTOMLAND		G FLOATING-LVD.	G RIVER
	G ACIDIC BEDRK.	G TERRACE		G GRAMINOID	G STREAM
	G BASIC BEDRK.	G VALLEY SLOPE		G FORB	G MARSH
	G CARB. BEDRK.	G TABLELAND		G LICHEN	G SWAMP
		G ROLL. UPLAND		G BRYOPHYTE	G FEN
		G CLIFF		G DECIDUOUS	G BOG
		G TALUS		G CONIFEROUS	G BARREN
		G CREVICE / CAVE		G MIXED	G MEADOW
		G ALVAR			G PRAIRIE
		G ROCKLAND			G THICKET
		G BEACH / BAR			G SAVANNAH
		G SAND DUNE			G WOODLAND
		G BLUFF			G FOREST
					G PLANTATION

SITE

G OPEN WATER
G SHALLOW WATER
G SURFICIAL DEP.
G BEDROCK

COVER

G OPEN
G SHRUB
G TREED

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR < 10% 2= 10 < CVR < 25% 3= 25 < CVR < 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

n/a

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:	x	PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

n/a

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		CU
COMMUNITY SERIES:		CUM
ECOSITE:		CUM1
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes: Church building has been taken down. Empty lot, some asphalt torn up.

ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

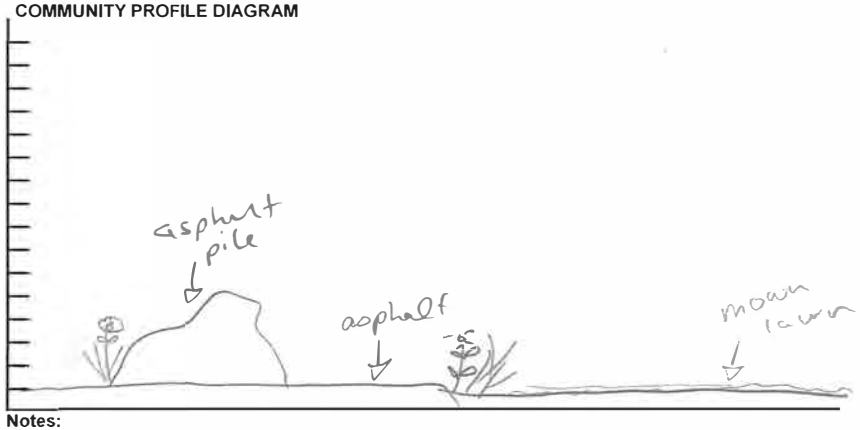
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC

SOILS ONTARIO

SITE:
POLYGON:
DATE:
SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Type	Class	Z	UTM EASTING	UTM NORTHING
1											
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON			N/G		
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC

PLANT SPECIES LIST

SITE: Block 2
POLYGON: 9
DATE: Sept 30 '15
SURVEYOR(S): AVB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
RHACATH		R			
ACENEGCI		R			

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
SOLCANA			D		
ASTLANC			A		
ASTNOVA			A		
CHLINTY			A		
LOTCORN				A	
DAUCARO			A		
POAPRAT				D	
BROINN			A	A	
ASTERIC			O		
MELALBA			O		
TAROFFI				O	
CHRLEUC				O	
SETPUMI				O	
FES_SP				A	
DIGSANG				O	

Page ..... of .....

ELC

MANAGEMENT / DISTURBANCE

SITE:
POLYGON: 9
DATE:
SURVEYOR(S):

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	N/A
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	N/A
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	N/A
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	N/A
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	9
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	N/A
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	0
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	2
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	2
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	4
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	N/A
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	N/A
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	N/A
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	N/A
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	N/A
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	N/A
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	—
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

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ELC

WILDLIFE

SITE: Block 2
POLYGON: 9
DATE:
SURVEYOR(S): AVB
START TIME:
END TIME:

TEMP (°C): 24 | CLOUD (10th): 2 | WIND: 1 | PRECIPITATION: 0

CONDITIONS: fair

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Block 2 - Hamilton	POLYGON: 10	
	SURVEYOR(S): Ash Baron	DATE: Sept 30 '15	TIME start / finish
	UTMZ: 17	UTME: 607128	UTMN: 4785647 ± 27m

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL	G ORGANIC	G LACUSTRINE	G NATURAL	G PLANKTON	G LAKE
G WETLAND	G MINERAL SOIL	G RIVERINE	G CULTURAL	G SUBMERGED	G POND
G AQUATIC	G PARENT MIN.	G BOTTOMLAND		G FLOATING-LVD.	G RIVER
	G ACIDIC BEDRK.	G TERRACE		G GRAMINOID	G STREAM
	G BASIC BEDRK.	G VALLEY SLOPE		G FORB	G MARSH
	G CARB. BEDRK.	G TABLELAND		G LICHEN	G SWAMP
SITE		G ROLL UPLAND	**COVER**	G BRYOPHYTE	G FEN
G OPEN WATER		G CLIFF	G OPEN	G DECIDUOUS	G BOG
G SHALLOW WATER		G TALUS	G SHRUB	G CONIFEROUS	G BARREN
G SURFICIAL DEP.		G CREVICE / CAVE	G TREED	G MIXED	G MEADOW
G BEDROCK		G ALVAR			G PRAIRIE
		G ROCKLAND			G THICKET
		G BEACH / BAR			G SAVANNAH
		G SAND DUNE			G WOODLAND
		G BLUFF			G FOREST
					G PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	QUEBICO=CARCAT>QUEALBA=QUEMACR
2	SUB-CANOPY	3	1	OSTVIRG
3	UNDERSTOREY	/	/	n/a
4	GRD. LAYER	7	4	POAPRAT>FES_SP>all others

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:		PIONEER		YOUNG	/	MID-AGE	/	MATURE		OLD GROWTH

SOIL ANALYSIS:

n/a

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	Cultural	CU
COMMUNITY SERIES:	Cultural Woodland	CUW
ECOSITE:	Mineral Cultural Woodland	CUW1
VEGETATION TYPE:	/	/
INCLUSION		
COMPLEX		

Notes: Mown lawn under trees. Community likely reflects what was once in woodland G. (Slough oak forest?)

* only known natural record of Pin Oak in Hamilton!

ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

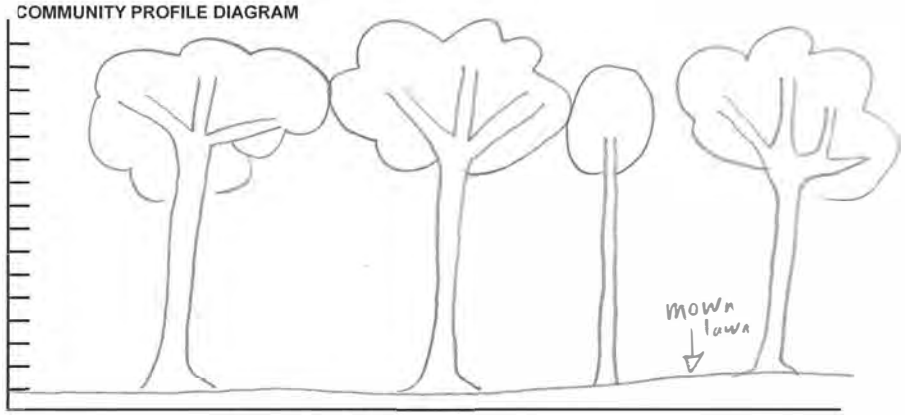
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC

SOILS ONTARIO

SITE:
POLYGON:
DATE:
SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Type	Class	Z	UTM EASTING	UTM NORTHING
1											
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON			n/a	b/c is cultural.	
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

UTMs

QUEPALU: 607022,478546

ELC

PLANT SPECIES LIST

SITE: Block 2
POLYGON: 10
DATE: Sept 30 2015
SURVEYOR(S): A. Sorin

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
QUEALBA	A				
QUERUBR	O				
QUEMACR	A				
ACERUBR	A				
TILAMER	O				
CARONAT	A				
OSTVIRG		R			
QUEBICO	A				
FRAPENN	O				
QUE x SCHU	O				x
QUEPALU	R				x *

hybrid b/w swamp white + burr oak

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
POAPRAT				D	
FES_SP				D	
TAROFFI				O	
LOTCORN				O	
DAUCARO				O	
CHIINTY				O	
DIGSANG				R	
~~Am~~ SOLCANA				O	

ELC

MANAGEMENT / DISTURBANCE

SITE:
POLYGON: 10
DATE:
SURVEYOR(S):

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	2
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	6
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	0
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	1
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	4
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	1
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

total: 14

ELC

WILDLIFE

SITE: Block 2
POLYGON: 10
DATE:
SURVEYOR(S):
START TIME: END TIME:

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
M	grey squirrel	OB		1					

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

Appendix B: Annotated List of Flora

Species		Rank							Introduced (o=no, I=yes)	Vegetation Community									
Scientific Name	Common Names	Coefficient Conservation	Coefficient Wetness	COSEWIC	COSSARO	Global Rank	S Rank	Hamilton		Polygon 1	Polygon 2	Polygon 3	Polygon 4	Polygon 5	Polygon 6	Polygon 7	Polygon 8	Polygon 9	Polygon 10
Acer negundo	Manitoba Maple	0	-2			G5	S5		0		X							X	
Acer platanoides	Norway Maple	0	5			G?	SE5		I		X								
Acer rubrum	Red Maple	4	0			G5	S5		0										X
Achillea millefolium ssp. millefolium	Common Yarrow	0	3			G5	SE		I				X	X	X				
Agrimonia sp	Agrimony Species								0						X				
Alisma plantago-aquatica	Common Water-plantain	3	-5			G5	S5		0		X								
Alliaria petiolata	Garlic Mustard	0	0			G?	SE5		I		X	X					X		
Allium canadense var. canadense	Wild Garlic	8	3			G5	S5		0					X					
Ambrosia artemisiifolia	Common Ragweed	0	3			G5	S5		0				X		X				
Arctium minus ssp. minus	Common Burdock	0	5			G?	SE5		I			X							
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit	5	-2			G5	S5		0	X									
Asclepias syriaca	Common Milkweed	0	5			G5	S5		0				X						
Aster puniceus var. puniceus	Purple-stem Aster	6	-5			G5	S5		0	X	X								
Aster X amethystinus	Amethyst Aster	0	0			GNA	SNA		0					X					
Bidens cernua	Nodding Beggar-ticks	2	-5			G5	S5		0						X				
Bidens frondosa	Devil's Beggar-ticks	3	-3			G5	S5		0	X	X			X	X		X		
Bromus inermis ssp. inermis	Smooth Brome	0	5			G4G5	SE5		I		X	X	X		X			X	
Carex arctata	Drooping Wood Sedge	5	5			G5?	S5		0			X							
Carex bebbii	Bebb's Sedge	3	-5			G5	S5		0		X	X			X				
Carex gracillima	Graceful Sedge	4	3			G5	S5		0			X							
Carex hirsutella	Hairy Green Sedge	8	5			G5	S3	Not ranked	0	X									
Carex hystericina	Porcupine Sedge	5	-5			G5	S5		0						X				
Carex projecta	Necklace Sedge	5	-4			G5	S5		0					X					
Carex rosea	Stellate Sedge	5	5			G5	S5		0			X							
Carex sp	Sedge Species								0			X		X	X		X		
Carex stipata	Awl-fruited Sedge	3	-5			G5	S5		0						X				
Carex vulpinoidea	Fox Sedge	3	-5			G5	S5		0	X	X	X		X	X				
Carya cordiformis	Bitternut Hickory	6	0			G5	S5		0	X		X							
Carya ovata	Shagbark Hickory	6	3			G5	S5		0	X		X				X			X
Chenopodium album var. album	Lamb's Quarters	0	1			G5	SE5		I		X								
Chrysanthemum leucanthemum	Ox-eye Daisy	0	5			G?	SE5		I				X			X		X	

Species		Rank							Introduced (o=no, I=yes)	Vegetation Community									
Scientific Name	Common Names	Coefficient Conservation	Coefficient Wetness	COSEWIC	COSSARO	Global Rank	S Rank	Hamilton		Polygon 1	Polygon 2	Polygon 3	Polygon 4	Polygon 5	Polygon 6	Polygon 7	Polygon 8	Polygon 9	Polygon 10
Cichorium intybus	Chicory	0	5			G?	SE5		I	X						X		X	X
Circaea lutetiana ssp. canadensis	Canada Enchanter's Nightshade	3	3			G5	S5		0			X							
Cirsium arvense	Canada Thistle	0	3			G?	SE5		I	X			X	X					
Cirsium vulgare	Bull Thistle	0	4			G5	SE5		I				X						
Convolvulus arvensis	Field Bindweed	0	5			G?	SE5		I		X								
Cornus foemina ssp. racemosa	Grey Dogwood	2	-2			G5	S5		0	X		X	X	X	X	X			
Cornus stolonifera	Red-osier Dogwood	2	-3			G5	S5		0	X	X				X		X		
Crataegus macracantha	Long-spined Hawthorn	4	5			G?	S5		0		X	X	X			X			
Crataegus sp	Hawthorn Species								0		X	X	X		X	X			
Dactylis glomerata	Orchard Grass	0	3			G?	SE5		I		X			X					
Daucus carota	Wild Carrot	0	5			G?	SE5		I	X			X	X		X		X	X
Digitaria sanguinalis	Large Crabgrass	0	3			G5	SE5		I									X	X
Dipsacus fullonum ssp. sylvestris	Common Teasel	0	5			G?	SE5		I				X		X				
Elaeagnus angustifolia	Russian Olive	0	4			G?	SE3		I					X					
Epilobium parviflorum	Small-flowered Willow-herb	0	3			G?	SE4		I	X									
Epilobium sp	Willow-herb Species								0						X		X		
Eupatorium maculatum ssp. maculatum	Spotted Joe-pye-weed	3	-5			G5	S5		0		X								
Euthamia graminifolia	Grass-leaved Goldenrod	2	-2			G5	S5		0	X	X			X	X				
Festuca sp	Fescue Species								0									X	X
Fragaria vesca ssp. americana	Woodland Strawberry	4	4			G5	S5		0						X		X		
Fragaria virginiana ssp. virginiana	Common Strawberry	2	1			G5	S5		0			X	X	X	X				
Fraxinus americana	White Ash	4	3			G5	S5		0					X		X			
Fraxinus nigra	Black Ash	7	-4			G5	S5		0			X			X				
Fraxinus pennsylvanica	Red Ash	3	-3			G5	S5		0	X	X	X	X	X	X	X	X		X
Geranium maculatum	Spotted Crane's-bill	6	3			G5	S5		0	X									
Geum aleppicum	Yellow Avens	2	-1			G5	S5		0		X	X	X						
Geum canadense	White Avens	3	0			G5	S5		0		X				X		X		
Glechoma hederacea	Ground Ivy	0	3			G?	SE5		I								X		
Glyceria striata	Fowl Manna Grass	3	-5			G5	S5		0		X								
Hesperis matronalis	Dame's Rocket	0	5			G4G5	SE5		I								X		
Hypericum perforatum	Common St. John's-wort	0	5			G?	SE5		I						X				
Hypericum punctatum	Spotted St. John's-wort	5	-1			G5	S5		0			X	X						

Species		Rank							Introduced (o=no, I=yes)	Vegetation Community									
Scientific Name	Common Names	Coefficient Conservation	Coefficient Wetness	COSEWIC	COSSARO	Global Rank	S Rank	Hamilton		Polygon 1	Polygon 2	Polygon 3	Polygon 4	Polygon 5	Polygon 6	Polygon 7	Polygon 8	Polygon 9	Polygon 10
Impatiens capensis	Spotted Touch-me-not	4	-3			G5	S5		0	X	X						X		
Juglans nigra	Black Walnut	5	3			G5	S4		0		X								
Juncus sp	Rush Species								0					X					
Juncus tenuis	Path Rush	0	0			G5	S5		0						X				
Juniperus virginiana	Eastern Red Cedar	4	3			G5	S5		0					X					
Leersia oryzoides	Rice Cut Grass	3	-5			G5	S5		0		X								
Ligustrum vulgare	Common Privet	0	1			G?	SE5		I					X					
Linaria vulgaris	Butter-and-eggs	0	5			G?	SE5		I				X						
Lonicera tatarica	Tartarian Honeysuckle	0	3			G?	SE5		I		X	X				X			
Lotus corniculatus	Bird's-foot Trefoil	0	1			G?			I									X	X
Lycopus uniflorus	Northern Water-horehound	5	-5			G5	S5		0		X								
Lysimachia nummularia	Moneywort	0	-4			G?	SE5		I								X		
Lythrum salicaria	Purple Loosestrife	0	-5			G5	SE5		I		X						X		
Malus coronaria	Wild Crabapple	5	5			G5	S4		0					X		X			
Malus pumila	Common Apple	0	5			G5	SE5		I				X	X					
Melilotus alba	White Sweet-clover	0	3			G5	SE5		I							X		X	
Oenothera biennis	Common Evening-primrose	0	3			G5	S5		0		X								
Ostrya virginiana	Hop Hornbeam	4	4			G5	S5		0										X
Oxalis stricta	Upright Yellow Wood-sorrel	0	3			G5	S5		0			X							
Parthenocissus inserta	Thicket Creeper	3	3			G5	S5		0	X	X	X					X		
Phalaris arundinacea	Reed Canary Grass	0	-4			G5	S5		0	X	X		X	X	X	X	X		
Phleum pratense	Timothy	0	3			G?	SE5		I	X			X	X					
Phragmites australis	Common Reed	0	-4			G5	S5		0	X									
Pinus strobus	Eastern White Pine	4	3			G5	S5		0	X									
Plantago major	Common Plantain	0	-1			G5	SE5		I							X			
Poa palustris	Fowl Blue Grass	5	-4			G5	S5		0		X								
Poa pratensis ssp. pratensis	Kentucky Blue Grass	0	1			G?	S5		0				X			X		X	X
Poa sp	Blue Grass Species								0	X									
Polygonatum pubescens	Hairy Solomon's Seal	5	5			G5	S5		0	X									
Polygonum persicaria	Lady's Thumb	0	-3			G?	SE5		I						X				
Populus tremuloides	Trembling Aspen	2	0			G5	S5		0			X							
Potentilla simplex	Common Cinquefoil	3	4			G5	S5		0						X				

Species		Rank							Introduced (o=no, I=yes)	Vegetation Community									
Scientific Name	Common Names	Coefficient Conservation	Coefficient Wetness	COSEWIC	COSSARO	Global Rank	S Rank	Hamilton		Polygon 1	Polygon 2	Polygon 3	Polygon 4	Polygon 5	Polygon 6	Polygon 7	Polygon 8	Polygon 9	Polygon 10
Prunella vulgaris ssp. vulgaris	Selfheal	0	0			G5	SE3		I		X	X		X	X				
Prunus virginiana ssp. virginiana	Choke Cherry	2	1			G5	S5		0	X		X		X					
Pyrus communis	Common Pear	0	5			G5	SE4		I							X			
Quercus alba	White Oak	6	3			G5	S5		0	X		X							X
Quercus bicolor	Swamp White Oak	8	-4			G5	S4		0			X		X					X
Quercus macrocarpa	Bur Oak	5	1			G5	S5		0										X
Quercus palustris	Pin Oak	9	-3			G5	S4	Not Ranked	0										X
Quercus rubra	Red Oak	6	3			G5	S5		0	X		X		X					X
Quercus x schuettei	Schuette's Oak	-	-	-	-	GNA	SNA		0										X
Ranunculus acris	Tall Buttercup	0	-2			G5	SE5		I								X		
Rhamnus cathartica	Common Buckthorn	0	3			G?	SE5		I		X	X	X	X		X	X	X	
Rhus radicans ssp. negundo	Climbing Poison-ivy	5	-1			G5	S5		0	X	X	X		X		X			
Rhus typhina	Staghorn Sumac	1	5			G5	S5		0				X	X					
Ribes americanum	Wild Black Currant	4	-3			G5	S5		0		X								
Robinia pseudo-acacia	Black Locust	0	4			G5	SE5		I		X								
Rosa multiflora	Multiflora Rose	0	3			G?	SE4		I				X	X					
Rosa sp	Rose Species								0			X			X				
Rubus allegheniensis	Common Blackberry	2	2			G5	S5		0				X		X	X			
Rubus hispidus	Swamp Dewberry	6	-3			G5	S4S5		0			X							
Rubus idaeus ssp. idaeus	Red Raspberry	0	5			G5	SE1		I					X					
Rumex crispus	Curly Dock	0	-1			G?	SE5		I								X		
Salix sp	Willow Species								0	X					X				
Salix X rubens	Hybrid White Willow	0	-4			G?	SE4		I		X								
Sambucus canadensis	Common Elderberry	5	-2			G5	S5		0						X				
Scirpus atrovirens	Black Bulrush	3	-5			G5?	S5		0		X								
Scirpus cyperinus	Wool Grass	4	-5			G5	S5		0	X					X				
Scirpus sp	Bulrush Species								0		X								
Setaria pumila	Yellow Foxtail	0	0			G?	SE5		I									X	
Solanum dulcamara	Bittersweet Nightshade	0	0			G?	SE5		I	X	X				X	X			
Solidago canadensis var. canadensis	Canada Goldenrod	1	3			G5	S5		0	X	X	X	X	X		X		X	X
Solidago gigantea	Giant Goldenrod	4	-3			G5	S5		0	X			X	X	X				

Species		Rank							Introduced (o=no, I=yes)	Vegetation Community									
Scientific Name	Common Names	Coefficient Conservation	Coefficient Wetness	COSEWIC	COSSARO	Global Rank	S Rank	Hamilton		Polygon 1	Polygon 2	Polygon 3	Polygon 4	Polygon 5	Polygon 6	Polygon 7	Polygon 8	Polygon 9	Polygon 10
Solidago juncea	Early Goldenrod	3	5			G5	S5		0			X	X	X	X	X			
Solidago nemoralis ssp. nemoralis	Gray Goldenrod	2	5			G5	S5		0					X					
Symphyotrichum ericoides var. ericoides	Heath Aster	4	4			G5	S5		0				X	X				X	
Symphyotrichum lanceolatum var. lanceolatum	Panicled Aster	3	-3			G5	S5		0	X	X	X	X	X	X	X	X	X	
Symphyotrichum lateriflorum var. lateriflorum	One-sided Aster	3	-2			G5	S5		0	X	X	X		X	X		X		
Symphyotrichum novae-angliae	New England Aster	2	-3			G5	S5		0	X	X	X	X	X	X	X		X	
Symphyotrichum pilosum var. pilosum	Hairy Aster	4	2			G5	S5		0					X					
Taraxacum officinale	Common Dandelion	0	3			G5	SE5		I	X							X	X	X
Tilia americana	Basswood	4	3			G5	S5		0										
Typha angustifolia	Narrow-leaved Cattail	3	-5			G5	S5		0	X									
Typha latifolia	Broad-leaved Cattail	3	-5			G5	S5		0		X								
Ulmus americana	White Elm	3	-2			G5?	S5		0	X	X	X	X	X	X				
Valeriana officinalis	Common Valerian	0	0			GNR	SNA		I			X							
Verbena hastata	Blue Vervain	4	-4			G5	S5		0	X	X			X	X				
Verbena urticifolia	White Vervain	4	-1			G5	S5		0		X				X				
Viburnum cassinoides	Wild Raisin	7	-3			G5	S5		0			X							
Viburnum lentago	Nannyberry	4	-1			G5	S5		0					X					
Viburnum opulus	European Highbush Cranberry	0	0			G5	SE4		I	X	X								
Vicia cracca	Cow Vetch	0	5			G?	SE5		I										
Vitis riparia	Riverbank Grape	0	-2			G5	S5		0		X	X		X	X	X			
Xanthium strumarium	Cocklebur	2	0			G?	S5		0		X								

Appendix C: Breeding Bird Survey Field Sheets

Natural Area: (Name & No.)	Area 1
Date: June 4th 2015	Investigators: Jeff Thompson
Total Time: 6:15am 6:26am	
Size:	Cultural Meadow
Veg.Unit No.:	Airphoto No.: / Topo Map No.:

Species	Trees dbh	*Abundance	+Dispersion	Canopy Close
Cultural meadow				General Description:

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Ground Cover	Abundance	Dispersion	General Description
Snags			
Rotting logs			
Rock outcrops			
Bare grounds			
Pools			
Streams			

Soils		Moisture Degree		Temperature		Topography - draw C.S. of unit
Rock		Dry		Colder		
Sand		Mesic		Normal		
Loam		Wet		Warmer		
Clay		Standing Water				
Organics						

Disturbance	Human Disturbance	Transition Edge	% Non-native cover O U H
Last cut/agr.	# local # extensive	Present Absent	

Plant Species	
Name	Name
House sparrow MS	
RWBB MS	
Cardinal MS	
Starling	
Song Sparrow MS	
Chipping MS	
Robin MS	

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Natural Area: (Name & No.) #2			
Date: June 4		**Investigators:** Jeff Thompson	
Total Time: 6:30 - 6:40		9°C	
Size: Cultural Shrub Meadow		Clear / Calm	
Veg.Unit No.: #2	**Airphoto No.:**		**Topo Map No.:** Co

Species	Trees dbh	*Abundance	+Dispersion	Canopy Close
				General Description:

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Ground Cover	Abundance	Dispersion	General Description
Snags			
Rotting logs			
Rock outcrops			
Bare grounds			
Pools			
Streams			

Soils		Moisture Degree		Temperature		Topography - draw C.S. of unit
Rock		Dry		Colder		
Sand		Mesic		Normal		
Loam		Wet		Warmer		
Clay		Standing Water				
Organics						

Disturbance	Human Disturbance	Transition Edge	% Non-native cover O U H
Last cut/agr.	# local # extensive	Present Absent	

Plant Species	
Name	Name
Chipping MS	
Song MS	
Bobolink MS	
RWBB MS	
Northern Cardinal	
✓ Goldfinch MS	
Ring Billed ~~Herring~~ Gull	
Starling	
Crow	

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Natural Area: (Name & No.)	#3
Date:	Investigators: Jeff Thompson
Total Time:	6:42 - 6:48 am
Size:	Cultured Meadow
Veg.Unit No.:	Airphoto No.: / Topo Map No.:

Species	Trees dbh	*Abundance	*Dispersion	Canopy Close
				General Description:

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Ground Cover	Abundance	Dispersion	General Description
Snags			
Rotting logs			
Rock outcrops			
Bare grounds			
Pools			
Streams			

Soils		Moisture Degree		Temperature		Topography - draw C.S. of unit
Rock		Dry		Colder		
Sand		Mesic		Normal		
Loam		Wet		Warmer		
Clay		Standing Water				
Organics						

Disturbance	Human Disturbance	Transition Edge	% Non-native cover O U H
Last cut/agr.	# local # extensive	Present Absent	

Plant Species

Name	Name
Yellow Warbler MS	Least Fly catcher MS
Song Sparrow MS	Canada Geese
House Sparrow MS	
RWBB MS	
Saber Field Sparrow MS	
Starling	
Herring Ring Bill Gull	
Robin MS	
Crow	

Natural Area: (Name & No.)

Date: June 4th | Investigators: Jeff Thompson

Total Time: 6:51 - 6:55

Size:

Veg.Unit No.: #4 | Airphoto No.: | Topo Map No.:

Species	Trees			Canopy Close
	dbh	*Abundance	+Dispersion	General Description:

Species	Shrub/Saplings/Vines			General Description
	ht	Abundance	Dispersion	

Species	Dominant Herbs		General Description
	Abundance	Dispersion	

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Ground Cover	Abundance	Dispersion	General Description
Snags			
Rotting logs			
Rock outcrops			
Bare grounds			
Pools			
Streams			

Soils		Moisture Degree		Temperature		Topography - draw C.S. of unit
Rock		Dry		Colder		
Sand		Mesic		Normal		
Loam		Wet		Warmer		
Clay		Standing Water				
Organics						

Disturbance	Human Disturbance	Transition Edge	% Non-native cover O U H
Last cut/agr.	# local # extensive	Present Absent	

Plant Species	
Name	Name
Cardinal MS	
Yellow warbler MS	
Song MS	
RWBB MS	
Starling MS	
Robin MS	
Chipping MS	

Forms\species2.frm

Natural Area: (Name & No.)			
Date: June 4		**Investigators:** Jeff Thompson	
Total Time: Shrub Thicket Buck Thorn			
Size: 6:58 – 7:07 am			
Veg.Unit No.: #5	**Airphoto No.:**		**Topo Map No.:**

Species	Trees			Canopy Close
	dbh	*Abundance	*Dispersion	
				General Description:

Species	Shrub/Saplings/Vines			General Description
	ht	Abundance	Dispersion	

Species	Dominant Herbs		General Description
	Abundance	Dispersion	

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Ground Cover	Abundance	Dispersion	General Description
Snags			
Rotting logs			
Rock outcrops			
Bare grounds			
Pools			
Streams			

Soils		Moisture Degree		Temperature		Topography - draw C.S. of unit
Rock		Dry		Colder		
Sand		Mesic		Normal		
Loam		Wet		Warmer		
Clay		Standing Water				
Organics						

Disturbance	Human Disturbance	Transition Edge	% Non-native cover O U H
Last cut/agr.	# local # extensive	Present Absent	

Plant Species	
Name	Name
Catbird MS	
Yellow Warbler MS	
Song Sparrow MS	
Cardinal MS	
Gold finch MS	
Least Fly catcher MS	
Robin MS	
RWBB MS	
Morning dove MS	

Natural Area: (Name & No.)			
Date:	June 4, 2015	**Investigators:**	Jeff Thompson
Total Time:	Cultural Field Ticket		
Size:	7:20 – 7:30		
Veg.Unit No.:	#6	**Airphoto No.:**	**Topo Map No.:**

Species	Trees			Canopy Close
	dbh	*Abundance	*Dispersion	
				General Description:

Species	Shrub/Saplings/Vines			General Description
	ht	Abundance	Dispersion	

Species	Dominant Herbs		General Description
	Abundance	Dispersion	

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Ground Cover	Abundance	Dispersion	General Description
Snags			
Rotting logs			
Rock outcrops			
Bare grounds			
Pools			
Streams			

Soils		Moisture Degree		Temperature		Topography - draw C.S. of unit
Rock		Dry		Colder		
Sand		Mesic		Normal		
Loam		Wet		Warmer		
Clay		Standing Water				
Organics						

Disturbance	Human Disturbance	Transition Edge	% Non-native cover O U H
Last cut/agr.	# local # extensive	Present Absent	

Plant Species	
Name	Name
Tree swallow	
Least Fly catcher MS	
Bobolink MS	
Cedar Waxwings	
Chipping MS	
Song Sparrow	
Yellow warbler	
Robin	
RWBB M Territory	
Common Flicker MS	

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Natural Area: (Name & No.)		
Date: June 4, 2015	**Investigators:** Jeff Thompson	
Total Time:		
Size:		
Veg.Unit No.: #7	**Airphoto No.:**	**Topo Map No.:**

Species	Trees			Canopy Close
	dbh	*Abundance	*Dispersion	
				General Description:

Species	Shrub/Saplings/Vines			General Description
	ht	Abundance	Dispersion	

Species	Dominant Herbs		General Description
	Abundance	Dispersion	

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Ground Cover	Abundance	Dispersion	General Description
Snags			
Rotting logs			
Rock outcrops			
Bare grounds			
Pools			
Streams			

Soils		Moisture Degree		Temperature		Topography - draw C.S. of unit
Rock		Dry		Colder		
Sand		Mesic		Normal		
Loam		Wet		Warmer		
Clay		Standing Water				
Organics						

Disturbance	Human Disturbance	Transition Edge	% Non-native cover O U H
Last cut/agr.	# local # extensive	Present Absent	

Plant Species	
Name	Name

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Natural Area: (Name & No.)	#1		
Date:	June 18, 2015	**Investigators:**	Jeff Thompson
Total Time:	6:20am 6:29		
Size:	Block 2		
Veg.Unit No.:	**Airphoto No.:**	**Topo Map No.:**	

Species	Trees dbh	*Abundance	*Dispersion	Canopy Close
				General Description:
Crow				
Starling MS				
~~Herring~~ Gull Ring Bill				
MS Song sparrow				
MS Savanna Sparrow	MS			
Barn Swallow				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Natural Area: (Name & No.) #2		
Date: June 18, 2015	Investigators:	
Total Time: 6:30 am 6:39		
Size:		
Veg.Unit No.:	Airphoto No.:	Topo Map No.:

Species	Trees dbh	*Abundance	*Dispersion	Canopy Close
MS Yellow warblers				General Description:
MS Chipping Sparrow				
MS RWBB				
Crow				
MS Sahvanna sparrow				
MS Yellow Throat				
MS Bobolink				
MS Goldfinch				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Natural Area: (Name & No.)	#3		
Date:	June 18, 2015	Investigators:	Jeff Thompson
Total Time:	6:40 6:48		
Size:			
Veg.Unit No.:	Airphoto No.:	Topo Map No.:	

Species	Trees dbh	*Abundance	*Dispersion	Canopy Close
MS Cippingsparrow				General Description:
MS Sahannah Sparrow				
MS Cardinal				
RW BB MS				
MS House wren				
MS Robin				
Morning Dove				
RB Gull Flight				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Natural Area: (Name & No.)	#4		
Date:	June 18, 2015	Investigators:	Jeff Thompson
Total Time:	6:52 6:59		
Size:			
Veg.Unit No.:	Airphoto No.:	Topo Map No.:	

Species	Trees dbh	*Abundance	*Dispersion	Canopy Close
cedar wax wings				General Description:
MS Mourning Dove				
MS RW BB				
MS Song Sparrow				
MS Cardinal				
MS Robin				
Swallow				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description
MS Chipping Sparrow				
M Barn Swallow				

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Natural Area: (Name & No.)	#5
Date:	June 18th, 2015
Investigators:	Jeff Thompson
Total Time:	7:03 7:14
Size:	Overcast High Cloud
Veg.Unit No.:	
Airphoto No.:	
Topo Map No.:	

Species	Trees dbh	*Abundance	*Dispersion	Canopy Close
2 Male Gold finch Fight				General Description:
Morning dove				
MS Field Sparrow				
MS Yellow Warble				
MS Yellow Throat				
MS Cardinal				
M+F Pair RWBB				
MS Song Sparrow				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description
Robin				
MS Cat Bird				
2 Cotton Tails				

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Natural Area: (Name & No.)	#6		
Date:	June 18th, 2015	Investigators:	Jeff Thompson
Total Time:	7:19 - 7:29		
Size:			
Veg.Unit No.:	Airphoto No.:	Topo Map No.:	

Species	Trees dbh	*Abundance	+Dispersion	Canopy Close
M+F nesting Brown headed Cowbird				General Description:
NS Common Yellow Throat				
NS Cedar Waxwing				
NS Warbling Vireo				
NS Song Sparrow				
M Robin				
M Cardinal				
Malards Flight				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description
NS Field Sparrow				
Flight Ring Bill Gull				
M Barn swallow				
Tree Swallow				
NS Gold finch				
Starling				

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Natural Area: (Name & No.)	#7
Date:	June 18, 2015
Investigators:	Jeff Thompson
Total Time:	7:32- 7:42
Size:	
Veg.Unit No.:	area 2 Hamilton
Airphoto No.:	
Topo Map No.:	

Species	Trees dbh	*Abundance	*Dispersion	Canopy Close
MS RWBB				General Description:
MS Song Sparrow				
Flight Robin				
Flight RB Gull				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Natural Area: (Name & No.)	#1		
Date:	July 8, 2015	Investigators:	Jeff Thompson High Cloud Cover
Total Time:	6:07 am 6:14 Sunny Slight Breeze East	Gusting 10 Km/hr	
Size:			
Veg.Unit No.: #1	Airphoto No.:	Topo Map No.:	

Species	Trees dbh	*Abundance	+Dispersion	Canopy Close
Song Sparrow M5				General Description:
Ring Bill Gull F				
Starling F				
Barn Swallow F				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

Natural Area: (Name & No.)	Block 2		
Date:	July 8, 2015	Investigators:	Jeff Thompson
Total Time:	6:16 am 6:21 am		
Size:			
Veg.Unit No.:	#2	Airphoto No.:	Topo Map No.:

Species	Trees dbh	*Abundance	+Dispersion	Canopy Close
Robin F				
RWBB F				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

Veg.Unit Species2.frm

Biz Biz Zup Zup Zup dip
Dick Sessel

Towhee?

Ground Cover	Abundance	Dispersion	General Description
Snags			
Rotting logs			
Rock outcrops			
Bare grounds			
Pools			
Streams			

Soils		Moisture Degree		Temperature		Topography - draw C.S. of unit
Rock		Dry		Colder		
Sand		Mesic		Normal		
Loam		Wet		Warmer		
Clay		Standing Water				
Organics						

Disturbance	Human Disturbance	Transition Edge	% Non-native cover O U H
Last cut/agr.	# local # extensive	Present Absent	

6:45

Plant Species

Name		Name	
Crow	Song Sparrow		
Field Sparrow	Savanna Sparrow		Chipping Sparrow
Yellow Warbler			
BBee Tut Tut Tut tut	Zup Zup		
	Spadrow		
Willow Fly catcher			
Cat Bird	RWBB		
GolRfich			
House wren			

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Natural Area: (Name & No.)

Date: July 8, 2015	Investigators: Jeff Thompson
Total Time: 6:23 - 6:29 am	

Size:

Veg.Unit No.: # 3	Airphoto No.:	Topo Map No.:

Species	Trees ht	*Abundance	+Dispersion	Canopy Close
Sahvanna sparrow SM				General Description: Ring Billoverhead
RWBB SM				
Song Sparrow SM				
Gold Finch SM				
Robin SM				
Morning Dove Flight				
Cardinal SM				
Starling F				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

Natural Area: (Name & No.)	Block 2
Date:	July 8, 2015
Investigators:	Jeff Thompson
Total Time:	6:31 – 6:36 am
Size:	
Veg.Unit No.:	#4
Airphoto No.:	
Topo Map No.:	

Species	Trees dbh	*Abundance	*Dispersion	Canopy Close
Cardinal MS				General Description:
Robin MS				
Song Sparrow MS				
RWBB MS				
Territorial				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description

Species	Abundance	Dispersion	General Description

* Abundance:	* Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

Natural Area: (Name & No.)	Block 2		
Date:	July 8, 2015	Investigators:	Jeff Thompson
Total Time:	6:40 am - 6:47 am		
Size:			
Veg.Unit No.:	II5	Airphoto No.:	Topo Map No.:

Species	Trees dbh	*Abundance	*Dispersion	Canopy Close
8 Barn swallows Feeding				General Description:
Song sparrow ns				
cat bird ns				
RWBB ns				
Cardinal ns				
Tree swallow Feeding				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description
Cotton tail Rabbits 3				

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	* Dispersion:	* Ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

Natural Area: (Name & No.)	Block 2		
Date:	July 8, 2015	Investigators:	Jeff Thompson
Total Time:	6:50am 6:58am		
Size:			
Veg.Unit No.:	#6	Airphoto No.:	Topo Map No.:

Species	Trees			Canopy Close
Barn swallow Pot. Nest site				General Description:
Entering Building				
RWBB Ad + Young				
Song Sparrow MS				
Yellow warbler MS				
Robin M				
Gold finch MS				
Morning Dove				

Species	Shrub/Saplings/Vines			General Description
	Ht	Abundance	Dispersion	

Species	Dominant Herbs		General Description
	Abundance	Dispersion	

D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Natural Area: (Name & No.) Block 2

Date: July 8 2015 | Investigators: Jeff Thompson

Total Time: 7:00 - 7:12

Size:

Veg.Unit No.: | Airphoto No.: | Topo Map No.:

Species	Trees dbh	*Abundance	+Dispersion	Canopy Close
MS Song Sparrow				General Description:
Robin MS				
morning Dove MS				

Species	Shrub/Saplings/Vines ht	Abundance	Dispersion	General Description

Species	Dominant Herbs Abundance	Dispersion	General Description

* Abundance:	+ Dispersion:	ht
D = Dominant (51-100% coverage)	S = Scattered	1 = 0-1 m
A = Abundant (21-50% coverage)	P = Pure Stand	2 = 1-2 m
F = Frequent (11-20% coverage)	Pk = Pockets	3 = > 2 m
P = Present (<10% coverage)		

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Appendix D: Amphibian Calling Survey Field Sheets

Marsh Monitoring Program - Amphibian Data Form

Return by 31 July

Please write legibly (in pen).

MARSH MONITORING PROGRAM

VISIT INFORMATION

Route #: — Route Name: BLOCK 2 Station (~~A - H~~): 1-7

Observer #: — Observer Name: L. KARLEWICZ

Visit #: 2 Day: 21 Month: MAY Year: 2015

Cloud Cover (10th): START 10 END 0 Temperature (°C or °F): START 14°C END 14°C Beaufort Wind Scale (0-6): START 2 END 3

Precipitation (check one): (X) None/Dry ( ) Damp/Haze/Fog ( ) Drizzle ( ) Rain

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted

Code 2: Some calls simultaneous, number of individuals can be reliably estimated

Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Amphdfrm2008.cdr, rev 02/2008

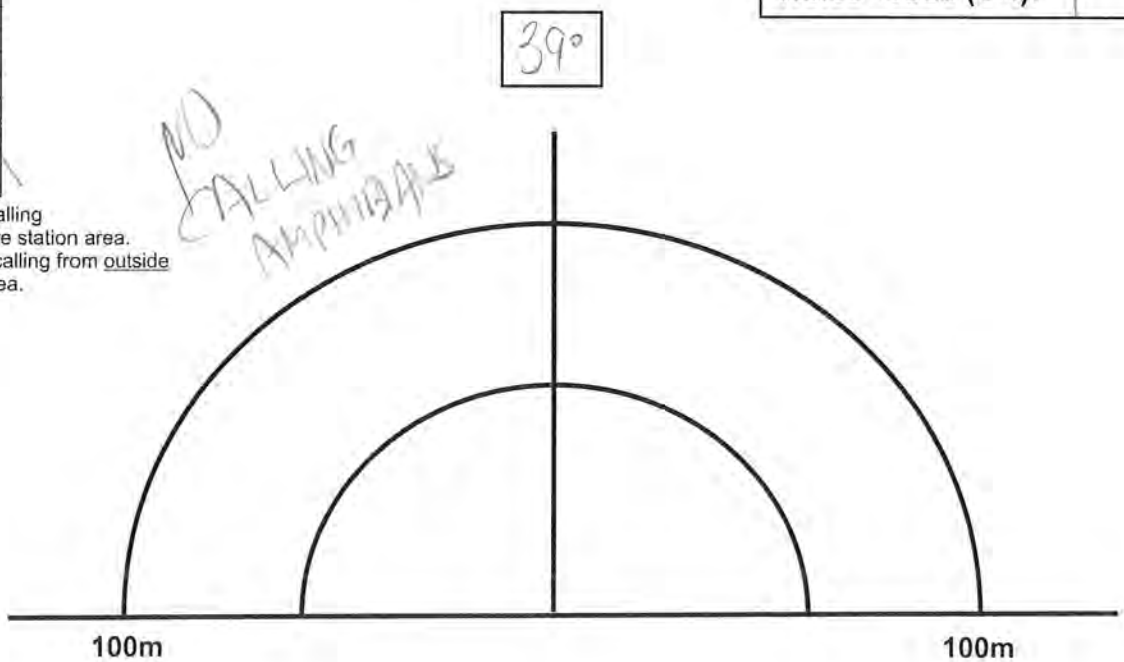
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station A 1

Station Start Time (24 hr): 21:42

Background Noise Code (1-4): 4



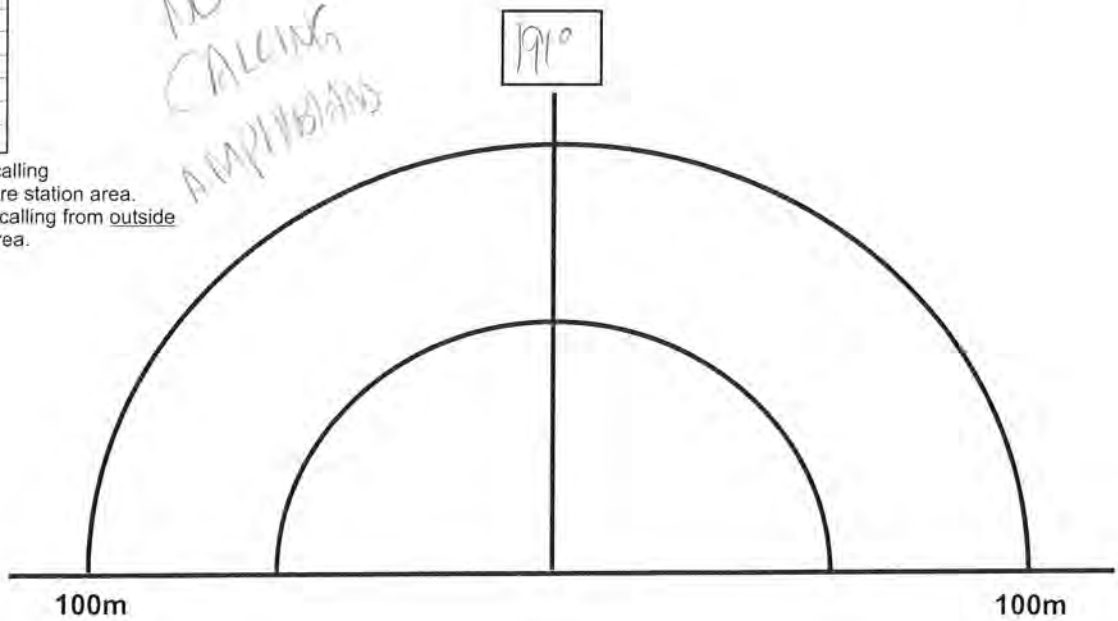
Station Start Time (24 hr): 21:27
Background Noise Code (1-4): 4

Station ~~B~~ 2

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

NO CALLING AMPHIBIANS



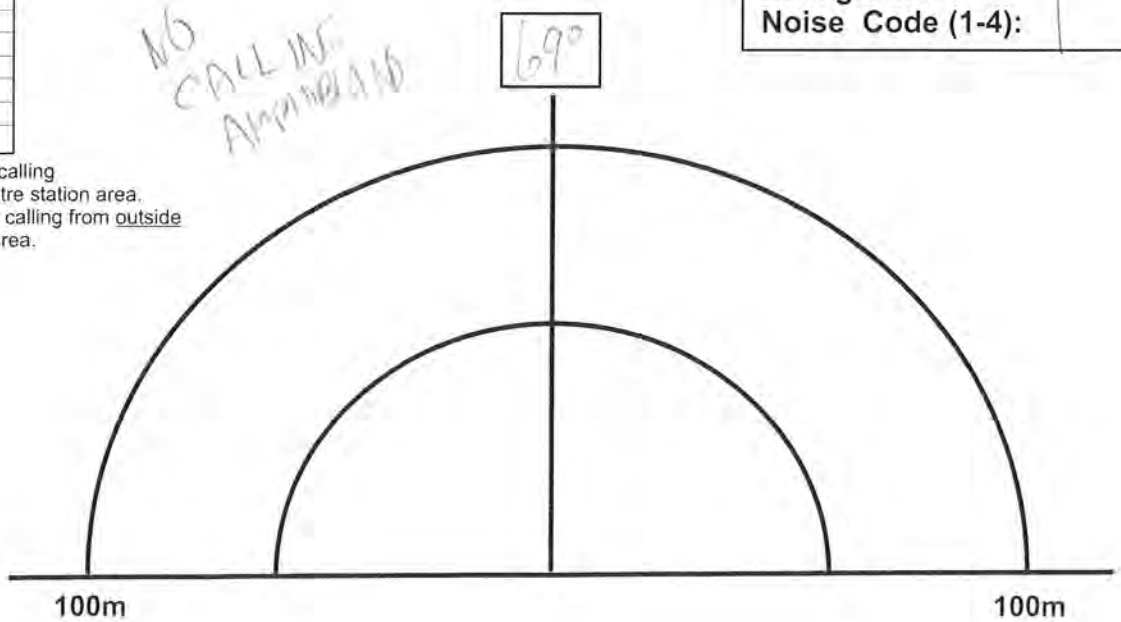
Station Start Time (24 hr): 21:21
Background Noise Code (1-4): 1

Station ~~C~~ 3

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

NO CALLING AMPHIBIANS



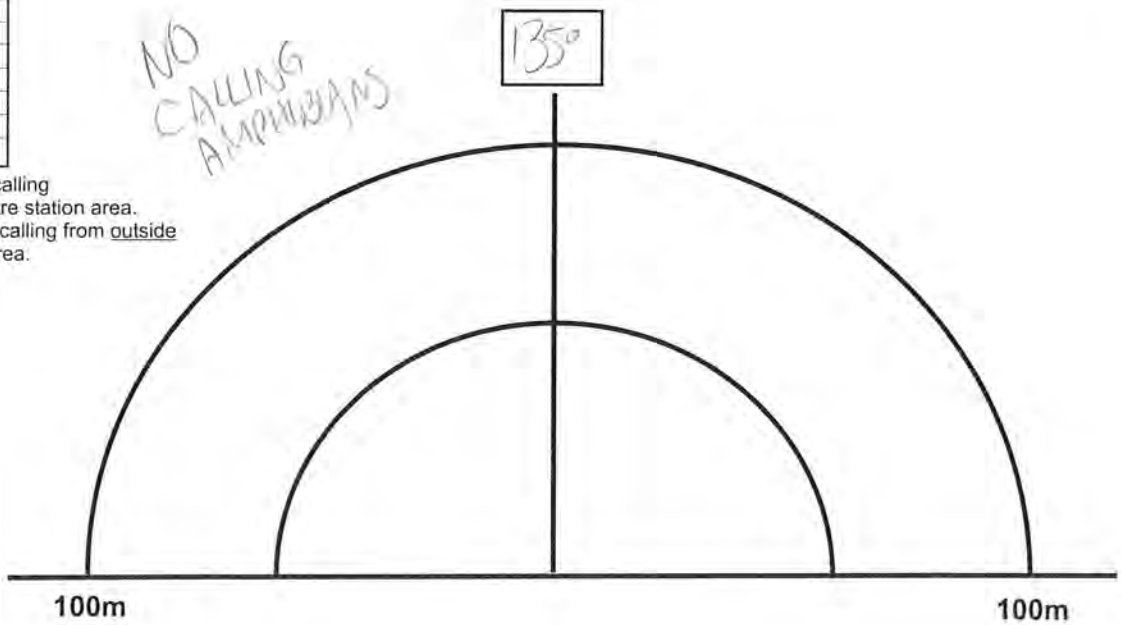
Station Start Time (24 hr):	21:18
Background Noise Code (1-4):	2

Station # 4

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

NO CALLING AMPHIBIANS



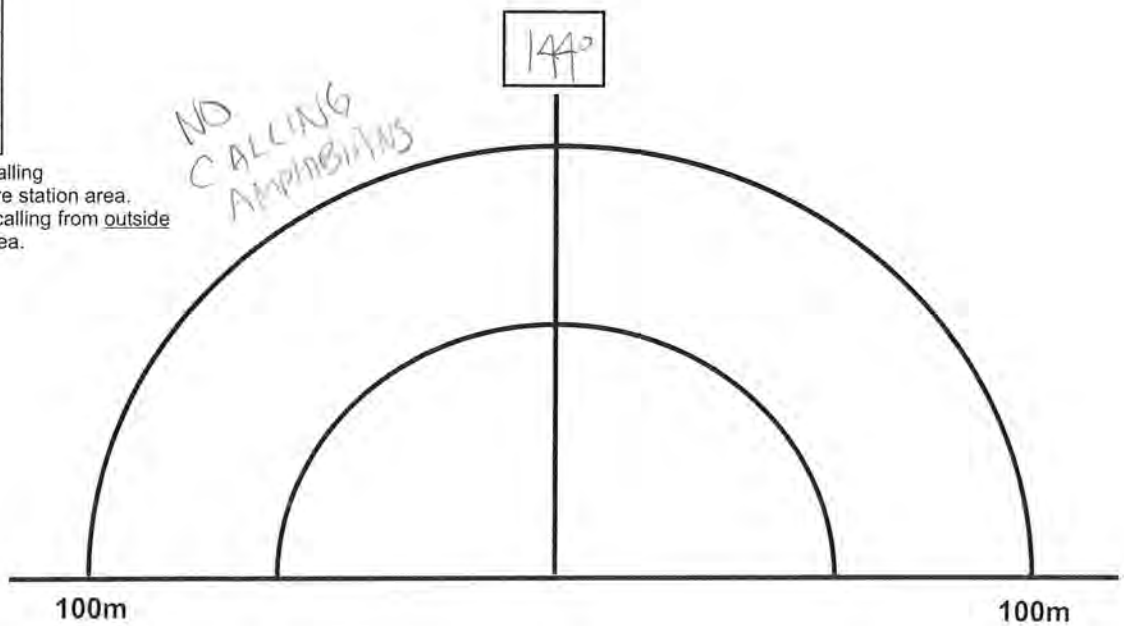
Station Start Time (24 hr):	21:14
Background Noise Code (1-4):	1

Station # 5

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

NO CALLING AMPHIBIANS



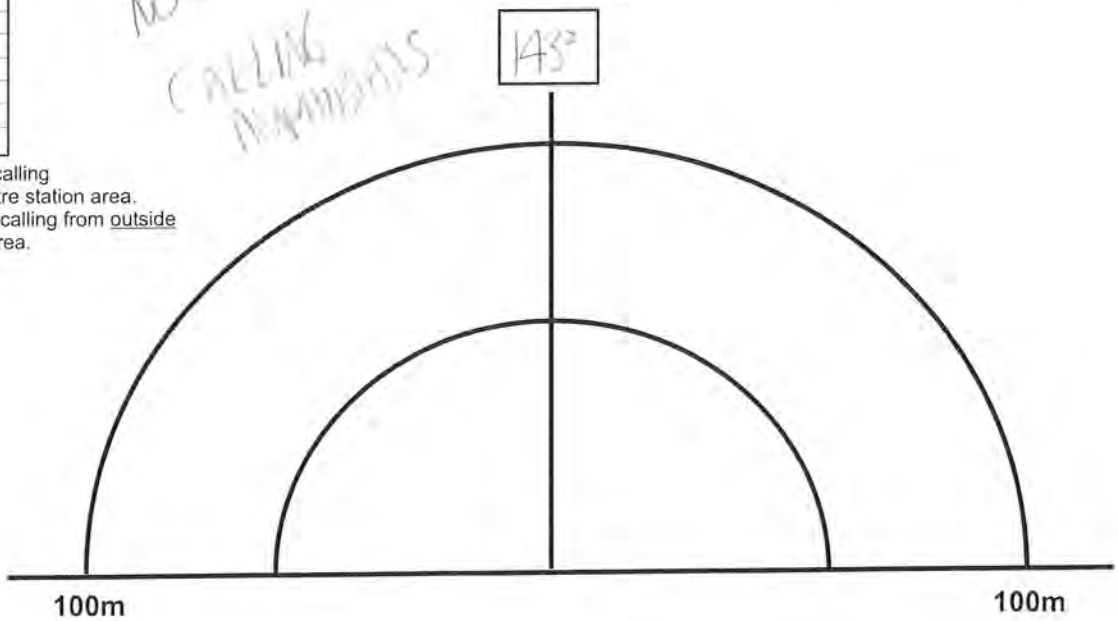
Station Start Time (24 hr):	21:37
Background Noise Code (1-4):	4

Station F 6

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

NO CALLING AMPHIBIANS



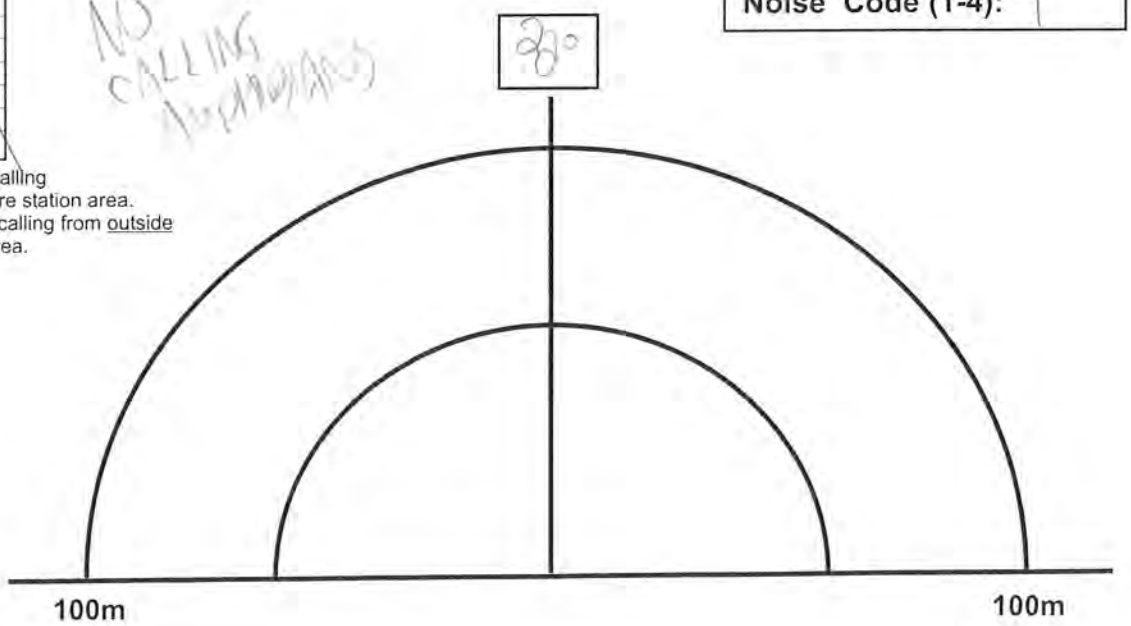
Station Start Time (24 hr):	21:32
Background Noise Code (1-4):	4

Station G 7

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

NO CALLING AMPHIBIANS

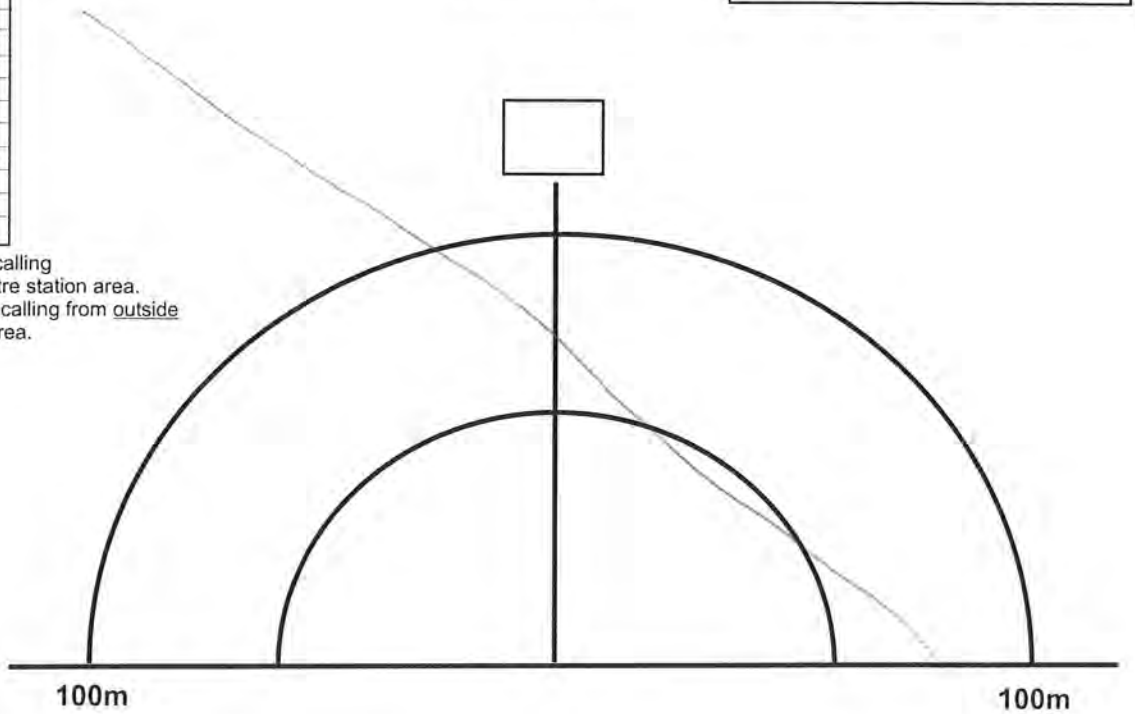


Station Start Time (24 hr):
Background Noise Code (1-4):

Station H

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.



Amphibian Species Codes

Species	Code
American Toad	AMTO
Northern (Blanchard's) Cricket Frog	BCFR
Bullfrog	BULL
Chorus Frog	CHFR
Cope's (Diploid) Gray Treefrog	CGTR
Fowler's Toad	FOTO
Gray (Tetraploid) Treefrog	GRTR
Green Frog	GRFR
Mink Frog	MIFR
Northern Leopard Frog	NLFR
Pickerel Frog	PIFR
Spring Peeper	SPPE
Wood Frog	WOFR

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)

24 Hour Time

12 Hour	*24 Hour*	*12 Hour*	*24 Hour*
7:00 PM	1900	10:00 PM	2200
8:00 PM	2000	11:00 PM	2300
9:00 PM	2100	12:00 PM	2400

Beaufort Wind Scale

Number	Wind Speed Km/h	Wind Speed Mph	Indicators
0	0-2	0-1	**Calm**, smoke rises vertically
1	3-5	2-3	**Light air movement**, smoke drifts
2	6-11	4-7	**Slight breeze**, wind felt on face
3	12-19	8-12	**Gentle breeze**, leaves and small twigs in constant motion
4*	20-30	13-18	**Moderate breeze**, small branches are moving, raises dust and loose paper

* Winds over Beaufort 3 are unacceptable for amphibian surveys.

Marsh Monitoring Program - Amphibian Data Form

Return by 31 July

Please write legibly (in pen).

MARSH MONITORING PROGRAM

VISIT INFORMATION

Route #: — Route Name: HAMILTON BLOCK 2 Station (~~A-H~~): 1-7

Observer #: — Observer Name: LORI KARLEWICZ

Visit #: 1 Day: 16 Month: APRIL Year: 2015

Cloud Cover (10th): START-3 END-3 Temperature (°C or °F): START 15°C END-11°C Beaufort Wind Scale (0-6): START-2 END-2

Precipitation (check one): ◯ None/Dry ☒ Damp/Haze/Fog (START + END) ◯ Drizzle ◯ Rain

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted

Code 2: Some calls simultaneous, number of individuals can be reliably estimated

Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Amphdfrm2008.cdr, rev 02/2008

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR	✓	
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

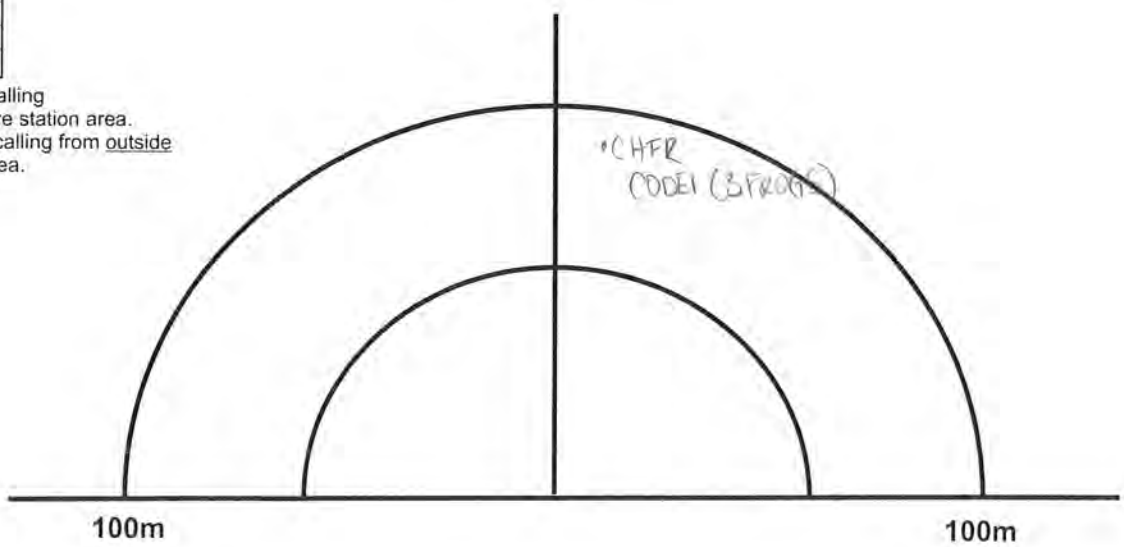
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station 7

Station Start Time (24 hr): 2057

Background Noise Code (1-4): 3

224°

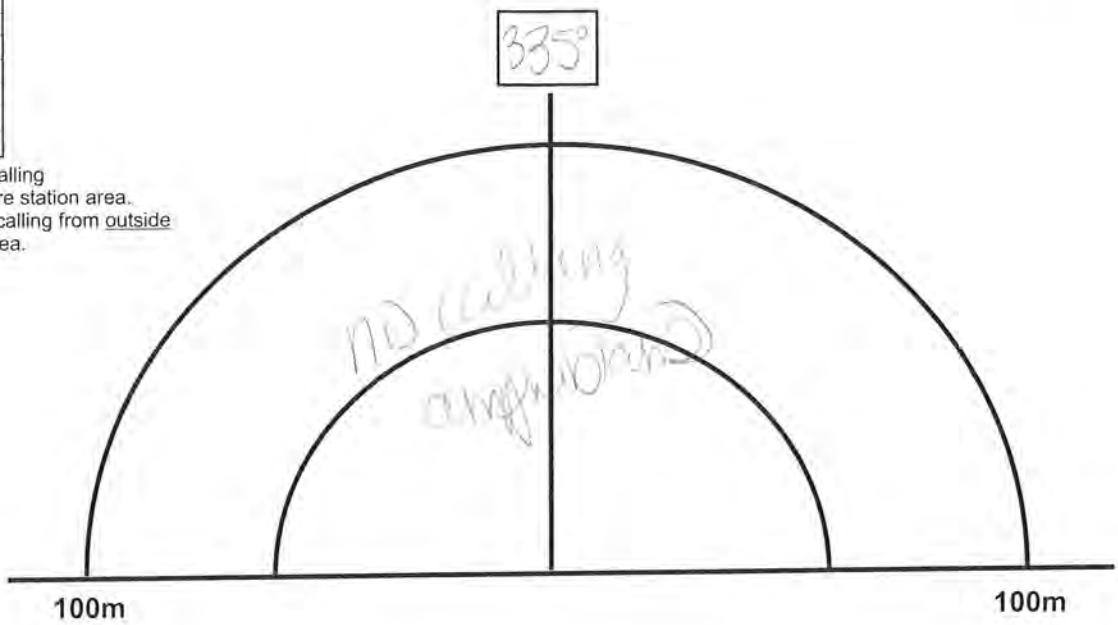


Station Start Time (24 hr):	
Background Noise Code (1-4):	4

Station 6

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

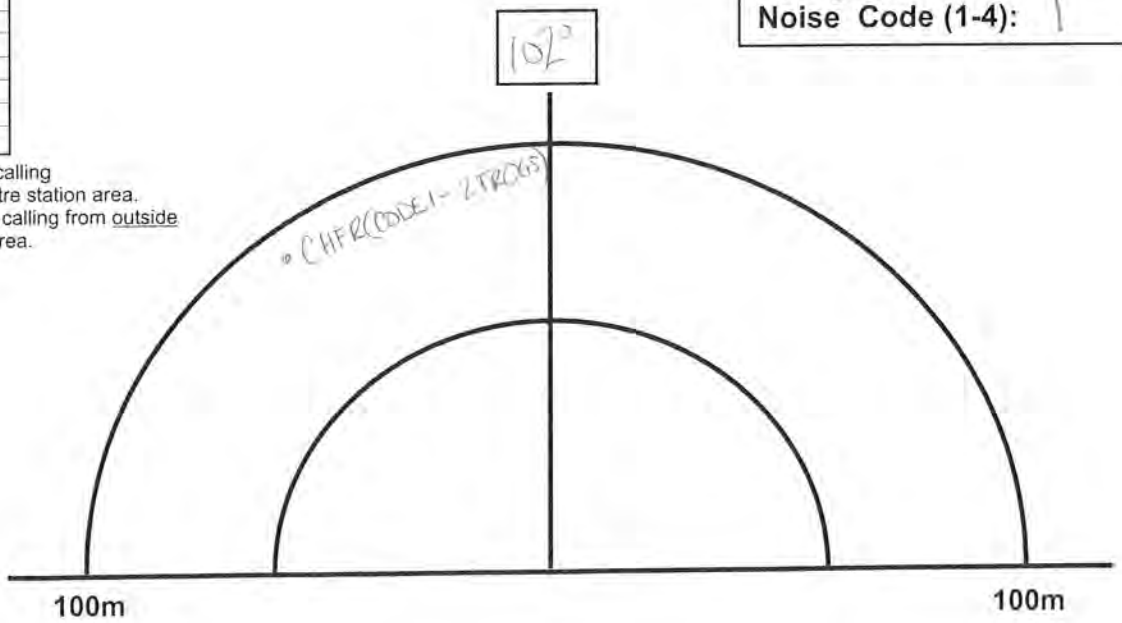


Station Start Time (24 hr):	2:00
Background Noise Code (1-4):	1

Station 5

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR	✓	
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

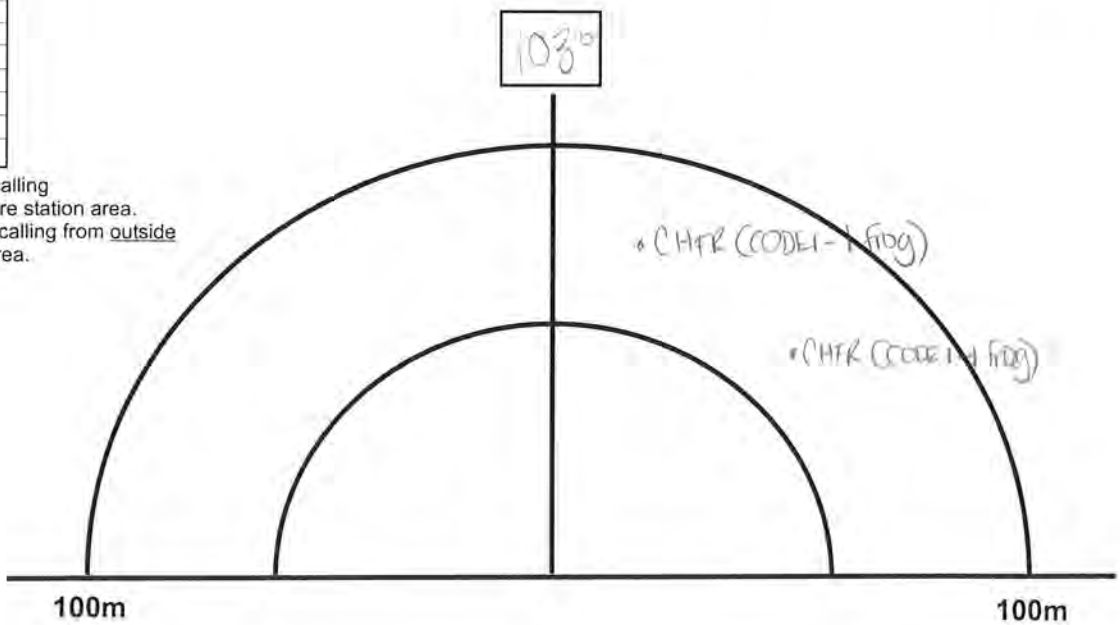


Station Start Time (24 hr):	20:43
Background Noise Code (1-4):	1

Station 4

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR	✓	
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

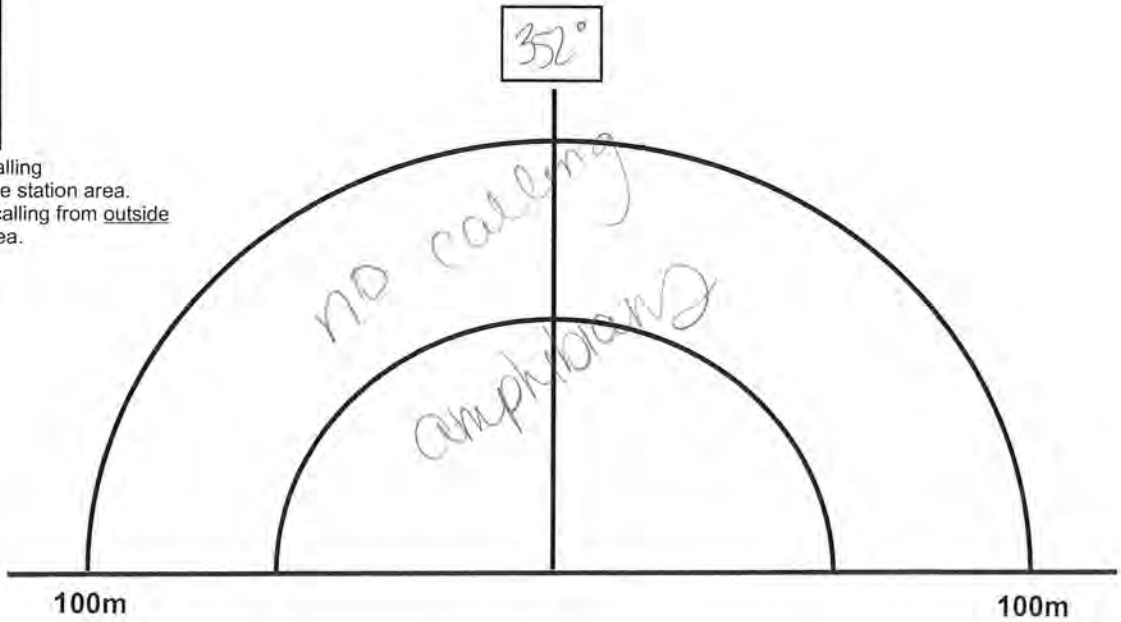


Station Start Time (24 hr):	20:48
Background Noise Code (1-4):	4(+)

Station 3

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

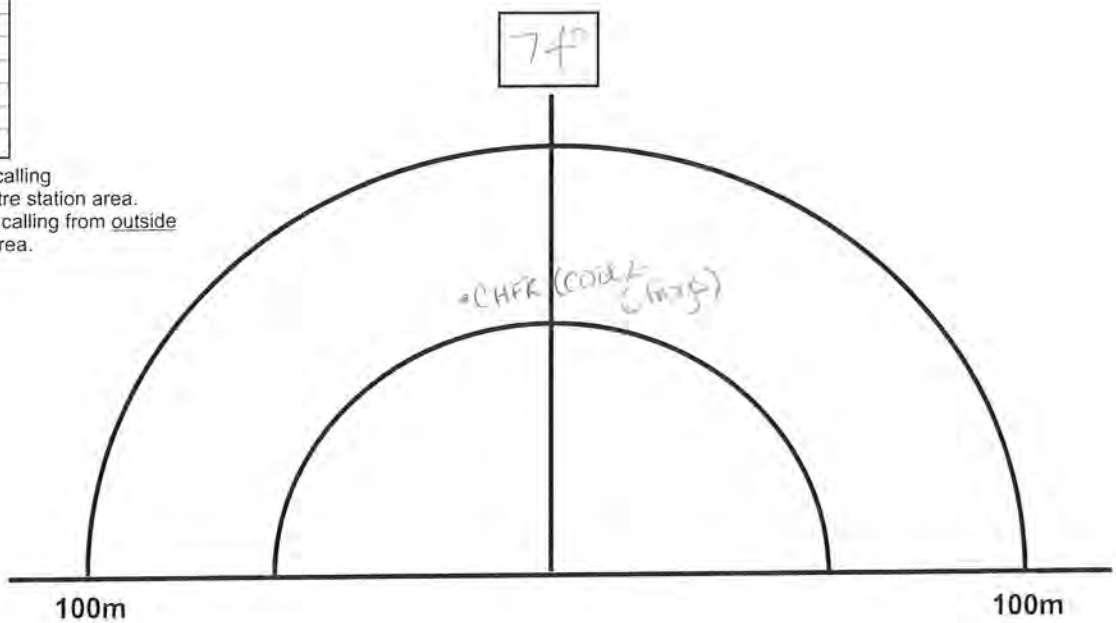


Station Start Time (24 hr):	2055
Background Noise Code (1-4):	3

Station 2

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR	✓	
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

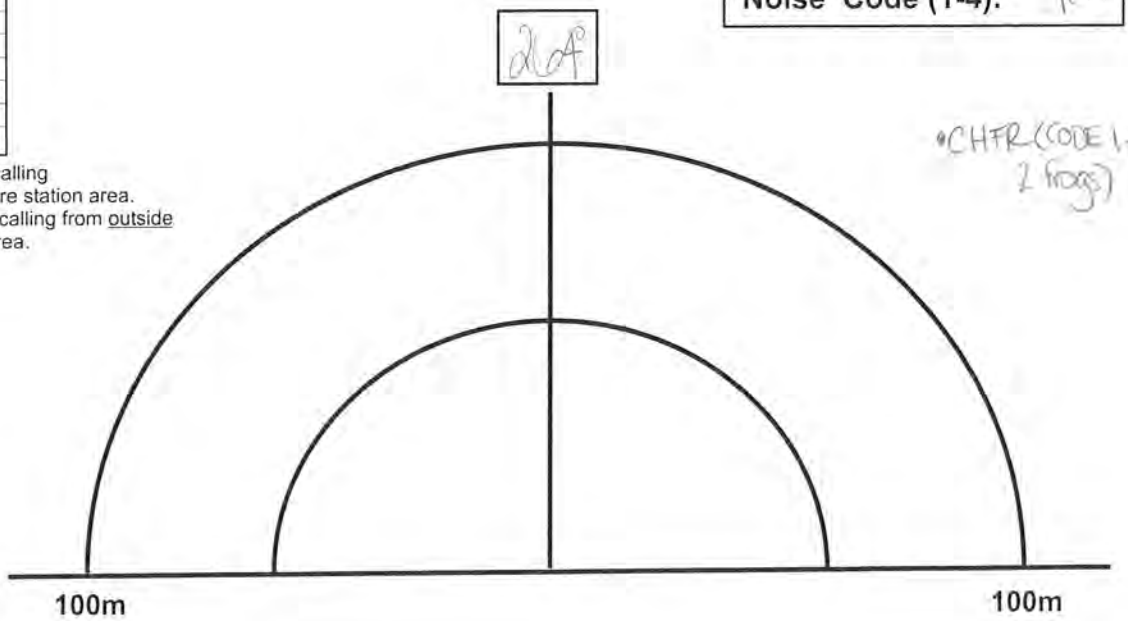


Station Start Time (24 hr):	2110
Background Noise Code (1-4):	4(+)

Station 1

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		✓
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

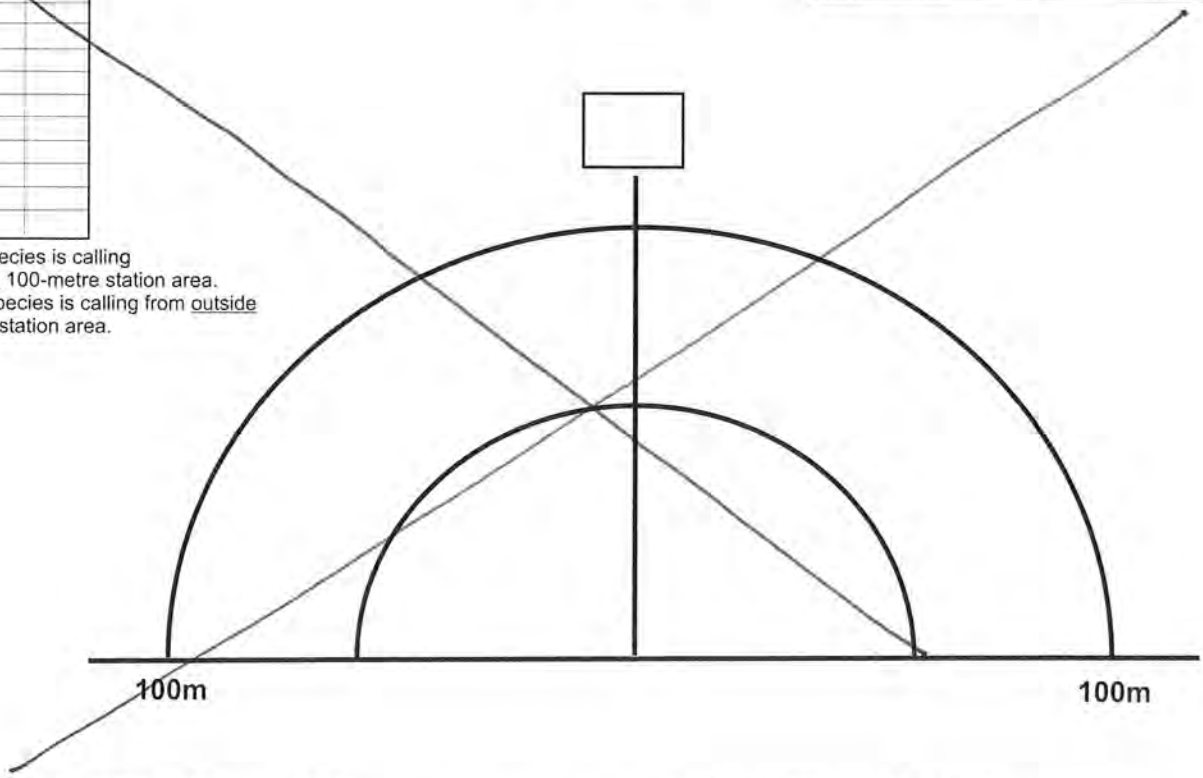


Station Start Time (24 hr):
Background Noise Code (1-4):

Station H

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.



Amphibian Species Codes

Species	Code
American Toad	AMTO
Northern (Blanchard's) Cricket Frog	BCFR
Bullfrog	BULL
Chorus Frog	CHFR
Cope's (Diploid) Gray Treefrog	CGTR
Fowler's Toad	FOTO
Gray (Tetraploid) Treefrog	GRTR
Green Frog	GRFR
Mink Frog	MIFR
Northern Leopard Frog	NLFR
Pickerel Frog	PIFR
Spring Peeper	SPPE
Wood Frog	WOFR

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)

24 Hour Time

12 Hour	24 Hour	12 Hour	24 Hour
7:00 PM	1900	10:00 PM	2200
8:00 PM	2000	11:00 PM	2300
9:00 PM	2100	12:00 PM	2400

Beaufort Wind Scale

Number	Wind Speed		Indicators
	Km/h	Mph	
0	0-2	0-1	**Calm**, smoke rises vertically
1	3-5	2-3	**Light air movement**, smoke drifts
2	6-11	4-7	**Slight breeze**, wind felt on face
3	12-19	8-12	**Gentle breeze**, leaves and small twigs in constant motion
4*	20-30	13-18	**Moderate breeze**, small branches are moving, raises dust and loose paper

* Winds over Beaufort 3 are unacceptable for amphibian surveys.

Marsh Monitoring Program - Amphibian Data Form

Return by 31 July

Please write legibly (in pen).

MARSH MONITORING PROGRAM

VISIT INFORMATION

Route #: N/A Route Name: BLOCK 2 Station (A - H): ____

Observer #: N/A Observer Name: LORI KARLEWICZ

Visit #: 3 Day: 29 Month: June Year: 2005

Cloud Cover (10th): 30 Temperature (°C or °F): start 19°C end 18°C Beaufort Wind Scale (0-6): start 2 end 3

Precipitation (check one): ◯ None/Dry ⊗ Damp/Haze/Fog ◯ Drizzle ◯ Rain

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted

Code 2: Some calls simultaneous, number of individuals can be reliably estimated

Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Amphdfrm2008.cdr, rev 02/2008

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR	✓	
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

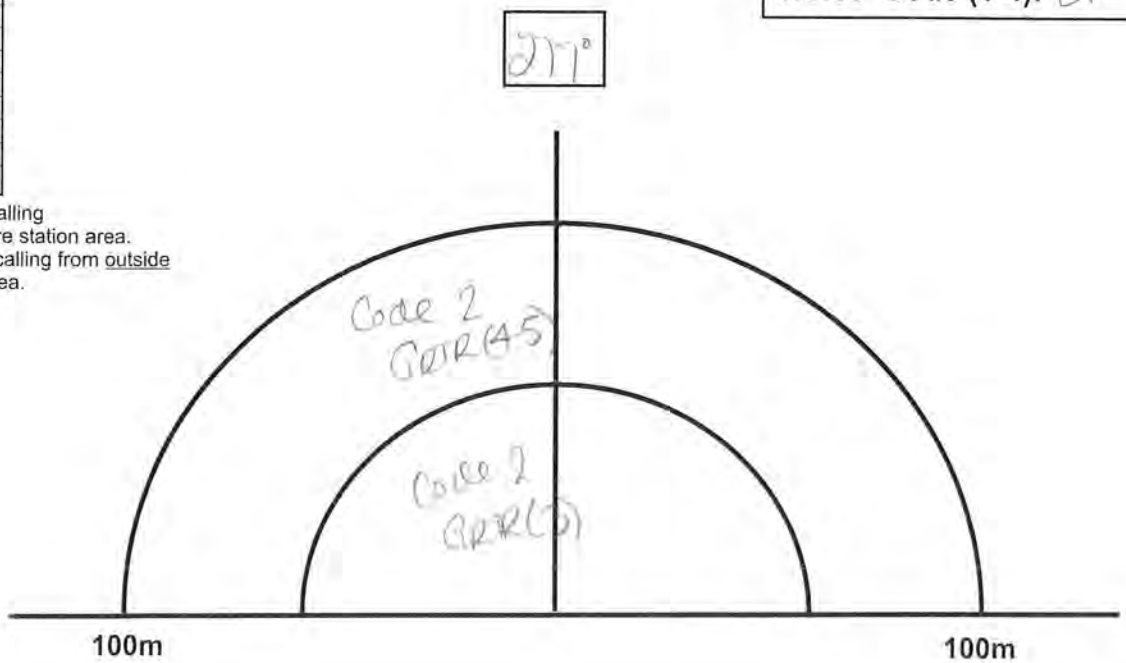
* Check if species is calling from inside 100-metre station area.

** Check if species is calling from outside 100-metre station area.

Station A

Station Start Time (24 hr): 22:06

Background Noise Code (1-4): 2

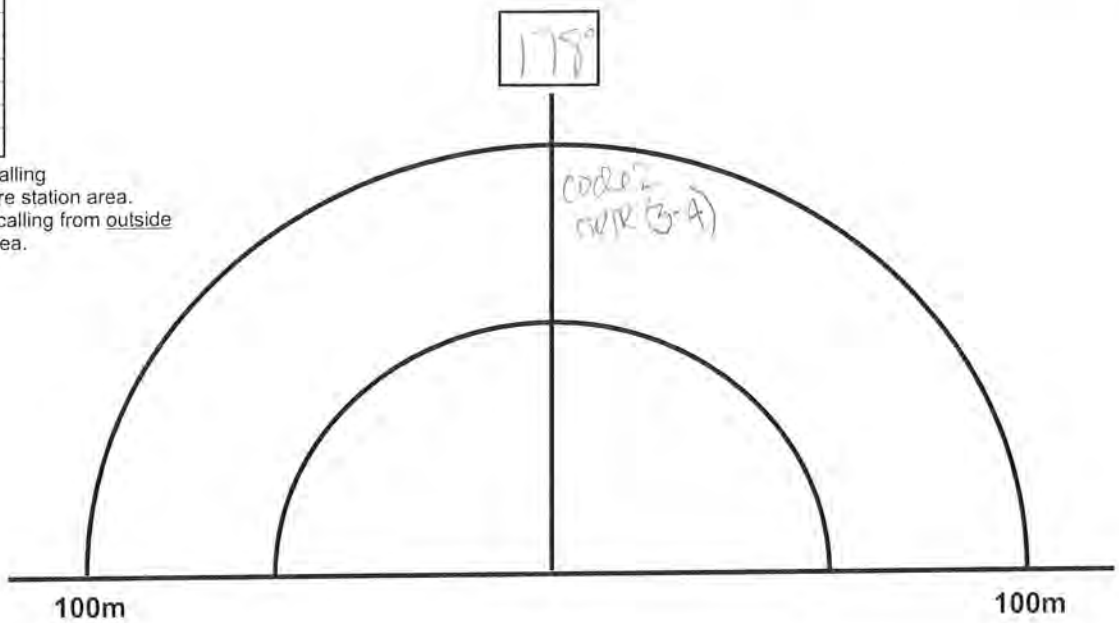


Station Start Time (24 hr):	21:49
Background Noise Code (1-4):	1

Station B2

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR	✓	
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

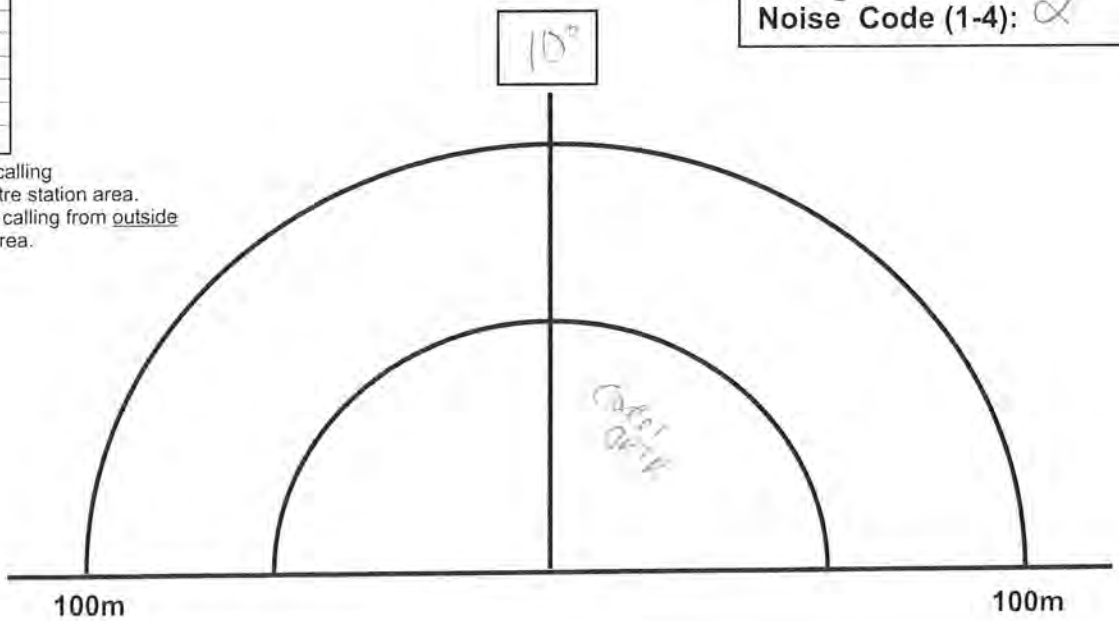


Station Start Time (24 hr):	21:44
Background Noise Code (1-4):	2

Station C

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR	✓	
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

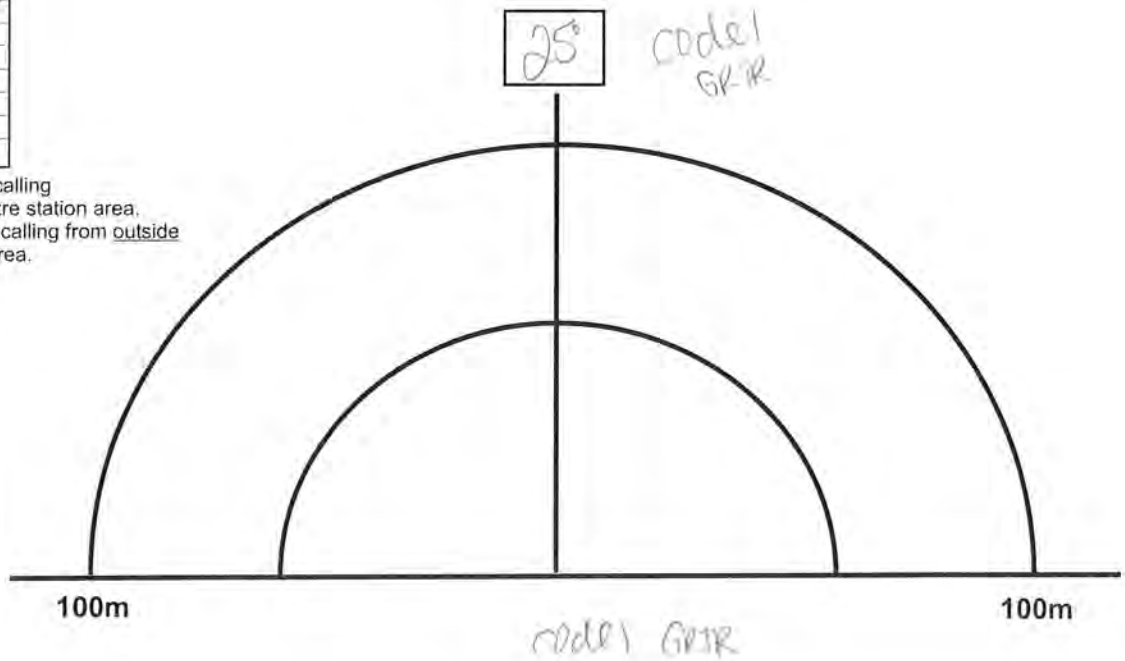


Station Start Time (24 hr):	21:39
Background Noise Code (1-4):	1

Station ~~D~~ 4

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		✓
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

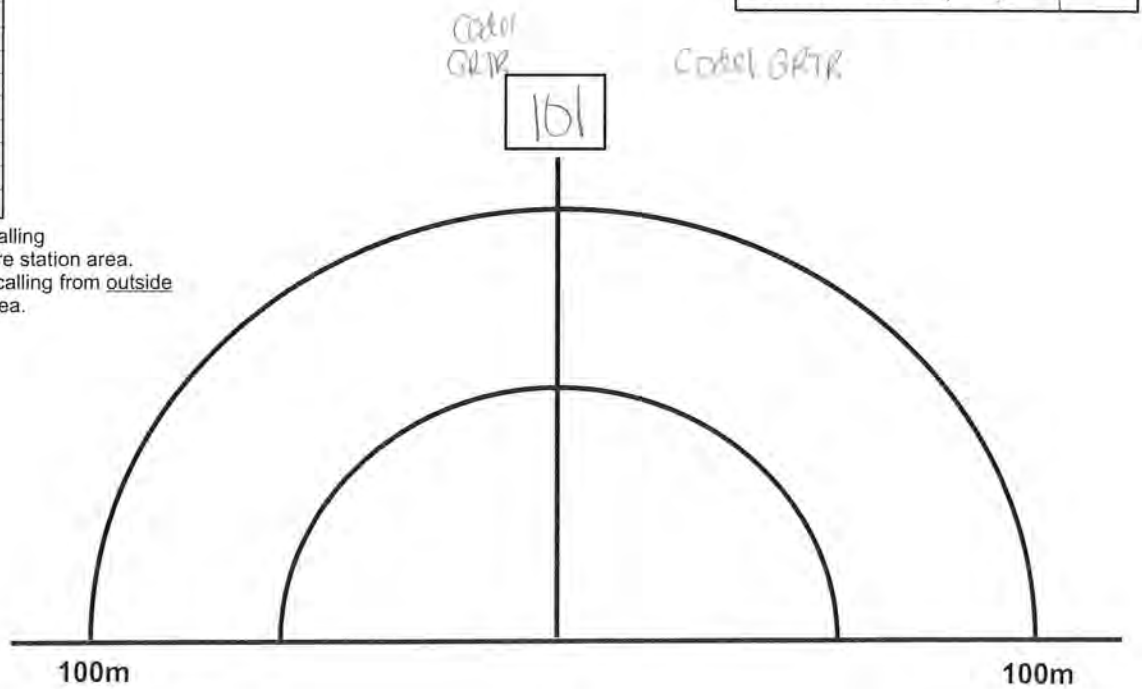


Station Start Time (24 hr):	21:35
Background Noise Code (1-4):	1

Station ~~E~~ 5

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		✓
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

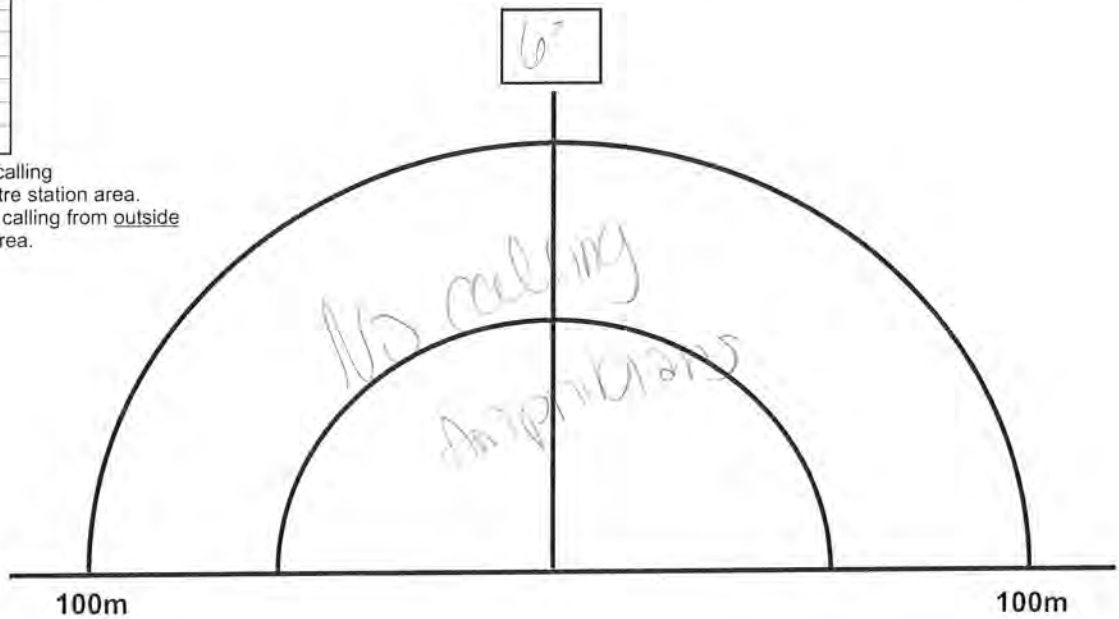


Station Start Time (24 hr):	22:00
Background Noise Code (1-4):	4

Station ~~F~~ 6

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

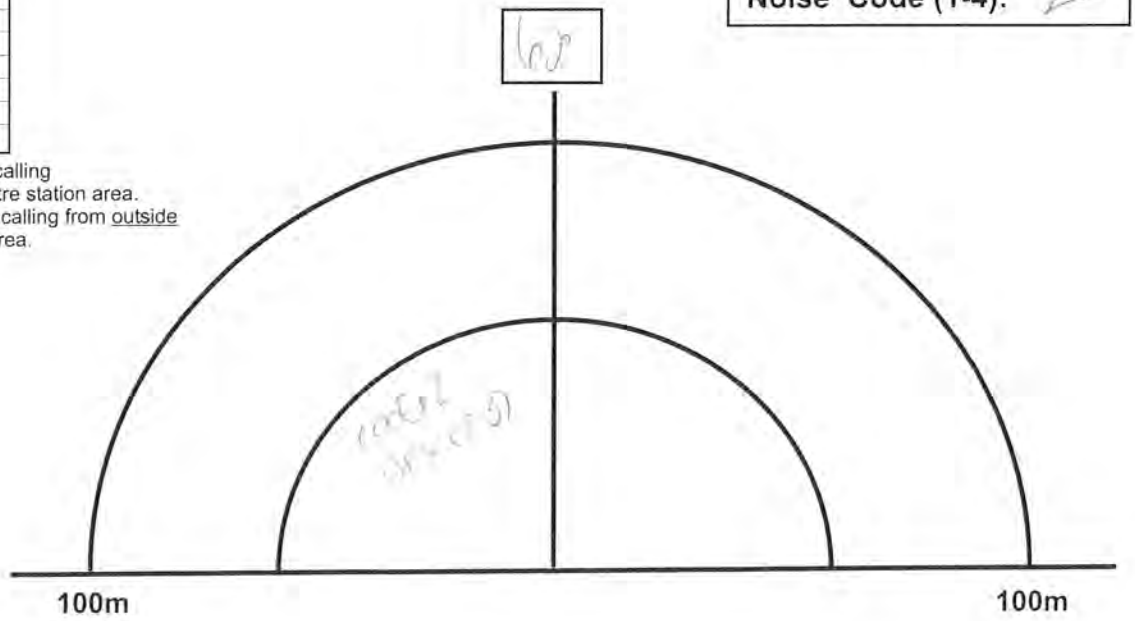


Station Start Time (24 hr):	21:55
Background Noise Code (1-4):	2

Station G 7

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR	✓	
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.



Station Start Time (24 hr):
Background Noise Code (1-4):

Station H

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
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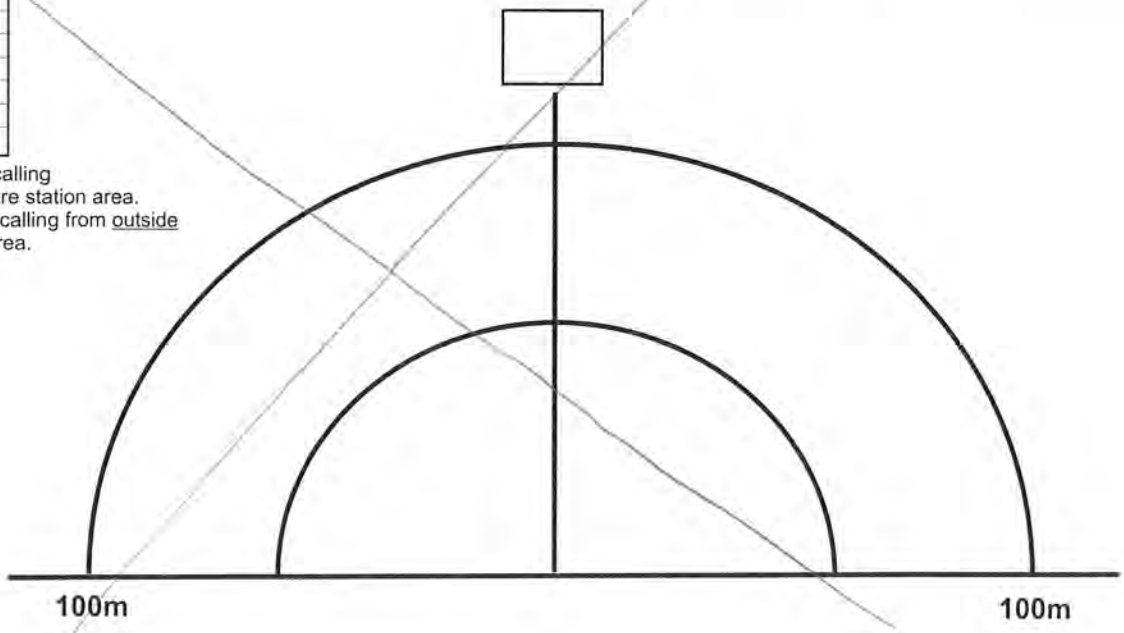

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Fowler's Toad	FOTO
Gray (Tetraploid) Treefrog	GRTR
Green Frog	GRFR
Mink Frog	MIFR
Northern Leopard Frog	NLFR
Pickerel Frog	PIFR
Spring Peeper	SPPE
Wood Frog	WOFR

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
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24 Hour Time

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Beaufort Wind Scale

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	Km/h	Mph	
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4*	20-30	13-18	**Moderate breeze**, small branches are moving, raises dust and loose paper

* Winds over Beaufort 3 are unacceptable for amphibian surveys.

Appendix E: Species-at-Risk Screening and MNRF Correspondence

Ministry of Natural Resources and Forestry

Box 5000
4890 Victoria Ave. N.
Vineland Station, Ontario
L0R 2E0

Tel: (905) 562-4147
Fax: (905) 562-1154

Ministère des Richesses naturelles et des Forêts

C.P. 5000
4890 avenue Victoria Nord
Vineland Station, Ontario
LOR 2EO

Tél : 905-562-4147
Téléc.: 905-562-1154

Ontario

Guelph District

15th July, 2015

Ash Baron
Aquafor Beech Ltd.
55 Regal Road, Unit 3
Guelph, Ontario
N1K 1B6

Dear Ms. Baron,

Thank you for your inquiry regarding the presence of species at risk on the property located at Glover Road and Barton Road in the City of Hamilton.

Digital mapping for some natural heritage features is available from Land Information Ontario (LIO). MNR recommends contacting LIO to obtain relevant feature mapping. Datasets of potential interest (and the corresponding LIO dataset) include – wetlands ('Wetland' dataset), ANSI ('ANSI dataset), wooded areas ('Wooded Areas'), wintering areas ('Wintering Areas'), and fish spawning areas ('Spawning Areas').

Notwithstanding the recommendation to obtain mapping from LIO, MNR Guelph District does not have any records for wetlands near this property. The project location is close to the Fruitland Escarpment ANSI.

If you are interested in fisheries information for watercourses in the greater surrounding area to your study site, please contact Anne Yagi, Management Biologist at (905) 562-1196 to determine what information may be required.

I can inform you that we have no confirmed observations of Species at Risk in the vicinity of the above property. I have attached a list of possible SAR for this municipality.

Please note that because the province has not been surveyed comprehensively for the presence of species at risk (SAR), the absence in the NHIC database of an EO in a particular geographic area does not indicate the absence of the species in that area. Consequently, the presence of an EO is useful to flag the presence of the species in the area, but is not an appropriate tool to determine whether a species is absent, or whether it should be surveyed for or not in a particular area.

Consequently, we provide the following advice with respect to determining the presence of species at risk on a property for which a land-use change or on-the-ground activity is being proposed (note that some of the following may not apply to a given type of proposed activity, or for a given study area):

I. Habitat Inventory

The District recommends undertaking a comprehensive botanical inventory of the entire area that may be subject to direct and indirect impacts from the proposed activity. The vegetation communities and aquatic habitats in the study area should be classified as per the "Ecological Land Classification (ELC) for Southern Ontario" system, to either the "Ecosite" or "Vegetation Type" level. With respect to aquatic habitats in the study area, we recommend you collect data on the physical characteristics of the waterbodies and inventory the riparian zone vegetation, so that these habitats can be classified as per the Aquatic Ecosites described in the ELC manual.

II. Potential SAR on the property

A list of species at risk that have the potential to occur in the area can be produced by cross-referencing the ecosites described during the habitat inventory with the habitat descriptions of species at risk known to occur in the county or regional municipality within which the area is located. The list of species at risk known to occur in the Municipality of Niagara is attached. The species-specific COSEWIC status reports (www.cosewic.gc.ca) are a good source of information on species at risk habitat needs and will be helpful in determining the suitability of the property's ecosites for a given species.

Please note that the Species at Risk in Ontario list (SARO) is a living document and is amended periodically as a result of species assessment and re-assessments conducted by the Committee on the Status of Species at Risk in Ontario (COSSARO). The SARO list can be accessed on the webpage http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_CSSR_SARO_LST_EN.html

COSSARO also maintains a list of species to be assessed in the future. It is recommended to take COSSARO's list of anticipated assessments into consideration, especially when the proposed start date of the activity is more than 6 months away, or the project will be undertaken over a period greater than 6 months. The list can be viewed by going to http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/244543.html and clicking on the link Priority List of Species to be Assessed and Classified by COSSARO.

III. SAR surveys

The District is of the opinion that each species at risk identified under Step II should be surveyed for, regardless of whether or not the species has been previously recorded in the area, or whether previous records are historical in nature. The survey report should describe how each species at risk was surveyed for, and provide a rationale for why, if any, certain species appearing on the county/ regional municipal list were not the subject of the survey. These rationales must be based on evidence demonstrating either that: suitable habitat for the species is not present on the property or; the project will not have any impacts -including indirect impacts- on the species. Some SAR surveys require an authorization under the *Endangered Species Act 2007* and/or a Scientific Collector's Permit; please contact me if you require further direction regarding these.

Guelph District additionally recommends contacting the municipal planning approval authority and the conservation authority to determine if they have any additional information or records of interest for the study area.

Please contact me if your investigations reveal the presence of species at risk on the subject property. I will be happy to provide further advice regarding the provisions of the *Endangered Species Act* at that time.

Sincerely,

Michelle Martin
Management Biologist
Ministry of Natural Resources, Guelph District
4890 Victoria Avenue North
Vineland Station, ON L0R 2E0
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HAMILTON

Jump to: List of Municipalities

Species At Risk Designations	
ENDANGERED	
THREATENED	
SPECIAL CONCERN	
EXTIRPATED	

AMPHIBIANS		ESA Protection	Key Habitats Used By Species	Timing Of Life History Events	How to Conduct a Proper Survey
Jefferson Salamander (*Ambystoma jeffersonianum*)	**Known to Occur**	*Species Protection and **Habitat Regulation***	inhabit deciduous and mixed deciduous forests with suitable breeding areas which generally consist of ephemeral (temporary) bodies of water that are fed by spring runoff, groundwater, or springs.	Active: March – October Hibernates: October – March Breeding: Late March - Mid April	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol

BIRDS		ESA Protection	Key Habitats Used By Species	Timing Of Life History Events	How to Conduct a Proper Survey
Acadian Flycatcher (*Empidonax virescens*)	**Known to Occur**	*Species and General Habitat Protection*	generally requires large areas of mature, undisturbed forest; avoids the forest edge; often found in well wooded swamps and ravines	Migrate South before Winter	Follow Breeding Bird Survey Protocol
Bald Eagle (*Haliaeetus leucocephalus*)	**Known to Occur**	*N/A*	prefers deciduous and mixed-deciduous forest; and habitat close to water bodies such as lakes and rivers; They roost in super canopy trees such as Pine	Breed and Nest - April or May Some Migrate South when water bodies freeze over	Follow Breeding Bird Survey Protocol
Bank Swallow (Riparia riparia)	**Known to Occur**	*Species and General Habitat Protection June 27, 2014*	It nests in a wide variety of naturally and anthropogenically created vertical banks, which often erode and change over time including aggregate pits and the shores of large lakes and rivers	Migrate South before Winter	Follow Breeding Bird Survey Protocol
Barn Owl (*Tyto alba*)	**Known to Occur**	*Species Protection and **Habitat Regulation***	generally prefer low-elevation, open country; often associated with agricultural lands, especially pasture. Nests are located in buildings, hollow trees and cavities in cliffs.	Active Year Round Some leave for the Winter	Follow Breeding Bird Survey Protocol Night surveys may be helpful as they are very vocal
Barn Swallow (Hirundo rustica)	**Known to Occur**	*Species and General Habitat Protection*	prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc.	Migrate South before Winter	Follow Breeding Bird Survey Protocol
Black Tern (*Childonias niger*)	**Known to Occur**	*N/A*	generally prefer freshwater marshes and wetlands; nest either on floating material in a marsh or on the ground very close to water	Migrate South for the Winter	Follow Breeding Bird Survey Protocol
Bobolink (*Dolichonyx oryzivorus*)	**Known to Occur**	*Species and General Habitat Protection*	generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands	Migrate South for the Winter	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol
Canada Warbler (*Cardellina canadensis*; formerly *Wilsonia canadensis*)	**Known to Occur**	*N/A*	Generally prefers wet coniferous, decediuous and mixed forest types, with a dense shrub layer. Nests on the ground, on logs or hummocks, and uses dense shrub layer to conceal the nest.	Migrate South for the Winter Arrive in Ontario Early May	Follow Breeding Bird Survey Protocol
Cerulean Warbler (*Setophaga cerulea;* formerly *Dendoica cerulea*)	**Known to Occur**	*Species and General Habitat Protection*	generally found in mature deciduous forests with an open understorey; also nests in older, second-growth deciduous forests.	Migrate South for the Winter	Follow Breeding Bird Survey Protocol
Chimney Swift (*Chaetura pelagica*)	**Known to Occur**	*Species and General Habitat Protection*	historically found in deciduous and coniferous, usually wet forest types, all with a welldeveloped, dense shrub layer; now most are found in urban areas in large uncapped chimneys	Nesting - Late April to Mid- May Migrate South in September or Early October	Consult: Chimney Swift Monitoring Protocol. Bird Studies Canada, March 2009
Common Nighthawk (*Chordeiles minor*)	**Known to Occur**	*N/A*	generally prefer open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. Can also be found in urban areas (nest on flat roof-tops)	Migrate South for the Winter	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol
Eastern Meadowlark (*Sturnella Magna*)	**Known to Occur**	*Species and General Habitat Protection*	generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps.	Migrate South for the Winter	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol
Eastern Wood-Pewee (*Contopus virens*)	**Known to Occur**	*N/A*	asscoiated with deciduous and mixed forests. Witin mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges.	Migrate South for the Winter	Follow Breeding Bird Survey Protocol
Eastern Whip-poor-will (*Caprimlugus vociferus*)	**Known to Occur**	*Species and General Habitat Protection*	generally prefer semi-open deciduous forests or patchy forests with clearings; areas with little ground cover are also preferred; In winter they occupy primarily mixed woods near open areas.	Nesting: May - July	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol
Golden-winged Warbler (Vermivora chrysoptera)	**Known to Occur**	*N/A*	generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas.	Migrate South for the Winter	Follow Breeding Bird Survey Protocol
Henslow's Sparrow (*Ammodramus henslowii*)	**Historically Known to Occur**	*Species and General Habitat Protection*	generally found in old fields, pastures and wet meadows. They prefer areas with dense, tall grasses, and thatch, or decaying plant material	Migrate South for the Winter	Follow Breeding Bird Survey Protocol
King Rail (*Rallus elegans*)	**Known to Occur**	*Species and General Habitat Protection*	generally this species requires large marshes with open shallow water that merges with shrubby areas	Breed from Late April to mid-May Migrate South for the Winter	Follow March Monitoring Protocol
Least Bittern (*Ixobrychus exilis*)	**Known to Occur**	*Species and General Habitat Protection*	generally located near pools of open water in relatively large marshes and swamps that are dominated by cattail and other robust emergent plants	Migrate South for the Winter	Follow Marsh Monitoring Protocol; 10 day window of male calling (variable timing). Does not respond well to playback. Very difficult to detect.

Louisiana Waterthrush *(Seiurus motacilla)*	**Known to Occur**	*N/A*	generally inhabits mature forests along steeply sloped ravines adjacent to running water. It prefers clear, cold streams and densely wooded swamps	Migrate South for the Winter	Follow Breeding Bird Survey Protocol
Peregrine Falcon *(Falco peregrinus)*	**Known to Occur**	*N/A*	generally nest on tall, steep cliff ledges adjacent to large waterbodies; some birds adapt to urban environments and nest on ledges of tall buildings, even in densely populated downtown areas.	Active Year Round Lay Eggs around Easter Hatching occurs around Mother's Day Young fledge around Father's Day	Visit ideal habitat locations and listen/look for individuals in the vicinity.
Prothonotary Warbler *(Protonotaria citrea)*	**Known to Occur**	*Species and General Habitat Protection*	generally found in the dead trees of flooded woodlands or deciduous swamp forests; Carolinian zone	Migrate South for the Winter Eggs are layed from Late May - Early July	Follow Breeding Bird Survey Protocol
Red-Headed Woodpecker *(Melanerpes erythrocephalus)*	**Known to Occur**	*N/A*	generally prefer open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks	Active from May to September	Follow Breeding Bird Survey Protocol
Short-eared Owl *(Asio flammeus)*	**Suspected to Occur**	*N/A*	generally prefers a wide variety of open habitats, including grasslands, peat bogs, marshes, sand-sage concentrations, old pastures and agricultural fields	Active Year Round	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol
Wood Thrush (Hylocichla mustelina)	**Known to Occur**	*N/A*	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments.	Migrate South for the Winter Arrive in Ontario in mid to late spring	Follow Breeding Bird Survey Protocol
Yellow-breasted Chat *(Icteria virens)*	**Known to Occur**	*Species and General Habitat Protection*	generally prefer dense thickets around wood edges, riparian areas, and in overgrown clearings	Migrate South for the Winter Arrive in Ontario Early May	Follow Breeding Bird Survey Protocol

FISH			**Key Habitats Used By Species**	**Timing Of Life History Events**	**How to Conduct a Proper Survey**
American Eel *(Anguilla rostrata)*	**Known to Occur**	*Species and General Habitat Protection*	all fresh water, estuaries and coastal marine waters that are accessible to the Atlantic Ocean; 12-mile creek watershed and Lake Ontario	Active Year Round	• Electrofishing For information please contact your local MNR office, DFO, and Lakes and Rivers
Grass Pickerel *(Esox americanus vermiculatus)*	**Known to Occur**	*N/A*	generally occur in wetlands with warm, shallow water and an abundance of aquatic plants; occur in the St. Lawrence River, Lake Ontario, Lake Erie, and Lake Huron	spawn in Ontario from late March to early May	For information please contact your local MNR office, DFO, and Lakes and Rivers
Redside Dace *(Clinostomus elongatus)*	**Known to Occur**	*Species Protection and **Habitat Regulation***	generally found in pools and slow-moving areas of small headwater streams with a moderate to high gradien	Spawning occurs in May	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol
Silver Shiner *(Notropis photogenis)*	**Known to Occur**	*Species and General Habitat Protection*	generally prefer moderate to large, deep, relatively clear streams with swift currents, and moderate to high gradients	Spawning occurs in May and June	For information please contact your local MNR office, DFO, and Lakes and Rivers

INSECTS		ESA Protection	**Key Habitats Used By Species**	**Timing Of Life History Events**	**How to Conduct a Proper Survey**
Monarch Butterfly *(Danaus plexippus)*	**Known to Occur**	*N/A*	exist primarily wherever milkweed and wildflowers exist; abandoned farmland, along roadsides, and other open spaces	Migrate South for the Winter Usually in Late September and October	• Watch for adults along roadsides and in open fields • Caterpillars feed on milkweeds: Common milkweed grows in open disturbed habitats (fields, roadsides, etc) and swamp milkweed grows in wet habitats (along streams, lakes, marshes) • Adults can be spotted from a distance; caterpillars must be looked for carefully on the host plant.
Mottled Duskywing (Erynnis martialis)	**Known to Occur**	*Species and General Habitat Protection June 27, 2014*	generally inhabits a range of grassland, shrubland, and savanna habitats that contain well drained soils and the presence of its host plants Prairie Redroot (Ceanothus herbaceus) or New Jersey Tea (Ceanothus americanus).	Adult butterfly emerges from pupa in April and May	• Watch for adults near host plants or search for caterpillars on the host plant • • Adults can be spotted from a distance; caterpillars must be looked for carefully on the host plant.
West Virginia White (Pieris virginiensis)	**Known to Occur**	*N/A*	generally prefer moist, deciduous woodlands. The larvae feed only on the leaves of the two-leaved toothwort (Cardamine diphylla), which is a small, spring-blooming plant of the forest floor.	Adult butterfly emerges from pupa in late March; flies only in April and May	• Watch for adults within moist, deciduous woodlands • Caterpillars feed on the two-leaved toothwort: Toothwort grows in damp, open, rich hardwood woodlands and blooms from April to June. • Adults can be spotted from a distance; caterpillars must be looked for carefully on the host plant.

MAMMALS		ESA Protection	**Key Habitats Used By Species**	**Timing Of Life History Events**	**How to Conduct a Proper Survey**
American Badger *(Taxidea taxus jacksoni)*	**Known to Occur**	*Species Protection and **Habitat Regulation***	generally prefer open habitats, whether natural (grasslands) or man-made (agricultural fields, road right-of-ways, golf courses)	Breed: Late Summer Semi-dormant over Winter	• Determine if soils are suitable (sandy or loamy) • Dens and Woodchuck burrows should be surveyed for use
Eastern Small-footed Myotis (Myotis leibii)	**Suspected to Occur**	*Species and General Habitat Protection as of June 27, 2014*	Overwintering habitat: Caves and mines that remain above 0 Maternal Roosts: primarily under loose rocks on exposed rock outcrops, crevices and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark.	Hibernates in caves and mines during winter	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol
Little Brown Myotis (Myotis lucifugus)	**Suspected to Occur**	*Species and General Habitat Protection*	Overwintering habitat: Caves and mines that remain above 0 Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh).	Hibernates in caves and mines during winter	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol
Northern Myotis (Myotis septentrionalis)	**Suspected to Occur**	*Species and General Habitat Protection*	Overwintering habitat: Caves and mines that remain above 0 Maternal Roosts: Often asssociated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.)	Hibernates in caves and mines during winter	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol
Woodland Vole *(Microtus pinetorum)*	**Known to Occur**	*N/A*	generally associated with deciduous forests in areas of soft, friable, often sandy soil beneath deep humus, where it can burrow easily.	Active Year Round	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol

MOLLUSCS	ESA Protection	**Key Habitats Used By Species**	**Timing Of Life History Events**	**How to Conduct a Proper Survey**

Eastern Pondmussel *(Ligumia nasuta)*	**Known to Occur**	*Species and General Habitat Protection*	generally inhabit sheltered areas of lakes or slow streams in substrates of fine sand and mud	Active Year Round	Please reference: Mackie, G, T.J Morris, and D Ming. **"Protocol for the Detection and Relocation of Freshwater Mussel Species at Risk in Ontario Great Lakes Area (OGLA)."** Fisheries and Oceans Canada. (2008): Print.
Lilliput (Taxolasma parvum)	**Known to Occur**	*Species and General Habitat Protection June 27, 2014*	Found in a variety of habitats including small to large rivers, wetlands, shallows of lakes, ponds and reservoirs. They are common in soft substrates with over 50% of the substrate type comprised of sand and a mud/muck/silt combination. Typically occur with or near Green Sunfish, Bluegill, White Crappie, and Johnny Darter	Active Year Round	Please reference: Mackie, G, T.J Morris, and D Ming. **"Protocol for the Detection and Relocation of Freshwater Mussel Species at Risk in Ontario Great Lakes Area (OGLA)."** Fisheries and Oceans Canada. (2008): Print.
Rainbow Mussel *(Villosa iris)*	**Known to Occur**	*Species and General Habitat Protection*	most abundant in shallow, well- oxygenated reaches of small- to medium-sized rivers and sometimes lakes, on substrates of cobble, gravel, sand and occasionally mud	Active Year Round	Please reference: Mackie, G, T.J Morris, and D Ming. **"Protocol for the Detection and Relocation of Freshwater Mussel Species at Risk in Ontario Great Lakes Area (OGLA)."** Fisheries and Oceans Canada. (2008): Print.

MOSSES		ESA Protection	**Key Habitats Used By Species**	**Timing Of Life History Events**	**How to Conduct a Proper Survey**

PLANTS		ESA Protection	**Key Habitats Used By Species**	**Timing Of Life History Events**	**How to Conduct a Proper Survey**
American Chestnut *(Castanea dentata)*	**Known to Occur**	*Species and General Habitat Protection*	found in deciduous forest communities; this tree prefers arid forests with acid and sandy soils.	Flowers occur in Late Spring and Early Summer	• Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters • Use a plant field guide to distinguish from similar species • Perform detailed floristic inventory • Look for distinctive fruits on the ground
American Columbo *(Frasera caroliniensis)*	**Known to Occur**	*Species and General Habitat Protection*	most commonly associated with open deciduous forested slopes, thickets and clearings; grows in a variety of relatively stable habitats as well as on a wide variety of soils	Germination and development of the rosette begin in early spring; Flowers open in May; Fruit production continues until October or November	• Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters • Use a plant field guide to distinguish from similar species • Look for spikes from last years flowers
American Ginseng *(Panax quinquefolius)*	**Known to Occur**	*Species and General Habitat Protection*	grows in rich, moist, undisturbed and relatively mature deciduous woods in areas of neutral soil (such as over limestone or marble bedrock).	Flowering begins in June and continues until August; The fruit develop from July to August and ripen in August and September	• Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters • Use a plant field guide to distinguish from similar species
Broad Beech Fern *(Phegopteris hexagonoptera)*	**Known to Occur**	*N/A*	generally inhabits shady areas of beech and maple forests where the soil is moist or wet	The frond of the Broad Beech Fern appears towards the end of May	• Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters • Use a plant field guide to distinguish from similar species
Butternut *(Juglans cinerea)*	**Known to Occur**	*Species and General Habitat Protection*	generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows	Flowers from April to June. Fruits reach maturity during the month of September or October	Walk slowly and systematically in grid fashion through suitable habitat pausing every 30 meters for a detailed scan of trees within sight. Areas with dense foliage or many saplings will require a more intensive survey to detect sapling butternut and yearlings Look for distinctive fruit on the ground
Eastern Flowering Dogwood *(Cornus florida)*	**Known to Occur**	*Species Protection and* ***Habitat Regulation***	generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments; Also grows around edges and hedgerows	flowering occurs in mid-spring, just as the leaves begin to develop. Fruit turns red at the end of summer.	• Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters • Use a plant field guide to distinguish from similar species • Easiest to detect during Spring when in flower • Also look for distinctive bark
Few-flowered Club-rush *(Trichophorum planifolium)*	**Known to Occur**	*Species Protection and* ***Habitat Regulation***	generally found in Dry Fresh Oak deciduous forests and Dry Fresh Oak-Maple-Hickory deciduous forests (only found on RBG property)	Plants flower early before the forest canopy leafs in	• Seaches for this species should only be done in March or April, when the species is most visible • Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters • Distinguishing this species from similar species is difficult and requires collection of plant material, which requires a 17 (2)(b) permit
Green Dragon *(Arisaema dracontium)*	**Known to Occur**	*N/A*	generally grows in damp deciduous forests and along streams.	Flowering occurs in May and June	• Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters • Use a plant field guide to distinguish from similar species
Hoary Mountain Mint (*Pycnanthemum incanum*)	**Known to Occur**	*Species and General Habitat Protection*	Oak savannas and prairies	Flowering occurs in July	• Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters • Use a plant field guide to distinguish from similar species
Red Mulberry *(Morus rubra)*	**Known to Occur**	*Species and General Habitat Protection*	generally grows in moist forest habitats. In Ontario, these include slopes and ravines of the Niagara Escarpment, and sand spits and bottom lands; Can grow in open areas such as hydro corridors	Flowering occurs when leaves emerge in late spring. Fruit emerges in Mid-July.	• Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters • Use a plant field guide to distinguish from the similar White Mulberry • Distinguishing Red Mulberry and the hybrid Red and White Mulberry will require the collection of leaves for generic testing, which requires a 17(2)(b) permit
Spotted Wintergreen *(Chimaphila maculata)*	**Historically Known to Occur**	*Species and General Habitat Protection*	generally grow in sandy habitats in dry-mesic oak-pine woods. In Canada, they grow very close to the Great Lakes	Flowering occurs in late July to early August	• Watch for the distinct evergreen leaves in suitable habitat • May be easiest to search in fall and spring
White Wood Aster *(Eurybia divaricata)*	**Known to Occur**	*Species and General Habitat Protection*	generally grows in open, dry, deciduous forests. It has been suggested that it may benefit from some disturbance, as it often grows along trails.	Flowering occurs in early September, and sets fruit later in the month	• Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters • Use a plant field guide to distinguish from similar species

REPTILES		ESA Protection	**Key Habitats Used By Species**	**Timing Of Life History Events**	**How to Conduct a Proper Survey**

Blanding's Turtle *(Emydonidea blandingii)*	**Known to Occur**	*Species and General Habitat Protection*	generally occur in freshwater lakes, permanent or temporary pools, slow-flowing streams, marshes and swamps. They prefer shallow water that is rich in nutrients, organic soil and dense vegetation. Adults are generally found in open or partially vegetated sites, and juveniles prefer areas that contain thick aquatic vegetation including sphagnum, water lilies and algae. They dig their nest in a variety of loose substrates, including sand, organic soil, gravel and cobblestone. Overwintering occurs in permanent pools that average about one metre in depth, or in slow-flowing streams.	Eggs are laid in June, with hatchlings emerging in late September and early October.	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol
Eastern Hog-nosed Snake *(Heterodon platirhinos)*	**Historically Known to Occur and May Still Occur**	*Species and General Habitat Protection*	generally prefer habitats with sandy, well-drained soil and open vegetative cover, such as open woods, brushland, fields, forest edges and disturbed sites. The species is often found near water.	Mating occurs in spring and in August and early September. Hatching occurs in late August or early September	• In early spring, look for individuals near ideal hibernation sites • During egg-laying period (June), look for nesting females in sandy areas in early morning and late evening. • Rest of the season, survey intensively and systematically by flipping rocks and examining small shrubs in forest openings while listening carefully for hissing or retreat of the animal • More active at Dusk
Eastern Ribbonsnake *(Thamnophis sauritus)*	**Known to Occur**	*N/A*	generally occur along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.	Hibernate: October - April Mating: Early Spring Hatching: Early Fall (September)	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol
Milksnake *(Lampropeltis triangulum)*	**Known to Occur**	*N/A*	generally occur in rural areas, where it is most frequently reported in and around buildings, especially old structures. It is also found in a wide variety of habitats, from prairies, pastures, and hayfields, to rocky hillsides and a wide variety of forest types. They must also be in proximity of water, and suitable locations for basking and egg-laying.	Active at dawn and dusk in the spring and fall, and at night in the summer. Hibernate: Late October to Early May	Contact MNR Guelph District SAR Bio to obtain a copy of the protocol
Northern Map Turtle *(Graptemys geographica)*	**Known to Occur**	*N/A*	generally inhabits both lakes and rivers, showing a preference for slow moving currents, muddy bottoms, and abundant aquatic vegetation. These turtles need suitable basking sites (such as rocks and logs) and exposure to the sun for at least part of the day.	Active: At night Hibernate: October - April Hatching: Late August - Early September	• scan shoreline in spring and partially submerged logs/rocks in summer for basking turtles • Be aware that map turtles do not allow as close of approach as other turtles before leaving a basking site • Snorkel in desired aquatic habitat! • Nesting season: search suitable habitat for nests
Snapping Turtle *(Chelydra serpentina)*	**Known to Occur**	*N/A*	generally inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravely or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.	Nesting: Late May and June Hibernate: October - April	• Scan offshore rocks and logs for basking turtles (10am-2pm) • Snorkel in desired aquatic habitat! • Nesting Season: Search known or preferred nesting habitat areas for females
Spiny Softshell *(Apalone spinifera)*	**Known to Occur**	*Species and General Habitat Protection*	generally prefer marshy creeks, swift-flowing rivers, lakes, impoundments, bays, marshy lagoons, ditches and ponds near rivers	Lay eggs in June or July Hibernate over winter	• Best time to survey is during nesting season when females are active laying eggs • Visual searches should be conducted in appropriate habitat

Jump to: **List of Municipalities**

Species		Ranking					Source	Key Habitats Used By Species	Assessment of Species Occurrence in Study Area
Scientific Name	Common Name	COSEWIC	COSSARO	G-Rank	S-Rank	Hamilton			
BIRDS									
Empidonax virescens	Acadian Flycatcher	END	END	G5	S2, S3B	Rare	MNRF	Generally requires large areas of mature, undisturbed forest; avoids the forest edge; found in well wooded swamps and ravines.	**Not Present:** This species was not observed during breeding bird surveys.
Haliaeetus leucocephalus	Bald Eagle	NAR	SC	G5	S2N, S4B	Rare	MNRF	Prefers deciduous and mixed deciduous forest; and habitat close to water bodies such as lakes and rivers.	**Not Present:** This species was not observed during breeding bird surveys.
Tyto alba	Barn Owl	END	END	G5	S1	Extirpated	SCUBE	Prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. Nest inside or outside of buildings; under bridges and in road culverts; on rocky faces and in caves.	**Not Present**: This species is Extirpated from Hamilton.
Hirundo rustica	Barn Swallow	THR	THR	G5	S4B	Common	MNRF/ SCUBE	Prefers farmland, lake/river shorelines, wooded clearings, urban populated areas, rocky cliffs and wetlands. They nest inside or outside buildings, under bridges and in road culverts, or on rock faces and caves.	**Present**: This species was observed during breeding bird surveys.
Nycticorax nycticorax	Black-crowned Night-heron	-	-	G5	S3B, S3N	Uncommon	NHIC	Shallow cattail and bulrush marshes, lakeshores, and along slow rivers.	**Not Present**: Potentially suitable habitat is not present within the study area.
Chlidonias niger	Black Tern	NAR	SC	G4	S3B	Extirpated	MNRF	Generally prefers freshwater marshes and wetlands; nest either on floating materials in a marsh or on the ground very close to water.	**Not Present**: This species is Extirpated from Hamilton and was not observed during breeding bird studies.
Dolichonyx oryzivorus	Bobolink	THR	THR	G5	S4B	Uncommon	MNRF/ SCUBE	Generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands.	**Present:** This species was identified in ELC polygon 1 during breeding bird surveys.
Cardellina canadensis	Canada Warbler	THR	SC	G5	S4B	Rare	MNRF	Generally prefers wet coniferous, deciduous and mixed forest types, with a dense shrub layer.	**Not Present:** This species was not observed during breeding bird surveys.
Setophaga cerulean	Cerulean Warbler	END	THR	G4	S3B	Rare	MNRF	Generally found in mature deciduous forests with an open understory.	**Not Present:** This species was not observed during breeding bird surveys.
Chaetura pelagica	Chimney Swift	THR	THR	G5	S4B, S4N	Uncommon	MNRF/ SCUBE	Historically found in deciduous and coniferous, usually wet forest types, all with a well-developed, dense shrub layer. Now, most are found in urban areas in large, uncapped chimneys.	**Not Present:** This species was not observed during breeding bird surveys.
Chordeiles minor	Common Nighthawk	THR	SC	G5	S4B	Rare	MNRF	Open ground; Clearings in dense forests; ploughed fields; gravel beaches or barren areas with rocky soils; open woodlands; flat gravel roofs.	**Not Present:** This species was not observed during breeding bird surveys.

Species		Ranking					Source	Key Habitats Used By Species	Assessment of Species Occurrence in Study Area
Scientific Name	Common Name	COSEWIC	COSSARO	G-Rank	S-Rank	Hamilton			
Sturnella magna	Eastern Meadowlark	THR	THR	G5	S4B	Uncommon	MNRF/ SCUBE	Open grasslands and hay fields. The MNRF defines general habitat as the nest and suitable habitat within 300 metres of a nest or centre of defended territory (MNRF 2013).	**Not Present:** This species was not observed during breeding bird surveys.
Antrostomus vociferus	Eastern Whip-poor-will	THR	THR	G5	S4B	Rare	MNRF	Generally prefer semi-open deciduous forests or patchy forests with clearings; areas with littler ground cover are also preferred.	**Not Present:** This species was not observed during breeding bird surveys.
Contopus virens	Eastern Wood-Pewee	SC	SC	G5	S4B	Common	MNRF	Associated with deciduous and mixed forests.	**Not Present:** This species was not observed during breeding bird surveys.
Vermivora chrysoptera	Golden-winged Warbler	THR	SC	G4	S4B	Rare	MNRF	Generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas.	**Not Present:** This species was not observed during breeding bird surveys.
Ammodramus henslowii	Henslow's Sparrow	END	END	G4	NHB	Extirpated	MNRF	Large, fallow grassy area with ground mat of dead vegetation, dense herbaceous vegetation, ground litter and some song perches; neglected weedy fields; wet meadows; cultivated uplands; a moderate amount of moisture needed; requires a minimum tract of grassland of 40 ha, but usually in areas >100 ha.	**Not Present:** This species was not observed during breeding bird surveys.
Rallus elegans	King Rail	END	END	G4	S2B	Extirpated	MNRF	Generally requires large marshes with open shallow water that merges with shrubby areas.	**Not Present:** This species was not observed during breeding bird surveys.
Ixobrychus exilis	Least Bittern	THR	THR	G5	S4B	Rare	MNRF	Generally located near pools of open water in relatively large marshes and swamps dominated by cattail and other robust emergent plants.	**Not Present:** This species was not observed during breeding bird surveys and species not observed during breeding bird surveys.
Parkesia motacilla	Louisiana Waterthrush	THR	SC	G5	S3B	Rare	MNRF	Generally inhabits mature forests along steeply sloped ravines adjacent to running water. It prefers clear, cold streams and densely wooded swamps.	**Not Present**: Potentially suitable habitat is not present within the study area.
Falco peregrinus	Peregrine Falcon	SC	SC	G4	S3B	Rare	MNRF	Nests on tall, steep cliff ledges adjacent to large waterbodies; some birds adapt to urban environments and nest on ledges of tall buildings, even in densely populated areas.	**Not Present:** This species was not observed during breeding bird surveys and potentially suitable habitat is not present.
Protonotaria citrea	Prothonotary Warbler	END	END	G5	S1B	Rare	MNRF	Generally found in the dead trees of flooded woodlands or deciduous swamp forests; Carolinian Zone.	**Not Present:** This species was not observed during breeding bird surveys.

Species		Ranking					Source	Key Habitats Used By Species	Assessment of Species Occurrence in Study Area
Scientific Name	Common Name	COSEWIC	COSSARO	G-Rank	S-Rank	Hamilton			
Melanerpes erythrocephalus	Red-headed Woodpecker	THR	SC	G5	S4B	Rare	MNRF	Generally prefers open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks.	**Not Present:** This species was not observed during breeding bird surveys.
Asio flammeus	Short-eared Owl	SC	SC	G5	S2N, S4B	Rare	MNRF	Grasslands, open areas or meadows that are grassy or bushy; marshes, bogs or tundra; both diurnal and nocturnal habits; ground nester; destruction of wetlands by drainage for agriculture is an important factor in the decline of this species; home range 25-125 ha; requires 75-100 ha of coniferous open habitat. Also prefers old pastures and agricultural fields.	**Not Present**: This species was not observed during breeding bird surveys.
Hylocichla mustelina	Wood Thrush	THR	-	G5	S4B	Common	MNRF	Sibley et al. (2001) describes of the habitat requirements of the wood thrush to include undisturbed moist mature deciduous or mixed forest with deciduous sapling growth often near a pond or swamp; as well as hardwood forest edges; the forest must have some trees higher than 12 metres.	**Not Present**: This species was not observed during breeding bird surveys.
Icteria virens	Yellow-breasted Chat	END	END	G5	S2B	Rare	MNRF	Thickets, tall tangles of shrubbery beside streams, ponds; overgrown bushy clearings with deciduous thickets; nests above ground in bush, vines etc.	**Not Present**: This species was not observed during breeding bird surveys.
INSECTS									
Danaus plexippus	Monarch	SC	SC	G4	S2N,S4B	Common	MNRF	Exist primarily where milkweed and wildflowers exist. This includes abandoned farmland, roadsides and other open spaces.	**Present:** Three adult monarch were observed nectaring within wetlands complexed within ELC polygons 1 and 5.
Bombus affinis	Rusty-patched Bumble Bee	END	END	G1	S1	N/A	MNRF	Generally inhabits a range of diverse habitats including mixed farmlands, sand dunes, marshes, urban and wooded areas. It usually nests underground in abandoned rodent burrows.	**Not Present:** Since 2002, this species has only been recorded in Ontario at Pinery Provinicial Park.
Pieris virginiensis	West Virginia White		SC	G3?	S3	Uncommon	MNRF	Generally prefer moist, deciduous woodlands. The larvae feed only on the leaves of the two-leaved toothwort (*Cardamine diphylla*), which is a small, spring-blooming plant of the forest floor.	**Potentially Present:** Preferred larval food plant not identified in areas subject to floral surveys. However, potentially suitable habitat for the plant is present within the forest (FODM7-2) at the downstream end of Watercourse 6.0.

Species		Ranking					Source	Key Habitats Used By Species	Assessment of Species Occurrence in Study Area
Scientific Name	Common Name	COSEWIC	COSSARO	G-Rank	S-Rank	Hamilton			
Erynnis martialis	Mottled Duskywing	END	-	G3	S2	Rare	MNRF	Dry habitats with sparse vegetation. These include open barrens, sandy patches among woodlands, and alvars. In Ontario, the mottled duskywing will only deposit their eggs on two closely-related plants: New Jersey tea and prairie redroot.	**Not present:** According to the 2014 Hamilton NAI, only found in the Waterdown Escarpment Woods and Halton portion of the Clappison Escarpment Woods. Host plants and preferred habitat not present on site.
MAMMALS									
Perimyotis subflavus	Tri-colored Bat	END	END				-	Overwintering habitat: Caves and mines that remain above freezing. Maternity roosts are established within live and dead foliage within or below the forest canopy, typically in oak trees and less often in maples (*Acer* spp.). This species rarely roosts in buildings.	**Overwintering habitat, not present:** Caves and mines are not present within the study area. **Maternity roosts, potentially present**: It is not known if maternity roosting habitat is present within the study area. According to the most recent *Survey Protocol for Species at Risk Bats within Treed Habitats* (MNRF, 2017), "any coniferous, deciduous, or mixed wooded ecosite, including treed swamps, that includes trees at least 10 cm diametre-at-breast height (dbh) should be considered suitable maternity roost habitat", to be confirmed through further study.
Myotis lucifugus	Little Brown Myotis	END	END	G3	S4	Uncertain	MNRF	Overwintering habitat: Caves and mines that remain above freezing. Maternal roosts: Often associated with buildings (attics, barns, etc.), occasionally found in trees with cracks, loose bark, and cavities in varying stages of decay.	
Myotis septentrionalis	Northern Myotis	END	END	G1G2	S3	Uncertain	MNRF	Overwintering habitat: Caves and mines that remain above freezing. Maternal roosts: Associated with buildings (attics, barns, etc.), and found in trees with cracks, loose bark, and cavities in varying stages of decay.	
Taxidea taxus	American Badger	END	END	G5	S2	Rare	SCUBE	Open grasslands and oak savannahs; dens in new hole or enlarged existing hole.	**Not Present**: Potentially suitable habitat is not present within the study area.
Urocyon cinereoargenteus	Grey Fox	THR	THR	G5	S1	N/A	MNRF	According to the NHIC, the Grey Fox is a poorly understood species in Ontario. Not uncommon 350+ years ago but absent from c. 1650 until the 1940's. Since then, only a few scattered records throughout southern Ontario and in the Rainy River District with little evidence of breeding. Current threats and trends poorly known.	**Not Present:** This species has not been previously recorded in the City of Hamilton.

Species		Ranking					Source	Key Habitats Used By Species	Assessment of Species Occurrence in Study Area
Scientific Name	Common Name	COSEWIC	COSSARO	G-Rank	S-Rank	Hamilton			
PLANTS & LICHENS									
Bacidia trachona	A Lichen			G5	S1S2	N/A	NHIC	Inhabits shaded and sheltered under hangs of calcareous or siliceous rock, on walls and in deep crevices at the base of trunks, on exposed roots of trees, near rivers at water level (Thompson, 1997).	**Not Present**: This species was not identified during flora surveys. Previous records likely came from surveys on the face of the Niagara Escarpment.
Diplotomma epipolium	A Lichen			GNR	S1S2	N/A	NHIC	Found on rock – calcareous, calciferous, basic (Consortium of North American Lichen Herbaria, 2017).	**Not Present**: This species was not identified during flora surveys. Previous records likely came from surveys on the face of the Niagara Escarpment.
Castanea dentata	American Chestnut	END	END	G4	S1S2	Uncommon	MNRF	Moist to well-drained forests on sand, occasionally heavy soils.	**Not Present**: This species was not identified during flora surveys.
Frasera caroliniensis	American Columbo	END	END	G5	S2	Rare	SCUBE	Most commonly associated with open deciduous forested slopes, thickets and clearings.	**Not Present**: This species was not identified during flora surveys.
Phegopteris hexagonoptera	Broad Beech Fern	SC	SC	G5	S3	Rare	MNRF	Shady areas of beech and maple forests where the soil is moist or wet.	**Not Present**: This species was not identified during flora surveys.
Juglans cinerea	Butternut	END	END	G4	S2?	Common	MNRF/ NHIC/ SCUBE	Generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows. The MNRF considers Butternut habitat includes suitable lands within 50 m of a Butternut tree.	**Not Present**: This species was not identified during flora surveys and targeted area search for this species.
Cornus florida	Eastern Flowering Dogwood	END	END	G5	S2?	Common	MNRF	Generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments. Also grows around edges and hedgerows.	**Not Present**: This species was not identified during flora surveys.
Trichophorum planifolium	Few-flowered Clubrush	END	END	G4G5	S1	Rare	MNRF	Generally found in Dry Fresh Oak deciduous forests and Dry Fresh Oak-Maple-Hickory deciduous forests (only found on Royal Botanical Gardens property).	**Not Present**: This species was not identified during flora surveys.
Carex hirsutella	Fuzzy-wuzzy Sedge			G5	S3	N/A	Colville Consulting Inc., Aquafor Beech Limited	Open woods and old fields. Often grows in association with oaks (*Quercus* spp.).	**Present**: This species was first identified in 2012 by Colville Consulting Inc.. Aquafor Beech Ltd. confirmed the species' presence during a site visit conducted on June 9th 2016.

Species		Ranking					Source	Key Habitats Used By Species	Assessment of Species Occurrence in Study Area
Scientific Name	Common Name	COSEWIC	COSSARO	G-Rank	S-Rank	Hamilton			
Arisaema dracontium	Green Dragon	SC	SC	G5	S3	Rare	MNRF, NHIC	Generally grows in damp deciduous forests and along streams (MNRF 2000).	**Not Present**: This species was not identified during flora surveys.
Pycnanthemum incanum	Hoary Mountain Mint	END	END	G5	S1	Rare	MNRF	Oak savannahs and prairies; dry sites.	**Not Present**: This species was not identified during flora surveys.
Uvularia perfoliata	Perfoliate Bellwort			G5	S1S2	Rare	NHIC	Rich woods and thickets.	**Not Present**: This species was not identified during flora surveys.
Morus rubra	Red Mulberry	END	END	G5	S2	Rare	MNRF	Generally prefers moist forest habitats, including slopes and ravines of the Niagara Escarpment and sand spits and bottomlands. According to the MNRF, Category 1 habitat for the species is lands within 25 m of a tree. Category 2 habitat is suitable (e.g. forested) habitat between 25 and 125 m of a tree (MNRF 2013).	**Not Present**: This species was not identified during flora surveys.
Chimaphila maculata	Spotted Wintergreen	END	END	G5	S1	Rare	MNRF	Generally grow in sandy habitats in dry-mesic oak-pine woods.	**Not Present**: This species was not identified during flora surveys.
Eurybia divaricata	White Wood Aster	THR	THR	G5	S2	Rare	MNRF	Generally grows in open, dry, deciduous forests. May benefit from some disturbance, as it often grows along trails. (MNRF 2000)	**Not Present**: This species was not identified during flora surveys.
REPTILES									
Emydoidea blandingii	Blanding's Turtle	THR	THR	G4	S3	Rare	MNRF	Generally occur in freshwater lakes, permanent or temporary pools, slow flowing streams, marshes and swamps. They prefer shallow water that is rich in nutrients, organic soil and dense vegetation. Adults are generally found in open or partially vegetated sites, and juveniles prefer areas that contain thick aquatic vegetation including sphagnum, water lilies, and algae. They dig their nest in a variety of loose substrates, including sand, organic soil, gravel and cobblestone. Overwintering occurs in permanent pools that average about one metre in depth, or in slow-flowing streams.	**Not Present**: Potentially suitable habitat for this species is not present within the study area.
Heterodon platirhinos	Eastern Hog-nosed Snake	THR	THR	G5	S3	-	MNRF	Sandy upland fields, pastures, savannahs, sandy beaches, dry open oak-pine-maple forest with sandy soils, prefer forest areas > 5 ha.	**Not Present**: Potentially suitable habitat for this species is not present within the study area.

Species		Ranking					Source	Key Habitats Used By Species	Assessment of Species Occurrence in Study Area
Scientific Name	Common Name	COSEWIC	COSSARO	G-Rank	S-Rank	Hamilton			
Thamnophis sauritus	Eastern Ribbonsnake	SC	SC	G5	S4	Rare	MNRF	Generally occur along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.	**Not present**: Potentially suitable habitat was present within the study area; however most of the potentially suitable habitat has been recently disturbed or removed, therefore it is very unlikely to be present within the study area.
Graptemys geographica	Northern Map Turtle	SC	SC	G5	S3	Rare	MNRF	Large bodies of water with soft bottoms and aquatic vegetation, basks on logs or rocks or on beaches and grassy edges. Uses soft soil or clean dry sand for nest sites, may nest some distance from water.	**Not Present**: Potentially suitable habitat for this species is not present within the study area.
Lampropeltis triangulum	Eastern Milksnake	SC	NAR	G5	S4	Uncommon	MNRF	Wide variety of habitats including agricultural areas. Often overwinters underground, in rotting logs, or in the foundation of buildings.	**Potentially Present**: Hibernation habitat potentially present within foundation of old buildings and potential foraging habitat is present throughout the study area and adjacent lands. Species was not detected during surveys, though due to the highly secretive nature of this species detection is often difficult.
Chelydra serpentina	Snapping Turtle	SC	SC	G5	S3	Common	MNRF	Generally inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravely or sandy areas along streams. Snapping turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.	**Potentially Present**: Potentially suitable habitat is present within stream corridors.
Apalone spinifera	Spiny Softshell	END	THR	G5	S3	Rare	MNRF	Highly aquatic turtles that rarely travel far from water. They are found primarily in rivers and lakes but also in creeks and even ditches and ponds near rivers. Key habitat requirements are open sand or gravel nesting areas, shallow muddy or sandy areas to bury in, deep pools for hibernation, areas for basking, and suitable habitat for crayfish and other food species.	**Not present:** According to the 2014 Hamilton NAI, confirmed records only exist at Cootes Paradise and Hamilton Harbour. Potentially suitable habitat for this species is not present on the subject property or adjacent lands.
AMPHIBIANS									
Ambystoma jeffersonianum	Jefferson Salamander	END	END	G4	S2	Rare	MNRF/ SCUBE	Woodland vernal pools devoid of predatory fish. Damp, shady deciduous forests, swamps, moist pasture, lakeshores. Uses temporary woodland pools for breeding. Hides under leaf litter, stones, or decomposing logs.	**Not Present**: Potentially suitable habitat is not present within the study area.
FISH									

Species		Ranking					Source	Key Habitats Used By Species	Assessment of Species Occurrence in Study Area
Scientific Name	Common Name	COSEWIC	COSSARO	G-Rank	S-Rank	Hamilton			
Anguilla rostrata	American Eel	THR	END	G4	S1?	Rare	MNRF	Habitat use by eels appears to be extremely diverse and access to a diverse array of habitats is fundamental (Secor 2007, 2010, Secor and Kerr 2009, MacGregor et al. 2009). In addition, there may be important micro-habitat requirements that have not been considered. For example, eels typically overwinter in soft substrates where they burrow into the upper layers of sediment (Jessop et al. 2009). These wintering grounds may be quite specific and need to be located and evaluated in Ontario waters where eels are still present.	**Not present:** Hamilton range is limited to 12 Mile Creek and Lake Ontario. Suitable habitat not present on site.
Esox americanus vermicularus	Grass Pickerel	SC	SC	G5T5	S3	Common	MNRF	Warm, slow-moving streams, ponds and shallow bays of larger lakes, with clear to tea-coloured water, and abundant aquatic vegetation. Bottom substrate is usually mud, but it has also been found over rock and gravel.	**Not present:** Only known from Twenty Mile Creek and the headwaters of the Welland River in Hamilton. Suitable habitat not present on site.
Clinostomus elongatus	Redside Dace	END	END	G3G 4	S2	Rare (Extirpated?)	MNRF	Found in pools and slow-moving areas of small streams and headwaters with a gravel bottom. They are generally found in areas with overhanging grasses and shrubs.	**Not present:** According to the 2014 Hamilton NAI, Redside Dace is possibly Extirpated in Hamilton. Suitable habitat not present on site.
Notropis photogenis	Silver Shiner	THR	THR	G5	S2S3	-	MNRF	Prefer moderate to large size streams with swift currents that are free of weeds and have clean gravel or boulder bottoms, and moderate to high gradients.	**Not Present**: Potentially suitable habitat is not present within the study area.
MUSSELS									
Liguma nasuta	Eastern Pondmussel	END	END	G4	S1	-	MNRF	Typically found in sheltered areas of lakes and in slow-moving areas of rivers and canals with sand or mud bottoms.	**Not Present**: Potentially suitable habitat is not present within the study area. The intermittent nature of the watercourses may be a limiting factor on the ability of the mussels to survive in this area.
Taxolasma parvum	Lilliput	END	-	G5	S1	-	MNRF	Found in a variety of soft river bottoms, such as mud, sand, and silt. Lilliputs burrow in these soft materials to filter-feed.	**Not Likely**: Potentially suitable habitat is not present within the study area. The intermittent nature of the watercourses may be a limiting factor on the ability of the mussels to survive in this area.

Species		Ranking					Source	Key Habitats Used By Species	Assessment of Species Occurrence in Study Area
Scientific Name	Common Name	COSEWIC	COSSARO	G-Rank	S-Rank	Hamilton			
Villosa iris	Rainbow Mussel	SC	THR	G5Q	S2S3	-	MNRF	Prefers small to medium-sized rivers with a moderate to strong current and sand, rocky, or gravel bottoms. It is found in or near riffle areas and along the edges of vegetation in water less than one metre deep.	**Not Present**: Potentially suitable habitat is not present within the study area.

Appendix F: Significant Wildlife Habitat Assessment

Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
Waterfowl Stopover and Staging Areas (Terrestrial) **Rationale:** Habitat important to migrating waterfowl.	American Black Duck Northern Pintail Gadwall Blue-winged Teal Green-winged Teal American Wigeon Northern Shoveler Tundra Swan	CUM1 CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites. - Fields with seasonal flooding and waste grains in the Long Point, Rondeau, Lk. St. Clair, Grand Bend and Pt. Pelee areas may be important to Tundra Swans.	Fields with sheet water during Spring (mid-March to May). •Fields flooding during springmelt and run-off provide important invertebrate foraging habitat for migrating waterfowl. • Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available.	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • Any mixed species aggregations of 100 or more individuals required. • The flooded field ecosite habitat plus a 100-300 m radius, dependant on local site conditions and adjacent land use is the significant wildlife habitat. • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). •SWH MISTIndex #7 provides development effects and mitigation measures.	**Not present**: characteristic wildlife and habitats not present within or immediately adjacent to the study area.

Waterfowl Stopover and Staging Areas (Aquatic) **Rationale:** Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. • These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water)	Studies carried out and verified presence of: Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH • The combined area of the ELC ecosites and a 100 m radius area is the SWH • Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). • SWH MIST Index #7 provides development effects and mitigation	**Not present**: characteristic wildlife and habitats not present within the study area.
Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	

Shorebird Migratory Stopover Area **<u>Rationale:</u>** High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden- Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin	BBO1 BBO2 BBS1BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. • Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. • Sewage treatment ponds and storm water ponds do not qualify as a SWH. <u>Information Sources</u> • Western hemisphere shorebird reserve network. • Canadian Wildlife Service (CWS) Ontario Shorebird Survey. • Bird Studies Canada • Ontario Nature • Local birders and naturalist clubs • Natural Heritage Information Centre (NHIC) Shorebird Migratory Concentration Area	Studies confirming: Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #8 provides development effects and mitigation measures.	**Not present**: characteristic wildlife and habitats not present within the study area.

Raptor Wintering Area **Rationale:** Sites used by multiple species, a high number of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl **Special Concern:** Short-eared Owl Bald Eagle	Hawks/Owls: Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. Bald Eagle: Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	• The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. Raptor wintering (hawk/owl) sites need to be > 20 ha with a combination of forest and upland. • Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands • Field area of the habitat is to be wind swept with limited snow depth or accumulation. • Eagle sites have open water and large trees and snags available for roosting Information Sources: • OMNRF Ecologist or Biologist • Naturalist clubs • Natural Heritage Information Centre (NHIC) Raptor Winter Concentration Area • Data from Bird Studies Canada • Results of Christmas Bird Counts • Reports and other information available from Conservation Authorities.	Studies confirm the use of these habitats by: One or more Short-eared Owls or; One of more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #10 and • #11 provides development effects and mitigation measures.	**Not present**: characteristic wildlife and habitats not present within the study area.
Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	

Bat Hibernacula **Rationale:** Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	• Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. • Active mine sites should not be considered as SWH • The locations of bat hibernacula are relatively poorly known. Information Sources • OMNRF for possible locations and contact for local experts • Natural Heritage Information Centre (NHIC) Bat Hibernaculum • Ministry of Northern Development and Mines for location of mine shafts. • Clubs that explore caves (eg. Sierra Club) • University Biology Departments with bat experts.	• All sites with confirmed hibernating bats are SWH . • The area includes 200m radius around the entrance of the hibernaculum for most development types and 1000m for wind farms. • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects". • SWH MIST Index #1 provides development effects and mitigation measures.	**Not present**: characteristic habitats not present within or immediately adjacent to the study area.

Bat Maternity Colonies
 	
Rationale: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.
	Big Brown Bat
	Silver-haired Bat
		Maternity colonies considered SWH are found in forested Ecosites.
		
		All ELC Ecosites in ELC Community Series:
		FOD FOM SWD SWM
			• Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH).
			• Maternity roosts are not found in caves and mines in Ontario.
			• Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees
			Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2.
			• Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred.
			
			Information Sources
			• OMNRF for possible locations and contact for local experts
			• University Biology Departments with bat experts.
				• Maternity Colonies with confirmed use by;
				  • >10 Big Brown Bats
				  • >5 Adult Female Silver- haired Bats
				• The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies.
				Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects".
				• SWH MIST Index #12 provides development effects and mitigation measures.
					Potentially present: Myotis spp. and silver-haired bats may be using treed habitats within the study area as maternity roosting habitat. Treed habitats within the study area include: ELC polygons 2, 3, 8, and 10; as well as the forest (FODM7-2) and treed swamp (SWDM2-2) communities in the north east and south, respectively.
					Surveys for bats were not conducted as part of this study.

Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
Turtle Wintering Areas **<u>Rationale:</u>** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle **<u>Special Concern:</u>** Northern Map Turtle Snapping Turtle	Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	• For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen • Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. <u>Information Sources</u>: EIS studies carried out by Conservation Authorities. • Field Naturalists Clubs • OMNRF Ecologist or Biologist Natural Heritage Information Centre (NHIC)	• Presence of 5 over-wintering Midland Painted Turtles is significant. • One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. • The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep- water pool where the turtles are over wintering is the SWH. Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May). Congregation of turtles is more common where wintering areas are limited and therefore significant. • SWH MIST Index #28 provides development effects and mitigation measures for turtle wintering habitat.	**Not present**: characteristic wildlife and habitats not present within or immediately adjacent to the study area.

Reptile Hibernaculum **Rationale:** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	**Snakes:** Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake **Special Concern:** Milksnake Eastern Ribbonsnake	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line. Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Information Sources • In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells). • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs • University herpetologists • Natural Heritage Information Centre (NHIC)	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) • Note: If there are Special Concern Species present, then site is SWH Note: Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH • SWH MIST Index #13 provides development effects and mitigation measures for snake hibernacula.	**Not present**: characteristic congregations of wildlife were not observed within the study area, nor were potential hibernaculum sites.

Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	

Colonially - Nesting Bird Breeding Habitat (Bank and Cliff) **Rationale:** Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation. Information Sources Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas • Bird Studies Canada; *NatureCounts* http://www.birdscanada.org/birdmon/ Field Naturalist Clubs.	Studies confirming: • Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #4 provides development effects and mitigation measures	**Not present**: characteristic wildlife and representative habitats not present within or immediately adjacent to the study area.

Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs) **Rationale:** Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	• Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. • Most nests in trees are 11 to 15 m from ground, near the top of the tree. Information Sources • Ontario Breeding Bird Atlas, colonial nest records. • Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF). • Natural Heritage Information Centre (NHIC) Mixed Wader Nesting Colony • Aerial photographs can help identify large heronries. • Reports and other information available from Conservation Authorities. • MNRF District Offices. • Field Naturalist Clubs.	Studies confirming: • Presence of 2 or more active nests of Great Blue Heron or other listed species. • The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells • SWH MIST Index #5 provides development effects and mitigation measures.	**Not present**: characteristic wildlife and representative habitats not present within or immediately adjacent to the study area.
Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	

Colonially - Nesting Bird Breeding Habitat (Ground) **Rationale:** Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6; MAS1 – 3; CUM CUT CUS	• Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. • Brewers Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands. Information Sources • Ontario Breeding Bird Atlas, rare/colonial species records. • Canadian Wildlife Service • Reports and other information available from Conservation Authorities. • Natural Heritage Information Centre (NHIC) Colonial Waterbird Nesting Area • MNRF District Offices. • Field Naturalist Clubs.	Studies confirming: • Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. • Presence of 5 or more pairs for Brewer's Blackbird. • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. • The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH • Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #6 provides development effects and mitigation measures.	**Not present**: characteristic wildlife and representative habitats not present within or immediately adjacent to the study area.

Migratory Butterfly Stopover Areas **Rationale:** Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral Special Concern Monarch	Combination of ELC Community Series; need to have present one Community Series from each landclass: Field: CUM CUT CUS Forest: FOC FOD FOM CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Erie or Lake Ontario. • The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south. The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. • Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes Information Sources • MNRF District Offices • Natural Heritage Information Centre (NHIC) • Agriculture Canada in Ottawa may have list of butterfly experts. • Field Naturalist Clubs • Toronto Entomologists Association • Conservation Authorities	Studies confirm: The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. MUD of >5000 **or** >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant. • SWH MIST [cxlix] Index #16 provides development effects and mitigation measures.	**Not Present:** Three monarchs were observed foraging within wetlands in the study area; however the number of Monarch Use Days (3000-5000) was not observed. In addition, the disturbance regime of forests, meadows and wetlands within the study area (i.e. agricultural management practices and tree removal) does not support the growth and development of Monarchs and would disqualify the study area as a potential stopover area.
Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	

Landbird Migratory Stopover Areas **<u>Rationale:</u>** Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds. Canadian Wildlife Service Ontario website: http://www.ec.gc.ca/nature/ default.asp?lang=En&n =42 1B7A9D-1 All migrant raptors species: Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	• Woodlots >5 ha in size and within 5 km of Lake Erie and Lake Ontario. If woodlands are rare in an area of shoreline, woodland fragments 2-5ha can be considered for this habitat • If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Erie and Lake Ontario are more significant • Sites have a variety of habitats; forest, grassland and wetland complexes. • The largest sites are more significant • Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Erie and Lake Ontario are Candidate SWH. <u>Information Sources</u> • Bird Studies Canada • Ontario Nature • Local birders and field naturalist clubs • Ontario Important Bird Areas (IBA) Program	Studies confirm: • Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Mar to May) and fall (Aug to Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #9 provides development effects and mitigation measures.	**Not present**: The study area is located just over 1.5 km from the shoreline of Lake Ontario and contains several woodlands. However, the largest remaining woodland in the study area (ELC polygons 7 & 8, collectively) is under 2 ha in size.

Deer Winter Congregation Areas **Rationale:** Deer movement during winter in the southern areas of Eco- region 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions [cxlviii].	White-tailed Deer	All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	• Woodlots >100 ha in size or if large woodlots are rare in a planning area woodlots>50ha • Deer movement during winter in the southern areas of Ecoregion 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands. • Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha . • Woodlots with high densities of deer due to artificial feeding are not significant. Information Sources • MNRF District Offices. • LIO/NRVIS	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF. • Use of the woodlot by white- tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey. • SWH MIST Index #2 provides development effects and mitigation measures.	**Not Present:** Potentially suitable habitat is not present within the study area.

Significant Wildlife Habitat Type: Rare Vegetation Communities or Specialized Habitat for Wildlife

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Potential for Candidate and/or Confirmed SWH on Subject Property
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Cliffs and Talus Slopes **Rationale:** Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO CLO TAS CLS TAT CLT	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris	Most cliff and talus slopes occur along the Niagara Escarpment. Information Sources The Niagara Escarpment Commission has detailed information on location of these habitats. • OMNRF Districts • Natural Heritage Information Centre (NHIC) has location information available on their website • Field Naturalist Clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes • SWH MIST Index #21 provides development effects and mitigation measures.	**Not Present**: This vegetation community type was not identified during vegetation community surveys.

Sand Barren **Rationale:** Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry	ELC Ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket- like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%.	A sand barren area >0.5ha in size. Information Sources • OMNRF Districts. • Natural Heritage Information Centre (NHIC) has location information available on their website. • Field Naturalist Clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Sand Barrens • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWH MIST[cxlix] Index #20 provides development effects and mitigation measures.	**Not Present:** This vegetation community type was not identified during vegetation community surveys.
Alvar **Rationale:** Alvars are extremely rare habitats in Ecoregion 7E.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 **Five Alvar Indicator Species:** 1) *Carex crawei* 2) *Panicum philadelphicum* 3) *Eleocharis compressa* 4) *Scutellaria parvula* 5) *Trichostema brachiatum* These indicator species are very specific to Alvars within Ecoregion 7E	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.	An Alvar site > 0.5 ha in size. Alvar is particularly rare in Ecoregion 7E where the only known sites are found in the western islands of Lake Erie. Information Sources • Alvars of Ontario (2000), Federation of Ontario Naturalists. • Ontario Nature – Conserving Great Lakes Alvars. • Natural Heritage Information Centre (NHIC) has location information available on their website. • OMNRF Staff. • Field Naturalist Clubs. • Conservation Authorities.	• Field studies that identify four of the five **Alvar Indicator Species** at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses • SWH MIST Index #17 provides development effects and mitigation measures.	**Not Present:** This vegetation community type was not identified during vegetation community surveys, nor were characteristic wildlife species.
Significant Wildlife Habitat Type: Rare Vegetation Communities or Specialized Habitat for Wildlife					
Rare Vegetation Community	**Candidate SWH**			**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	

Old Growth Forest **Rationale:** Due to historic logging practices and land clearance for agriculture, old growth forest is rare in Ecoregion 7E.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of over- storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland area is >0.5ha Information Sources • OMNRF Forest Resource Inventory mapping • OMNRF Districts. • Field Naturalist Clubs • Conservation Authorities • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Municipal forestry departments	Field Studies will determine: • If dominant trees species of the are >140 years old, then the area containing these trees is Significant Wildlife Habitat • The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present) • The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWH. • Determine ELC vegetation types for the forest forest area containing the old growth characteristics • SWH MIST Index #23 provides development effects and mitigation measures.	**Not Present**: Old growth forest was not identified during vegetation community surveys.
Savannah **Rationale:** Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60% In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).	No minimum size to site Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources Natural Heritage Information Centre (NHIC) has location data available on their website. • OMNRF Districts. • Field Naturalists Clubs. • Conservation Authorities.	Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present Note: Savannah plant spp. list from Ecoregion 7E should be used· • Area of the ELC Ecosite is the SWH. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWH MIST Index #18 provides development effects and mitigation measures.	**Not Present:** This vegetation community was not identified during vegetation community surveys.

Tallgrass Prairie **Rationale:** Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).	No minimum size to site Ⓔ. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources • OMNRF Districts. • Natural Heritage Information Centre (NHIC) has location information available on their website. • Field Naturalists Clubs. • Conservation Authorities.	Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 7E should be used • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWH MIST Index #19 provides development effects and mitigation measures.	**Not Present:** This vegetation community was not identified during vegetation community surveys.
Significant Wildlife Habitat Type: Rare Vegetation Communities or Specialized Habitat for Wildlife					
Rare Vegetation Community	**Candidate SWH**			**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
Other Rare Vegetation Communities **Rationale:** Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M The OMNRF/NHIC will have up to date listing for rare vegetation communities. Information Sources • Natural Heritage Information Centre (NHIC) has location information available on their website. • OMNRF Districts. • Field Naturalists Clubs. • Conservation Authorities.	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG. • Area of the ELC Vegetation Type polygon is the SWH. • SWH MIST Index #37 provides development effects and mitigation measures.	**Not Present:** Provincially rare vegetation communities were not identified during vegetation community surveys.
Specialized Habitat for Wildlife					
Specialized Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	

Waterfowl Nesting Area **Rationale:** Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 **Note: includes adjacency to Provincially Significant Wetlands**	A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. • Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. Information Sources • Ducks Unlimited staff may know the locations of particularly productive nesting sites. • OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat.Reports and other information available from Conservation Authorities	Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards, or; • Presence of 10 or more nesting pairs for listed species including Mallards. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest. • SWH MIST Index #25 provides development effects and mitigation measures.	**Not present**: characteristic wildlife and representative habitats not present within or immediately adjacent to the study area.

Specialized Habitat for Wildlife					
Specialized Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	

Bald Eagle and Osprey Nesting, Foraging and Perching Habitat **<u>Rationale:</u>** Nest sites are fairly uncommon in Ecoregion 7E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Osprey **Special Concern** Bald Eagle	ELC Forest Community Series: FOD FOM FOC SWD SWM SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. • Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms). <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. • Nature Counts, Ontario Nest Records Scheme data. • OMNRF District. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented • Reports and other information available from Conservation Authorities. • Field Naturalists clubs	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area. • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important. For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area ofthe habitat from 400-800m is dependant on site lines from the nest to the development and inclusion of perching and foraging habitat • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for ≥ 3 years or suspected of not being used for >5 years before being considered not significant. • Observational studies to determine nest site use, perching sites and foraging areas need to be done from early March to mid August. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" SWH MIST Index #26 provides development effects and mitigation measures	**Not present**: characteristic wildlife not present within or immediately adjacent to the study area.

Woodland Raptor Nesting Habitat **<u>Rationale:</u>** Nests sites for these species are rarely identified; these area sensitive habitats are often used annually by these species	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	May be found in all forested ELC Ecosites. May also be found in SWC SWM SWD CUP3	All natural or conifer plantation woodland/forest stands >30ha with >4ha of interior habitat. Interior habitat determined with a 200m buffer Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. <u>Information Sources</u> • OMNRF Districts. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented. • Check data from Bird Studies Canada. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of 1 or more active nests from species list is considered significant. Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH. (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest) • Barred Owl – A 200m radius around the nest is the SWH • Broad-winged Hawk and Coopers Hawk,– A 100m radius around the nest is the SWH. • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. • Conduct field investigations from early March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. • SWH MIST Index #27 provides development effects and mitigation measures.	**Not present**: characteristic wildlife not present within the study area.

Specialized Habitat for Wildlife

Specialized Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Potential for Candidate and/or Confirmed SWH on Subject Property
		ELC Ecosite Codes	Habitat Criteria and Info. Sources	Defining Criteria	

Turtle Nesting Areas **Rationale:** These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Midland Painted Turtle Special Concern Species Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. • For an area to function as a turtle- nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. • Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. Information Sources • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well- drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. • Natural Heritage Information Centre (NHIC) • Field Naturalist Clubs	Studies confirm: Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. • SWH MIST Index #28 provides development effects and mitigation measures for turtle nesting habitat.	**Not Present**: Potentially suitable habitat is not present within the study area.
Seeps and Springs **Rationale:** Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species. Information Sources • Topographical Map. • Thermography. • Hydrological surveys conducted by Conservation Authorities and MOE. • Field Naturalists Clubs and landowners. • Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.	Field Studies confirm: Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat. • SWH MIST Index #30 provides development effects and mitigation measures	**Not Present**: Seeps and springs were not identified during vegetation community surveys.

Specialized Habitat for Wildlife					
Specialized Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
Amphibian Breeding Habitat (Woodland). **<u>Rationale:</u>** These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians	• Presence of a wetland, pond or woodland pool (including vernal pools) >500m2 (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat <u>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records • Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. • OMNRF Districts and wetland evaluations • Field Naturalist clubs • Canadian Wildlife Service Amphibian Road Call Survey • Ontario Vernal Pool Association: http://www.ontariovernalpools.org	Studies confirm; • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the wetland area plus a 230m radius of woodland area . If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. • SWH MIST [cxlix] Index #14 provides development effects and mitigation measures.	**Not Present:** Potentially suitable habitat is present within the study area, however anuran calling surveys indicate that less than the required amount of frogs are present. See Section 4.2.2 for further details.

Amphibian Breeding Habitat (Wetlands) **Rationale:** Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.	• Wetlands>500m^2 (about 25m diameter),supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. • Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. Bullfrogs require permanent water bodies with abundant emergent vegetation. Information Sources • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. • OMNRF Districts and wetland evaluations. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3. **or;** Wetland with confirmed breeding Bullfrogs are significant. The ELC ecosite wetland area and the shoreline are the SWH. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWH MIST Index #15 provides development effects and mitigation measures.	**Not Present:** Potentially suitable habitat is present within the study area, however anuran calling surveys indicate that less than the required amount of frogs are present. See Section 4.2.2 for further details.

Significant Wildlife Habitat Type: Habitats of Species of Conservation Concern Considered SWH					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	

Woodland Area-Sensitive Bird Breeding Habitat **Rationale:** Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Pileated Woodpecker **Special Concern:** Cerulean Warbler Canada Warbler	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	• Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. Interior forest habitat is at least 200 m from forest edge habitat. <u>Information Sources</u> • Local birder clubs. • Canadian Wildlife Service (CWS) for the location of forest bird monitoring. • Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. Conduct field investigations in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #34 provides development effects and mitigation measures.	**Not Present:** Potentially suitable habitat (i.e. interior forest) is not present within the study area.
Marsh Breeding Bird Habitat **<u>Rationale:</u>** Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Green Heron Trumpeter Swan **Special Concern:** Black Tern Yellow Rail	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites.	• Nesting occurs in wetlands. • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. • For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. <u>Information Sources</u> • OMNRF District and wetland evaluations. • Field Naturalist clubs • Natural Heritage Information Centre (NHIC) Records. • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas.	Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren **or** breeding by any combination of 4 or more of the listed species . • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. • Area of the ELC ecosite is the SWH. • Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #35 provides development effects and mitigation measures	**Not present**: characteristic wildlife and representative habitats not present within or immediately adjacent to the study area.

Specialized Habitat for Wildlife					
Specialized Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	

Open Country Bird Breeding Habitat **Rationale:** This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow **Special Concern** Short-eared Owl	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha • Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years). • Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. • The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • EIS Reports and other information available from Conservation Authorities.	Field Studies confirm: • Presence of nesting or breeding of 2 or more of the listed species. • A field with 1 or more breeding Short-eared Owls is to be considered SWH. • The area of SWH is the contiguous ELC ecosite field areas. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #32 provides development effects and mitigation measures	**Not present**: Savannah sparrow was recorded in the eastern portion of the study area at Breeding Bird Survey Stations 1, 2, and 3. However, the largest unbroken area of open habitat within the study area (calculated after extensive forest removals occurred) is approximately 26.5 ha, which is below the minimum 30 ha size. In addition, some of the open country habitats are less than 5 years in age.

Shrub/Early Successional Bird Breeding Habitat **Rationale:** This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.	Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher **Special Concern:** Yellow- breasted Chat Golden-winged Warbler	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species	Large field areas succeeding to shrub and thicket habitats >10 ha in size. • Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row- cropping, haying or live- stock pasturing in the last 5 years). • Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. • Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	Field Studies confirm: Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. • A habitat with breeding Yellow- breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. • The area of the SWH is the contiguous ELC ecosite field/thicket area. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #33 provides development effects and mitigation measures.	**Not present**: Field sparrow was recorded at Breeding Bird Survey Stations 3 and 5. However, characteristic ecosites within the area are well below the 10 ha minimum size.

Specialized Habitat for Wildlife

Specialized Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Potential for Candidate and/or Confirmed SWH on Subject Property
		ELC Ecosite Codes	Habitat Criteria and Info. Sources	Defining Criteria	
Terrestrial Crayfish **Rationale:** Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.	Chimney or Digger Crayfish; (Fallicambarus fodiens) Devil Crayfish or Meadow Crayfish; (Cambarus Diogenes)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh ecosites can be used by terrestrial crayfish.	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. • Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. Information Sources • Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH. • Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult • SWH MIST Index #36 provides	**Not present**: characteristic wildlife and representative habitats not present within or immediately adjacent to the study area. Target species are not known to occur within Hamilton.

				development effects and mitigation measures.	
Specialized Habitat for Wildlife					
Specialized Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
Special Concern and Rare Wildlife Species **<u>Rationale:</u>** These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre (NHIC).	All plant and animal element occurrences (EO) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. • NHIC Website "Get Information": http://nhic.mnr.gov.on.ca • Ontario Breeding Bird Atlas • Expert advice should be sought as many of the rare spp. have little information available about their requirements.	Studies Confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat. • SWH MIST Index #37 provides development effects and mitigation measures.	**Present**: <u>Special Concern species</u> As detailed in Section 4.2.4, Monarch has been confirmed foraging in wetland habitats present in ELC polygons 1 and 5. However, it is not likely that monarch is significantly dependent on these habitats. Rather, the species is taking advantage of nectaring opportunities afforded by wildflowers. It is the therefore the opinion of Aquafor Beech Ltd. that the wetland habitats in which monarch was observed are not significant to the species. <u>Provincially rare species</u> Fuzzy-wuzzy sedge (S3) was recorded on a wetland edge on the border of ELC polygon 1. Other rare species present within the study area include pin oak. The tree in the study area is the only known record within the City of Hamilton. Further discussion is provided in Section 4.2.4. **Potentially present:** <u>Special Concern species</u> There is potential for another species of Special Concern, snapping turtle, to occur along stream corridors, though this species was not observed (incidentally) during field studies. There is potential for Eastern milksnake to occur in natural and semi-natural areas within and adjacent to the study area. This species was not observed during field studies, nor was potential overwintering habitat. Habitat for West Virginia white butterfly may be present in the forest community at the downstream end of Watercourse 6.0 (FODM2-2). This area was not accessed during field surveys.

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix F

RFP / Terms of Reference

CITY OF HAMILTON

REQUEST FOR PROPOSALS

Contract Number: C3-09-14

Professional Consultant Services Required for Block Two of the Fruitland-Winona Block Servicing Strategy

Closes: 3:00:59 pm, Hamilton time
Tuesday December 23, 2014

Procurement Section
Corporate Services Department

TERMS OF REFERENCE

1.0 Introduction

The Fruitland-Winona Secondary Plan area is characterized by a relatively flat topography which requires specific grading and detailed servicing provisions to adequately service the future development area so development proceeds in a coordinated and comprehensive manner. The purpose of this study is to develop a Block Servicing Strategy (BSS) for areas identified in the Fruitland-Winona Secondary Plan – Block Servicing Strategy Area Delineation is shown in Appendix A – Fruitland-Winona Secondary Plan – Block Servicing Strategy Area Delineation.

The Fruitland-Winona Block Servicing Strategy shall be carried out in accordance with the Fruitland-Winona Secondary Plan. Review the Fruitland-Winona Secondary Plan when developing work plan. This Terms of Reference provides an overview of the requirements of the Block Servicing Strategy.

There are three (3) blocks included in the Fruitland-Winona Secondary Plan which require a Block Servicing Strategy:

Block 1: Generally located by Barton Street to the north, Highway 8 to the south, Fruitland Road to the west and east of Jones Road to Stoney Creek numbered watercourse 6. **(BLOCK 1 WILL NOT BE COMPLETED AS PART OF THIS RFP)**

Block 2: Generally located by Barton Street to the north, Highway 8 to the south, watercourse 6 at the west, and Glover Road to the east.

Block 3: Generally located north of Barton Street, Highway 8 to the south, McNeilly Road at the west and east of Lewis Road. **(BLOCK 3 WILL NOT BE COMPLETED AS PART OF THIS RFP)**

The Fruitland-Winona Subwatershed Studies shall form the basis of all Block Servicing Strategies. The BSS shall conform to the vision, objectives and policies of the approved Fruitland-Winona Secondary Plan and shall identify the land use designations, densities and natural heritage features, including Vegetation Protection Zones and Restoration Areas, in accordance with the Secondary Plan. Where it can be achieved, the Block Servicing Strategy shall comply with the Fruitland-Winona Secondary Plan Urban Design Guidelines.

The Block Servicing Strategy shall have regard for existing development in accordance with the Fruitland-Winona Secondary Plan by reflecting the general scale and character of the established development pattern in the surrounding area by taking into consideration lot frontages and areas, building height, coverage, mass, setbacks, privacy and overview. All development within the lands identified as the “Servicing Strategies Area” in the Fruitland-Winona Secondary Plan – Block Servicing Strategy Area Delineation shall conform to the Block Servicing Strategies.

The Block Servicing Strategy will be used in assessing priorities among proposals for development. The preliminary grading plan, layout of local roads, sanitary sewers, storm sewers and stormwater management facilities, watermains shall be defined, together with the phasing of servicing proposed to ensure development is achieved in an efficient and systematic manner within each block area.

The Block Servicing Strategy shall follow the Municipal Class Environmental Assessment Planning process. A public consultation plan shall be developed including the number of meetings to be held with the public and stakeholders.

This Terms of Reference will be for BLOCK 2, generally located by Barton Street to the north, Highway 8 to the south, watercourse 6 at the west, and Glover Road to the east. See Appendix A for boundary.

2.0 Key Tasks & Deliverables

This study is intended to outline the concepts for the servicing of the Fruitland-Winona lands located south of Barton Street, east of Fruitland Road, west of Fifty Road, and north of Highway No. 8.

The Block Servicing Strategy shall include an integration of a Functional Stormwater Management and Environmental Management Plan, and a Functional Servicing Plan forming one comprehensive document. The Environmental Management Plan shall build on the findings of the final sub-watershed study for Stoney Creek Urban Boundary Expansion (SCUBE) watercourses.

The Block Servicing Strategy shall include the following tasks:

- Functional Stormwater Management and Environmental Management Plan; and a
- Functional Servicing Plan

2.1 Functional Stormwater Management and Environmental Management Plan

The Functional Stormwater Management and Environmental Management Plan is intended to build upon the baseline information contained in the subwatershed study and shall be implemented in support of the secondary plan. This study shall address any gaps identified in the subwatershed plan related to servicing, stormwater management and natural heritage features. The level of study would focus on integrating servicing and stormwater management to a greater level of detail than is normally achieved through the subwatershed study.

Stormwater management facilities shall comply with the City's Criteria and Guidelines for Stormwater Infrastructure Design and Policies, the Fruitland-Winona Sub-watershed Studies. In addition, stormwater management facilities:

- shall be located and designed to maintain ecological functions of the Natural Heritage features;
- shall be located adjacent to the Barton Street Pedestrian Promenade and other Open Space Designations where possible;

- shall be designed to provide visual attraction and passive recreation where possible.

The principle objectives and tasks required for a Functional Stormwater Management and Environmental Management Plan include but not limited to:

a. Review final sub-watershed study for SCUBE watercourses. Re-running of the models from the sub-watershed study using the proposed level of impervious coverage and stormwater controls to confirm the existing targets are sufficiently robust to control the increased impervious arrears without causing an increase in downstream flooding and erosion and water quality compliance in accordance with MOE guidelines.
b. Establish basic sub-watershed conditions (peak flows, runoff volumes, and erosion threshold assessment)
c. Determine the preliminary design of the stormwater management systems including the outlet design at each location. This shall include:
    i. Volumetric sizing
    ii. Stage/storage/discharge relationship
    iii. Volume calculations at various facility stages
    iv. Outlet control calculations – drawdown time
    v. Forebay dispersion length
    vi. Minimum forebay deep zone bottom width
    vii. Length/width ratios
    viii. Decanting area
    ix. Maintenance access route to inlet and outlet structures and forebay
    x. Overland flow route to main pond
    xi. Detailed gradients for trunk major and minor system (vertical control)
    xii. Hydraulic grade line (HGL) assessment for storm sewer system.
d. Functional grading and drawings (plan and profile) for each stormwater management facility.
e. Capacity assessment of the receiving system for the proposed storm outlet/SWM facility.
f. Identify drainage constraints relating to existing and post-development flows
g. Screen various stormwater management strategies and techniques and evaluate a reasonable range of alternatives in consideration with the treatment train approach.
h. Recommend stormwater management solutions based on sound evaluations of the natural, social and economic environments of various feasible alternatives.
i. Prepare general drainage plans, outlining both the major and minor systems along with detailed flow limits at critical points.
j. Identify opportunities to integrate passive recreation opportunities with stormwater management strategy.
k. Identify opportunities for phasing of construction of stormwater facilities.
l. Functional design of proposed realignment of watercourses.
m. Identify techniques and recommend appropriate options to achieve infiltration targets through Low Impact Development (LID) at source in accordance with the subwatershed recommendation.

The Functional Stormwater Management and Environmental Management Plan shall have regard to ecological, hydrological, air drainage and road geometry assessments.

2.1.1 Ecological Assessment

The components of the ecological studies shall include:

a. Meander Belt Width Assessments for all watercourses;
b. The identification and consideration of all areas regulated by the Conservation Authority's Development, Interference with Wetlands; Alterations to Shorelines and Watercourses Regulation or its successor; and,
c. Scoped Environmental Impact Statement EIS including evaluation of natural areas (Core Areas).
d. Topographic survey of the lands including the staked limit of wetlands and top of bank of watercourses.
e. Determination of top of stable slope of watercourses.
f. Determine limits of buffers to watercourses and wetland.
g. Hydraulic study of watercourses and determination/verification of flood plain limits.
h. Geotechnical assessment to determine stable slope of the watercourse.

2.1.2 Hydrogeological Assessment

The stormwater management finding/recommendations from the SCUBE sub-watershed study shall be reviewed and incorporated in the Block Servicing Strategy. In addition, the hydrological investigation shall include:

a. Water balance study.
b. Groundwater levels and flow path.
c. Significant recharge and discharge zones.
d. An assessment of the impacts of development on the functions of b & c above.
e. The foundation drain flow rate based on groundwater and severe wet weather conditions.
f. Recommendation for an appropriate sump pump design.
g. A contingency plan to ensure that an appropriate mitigation strategy can be implemented where:
   - An aquifer is breached during construction;
   - Groundwater is encountered during construction;
   - Continuous running of sump pump occurs; and,
   - Negative impacts occur on the water supply and sewage disposal system or any surface and groundwater related infrastructure.

2.1.3 Air Drainage Analysis

The Air Drainage Analysis Brief shall include:

a. A review of the existing conditions, including air photos, topography, thermal conditions, climate and air movement down the Niagara Escarpment and towards Lake Ontario, to evaluate the effects of the proposed Secondary Plan land use on the existing microclimate and airflow; and,
b. Where appropriate, propose a road layout and development patterns that maximize air drainage in a north/south alignment to minimize potential negative impacts on the tender fruit area to the south.
c. The Air Drainage Analysis is to be prepared by a qualified environmental engineer with additional information being provided by a climatologist and argologist who are specialized in the field of tender fruit and grape production.

2.2 Functional Servicing Plan

The Functional Servicing Plan is intended to identify the manner in which water, sanitary and storm servicing is to be provided for. The plan generally includes, but is not limited to

a. Defining the sanitary and storm drainage area boundaries and confirming capacity of the outlets and conveyance systems
b. Finalizing the land-use plan through the establishment of local and collector road locations
c. Functional design of all existing collector roadways within the Block, including potential utility conflicts and horizontal and vertical alignment
d. Location and preliminary sizing of sanitary sewers
e. Location and preliminary sizing of storm sewers
f. Location and preliminary sizing of watermains
g. Preliminary grading plan based on the proposed road pattern
h. Location and functional design of stormwater management facilities
i. Location and preliminary sizing of hydraulic structures (i.e. bridges and culverts)
j. Preliminary channel grading plans and supporting analyses
k. Watermain Analysis of Block Plan using City-wide WaterCad Model.
l. Proposed phasing scheme.
m. Internal infrastructure design (storm, sanitary and water main) should account for future growth beyond the limits of the study area.

2.2.1 Road Geometry

The Block Servicing Strategy shall include the development of a transportation network for local roads in consideration of the existing and proposed collector roadways identified in the Secondary Plan.

The following shall apply to new road crossings:

- Where possible, road crossings shall avoid significant and/or sensitive natural features;
- Where it is not possible for road crossings to avoid significant and/or sensitive natural features, road crossings may be located in previously disturbed watercourse reaches or in locations where the disturbance or removal of riparian vegetation can be minimized. All watercourses will need to recognize inputs from meander belt analyses, flood plain analyses and fisheries at a minimum;
- New roadway culverts and bridges shall have sufficient conveyance capacity to pass 100 year event to avoid adverse backwater effects. In addition, under Hurricane Hazel event the maximum flooding depth on road shall be in accordance with MNR's technical guidelines;
- Where new roadway culverts and bridges cannot meet the requirements set out above, Regulatory flooding depths on roadways shall be based on the standards within the Ontario Ministry of Natural Resources Natural Hazards Technical Guides, latest version or its successor guideline; and,
- If a minor realignment of the stream channel is necessary to achieve the desired crossing configuration, the new channel should be established using natural channel design principles.

Notes:
The findings and solutions identified in the individual drainage and flooding assessments shall be integrated into the Block Servicing Strategies and subsequent Draft Plan of Subdivision.

3.0 Additional Tasks:

BLOCK 1 (not to be completed as part of this RFP):

- Include functional design for Jones Road
- Determine the floodplains for:
    - Along Watercourse 5.0, immediately downstream of Fruitland Road (between sections 2221 and 2150); and
    - Along Watercourse 5.0, halfway between Highway No. 8 and Barton Street (between sections 1693.967 and 1537.457)
- Through the Schedule C Class Environmental Assessment process, determine the alignment for the north/south (new Fruitland Road) road between highway No. 8 and Barton Street.
- Local flooding issue remediation required:
    - Local flooding at 688 Barton Street (private property drainage issue).
    - Local flooding at 728 Barton Street (private property drainage).
- Specific natural heritage requirements for the Block Servicing Strategy:
    - Ecological Land Classification and Vegetation Surveys
        - Update SCUBE West Subwatershed Study Phase 1 & 2.
    - Fisheries and Watercourse Assessments on Watercourses 5, 6 & 7
        - Re-alignment of watercourse 5 may require additional studies.
    - Re-alignment and re-construction of Watercourse 5.0 upstream of Barton Street would identify design measures to avoid/mitigate the potential negative effects of the proposed stream relocation on existing natural heritage features and functions; avoid/mitigate the potential negative impacts to wetlands 1 and 4.
    - Define limits of natural heritage feature boundaries.
    - Review the widths of the preliminary vegetation protection zone (VPZ) that have been established within the Subwatershed Study.
    - Drainage and infrastructure improvement works:
        - Identification of design measures to avoid/mitigate the potential negative effects of the proposed channel improvements on existing natural heritage features and functions.

BLOCK 2:

- Include functional design for Glover Road
- Determine the floodplains along Watercourse 6.0, downstream of Highway No. 8 (between sections 2232.182 and 1785.033).
- Local flooding issue remediation required:
    - Local flooding at 808 Barton Street.
- Specific natural heritage requirements for the Block Servicing Strategy:
    - Ecological Land Classification and Vegetation Surveys
        - Update SCUBE West Subwatershed Study Phase 1 & 2.

- Define limits of natural heritage feature boundaries.
- Review the widths of the preliminary vegetation protection zone (VPZ) that have been established within the Subwatershed Study.
- Drainage and infrastructure improvement works:
    - Identification of design measures to avoid/mitigate the potential negative effects of the proposed channel improvements on existing natural heritage features and functions.

<u>BLOCK 3 (not to be completed as part of this RFP):</u>

- Include functional design of McNeilly Road and Lewis Road
- Local flooding issue remediation required:
    - Local flooding at 1028 Barton Street (groundwater issue).
- Specific natural heritage requirements for the Block Servicing Strategy:
    - Ecological Land Classification and Vegetation Surveys
        - Update SCUBE East Subwatershed Study Phase 1 & 2.
    - Define limits of natural heritage feature boundaries.
    - Review the widths of the preliminary vegetation protection zone (VPZ) that have been established within the Subwatershed Study.
    - Drainage and infrastructure improvement works:

Identification of design measures to avoid/mitigate the potential negative effects of the proposed channel improvements on existing natural heritage features and functions.

4.0 Public Consultation Requirements and Meeting Requirements

The Municipal Class Environmental Assessment (MCEA) requires public consultation to be provided for the subject project works. This project is expected to conduct at least 2 Public Information Consultations (PICs) throughout the process. A project website is to be created and maintained throughout the duration of the project. The City of Hamilton will create and maintain the webpage, but will require input from consulting team.

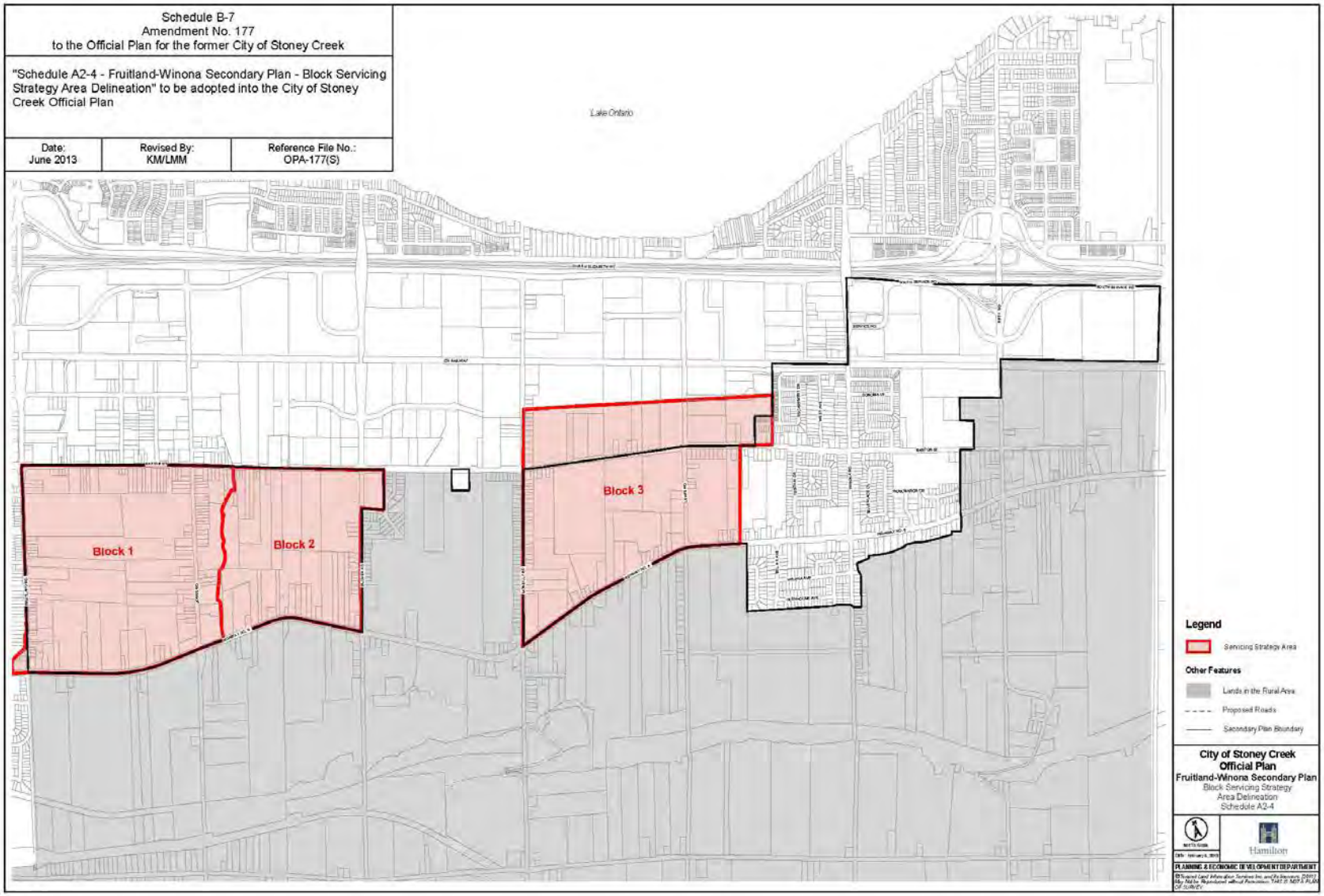
The Consultant will be required to make a presentation on the results and recommendations to Council. The project team is to provide monthly meetings to the Staff Advisory Group. In addition, a minimum of 6 stakeholder meetings shall be provided.

14 DRAFT copies and 14 FINAL copies of the Block Servicing Strategy Study Reports are required.

5.0 Project Completion

The Project shall be completed within 18 months.

Appendix A – Fruitland-Winona Secondary Plan – Block Servicing Strategy Area Delineation



Appendix B – Reference Documents

- Fruitland-Winona Secondary Plan (2014)

http://www.hamilton.ca/CityDepartments/PlanningEcDev/Divisions/Planning/CommunityPlanning/SecondaryPlans/FruitlandWinona/?WT.mc_id=fruitlandwinona&WT.hamilton_redirect_friendly=1

- SCUBE Sub-watershed Studies (2010)

http://www.hamilton.ca/CityDepartments/PlanningEcDev/Divisions/Planning/CommunityPlanning/SecondaryPlans/FruitlandWinona/?WT.mc_id=fruitlandwinona&WT.hamilton_redirect_friendly=1

- Breeding Birds Survey and Species at Risk (2012)
- City of Hamilton Engineering Guidelines for Servicing Land Under Development Applications (December 2012)
- City of Hamilton Storm Drainage Guidelines for Servicing Land Under Development Applications (December 2012)
- City of Hamilton Sewer and Water System Design Requirements (May 29th, 2014)

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

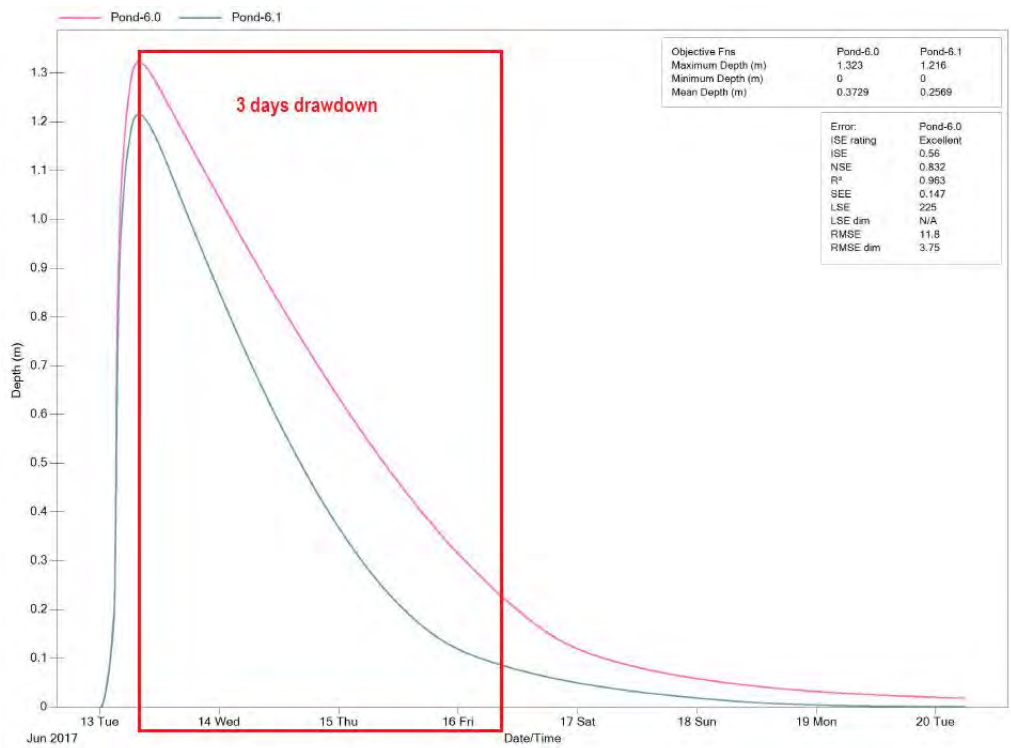
Appendix G

SWM Pond Drawdown Calculations

Project: Block 2 - Ponds 6.0 and 6.1 Drawdown Time Calculations
Prepared by: Gleydson Teixeira
Date: February 20, 2018

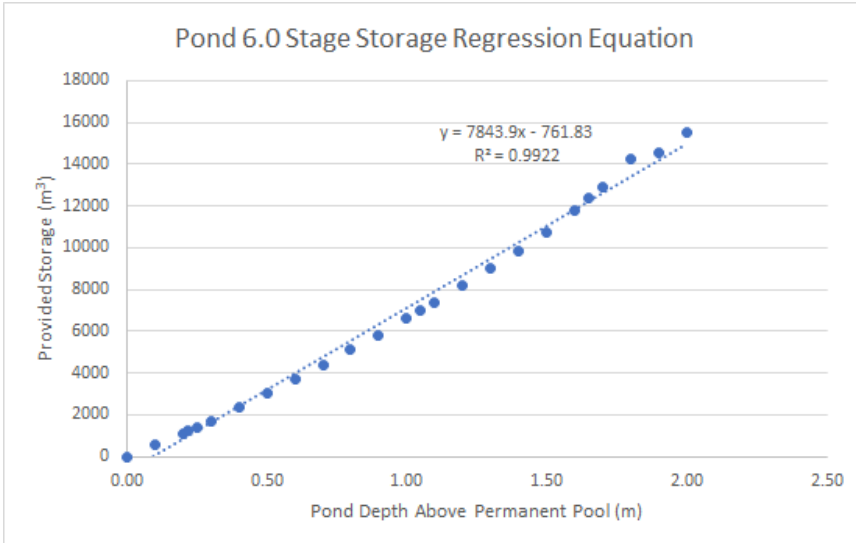
As per the conceptual designs, Ponds 6.0 and 6.1 were designed to provide extended detention to storm events up to and including the 5-yr return period event. The runoff volume from events equal to or smaller than the 5-yr event will be controlled by the low flow outlet structure. The pond storage curves (depth x time) for the 5-yr return period storm can be obtained from the SWMM model, as shown in Figure 1.

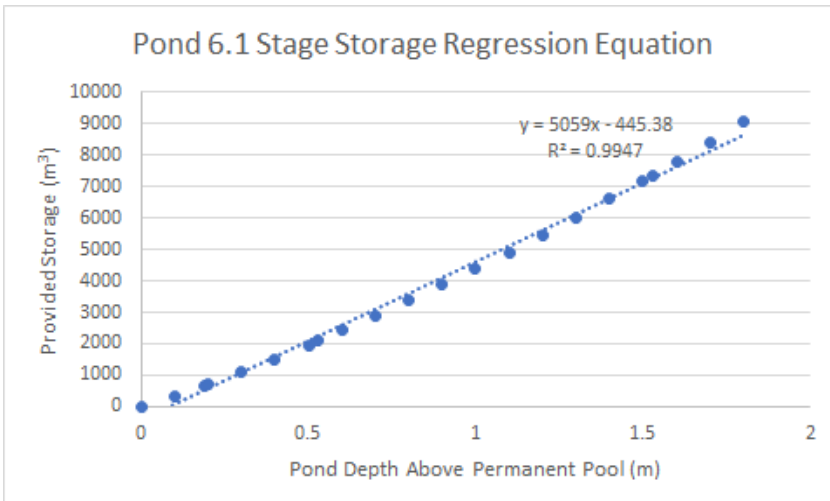
Figure 1 - Pond Storage Curve (5-yr Storm)



As shown in Figure 1, the bulk portion of the extended detention volume will be released over a period of three (3) days, with drawdown times of approximately 88 hours and 72 hours for ponds 6.0 and 6.1, respectively.

An alternative approach consists in the application of equation 4.11 of the MOE Stormwater Management Planning and Design Manual (March, 2003). In order to apply the MOE equation, linear regression equations must be obtained from the stage storage of the ponds, as follows:





Once the coefficients are obtained from the regression equations, the drawdown time can be determined as follow:

Pond 6.0:

Regression Coefficients: $C_{26.0} := 7843.9$ $C_{36.0} := -761.83$

Orifice diameter: $\phi_{6.0} := 0.14$

Maximum water head: $h_{6.0} := 1.3$

Drawdown time: $$t := \frac{\dfrac{0.66 \cdot C_{26.0} \cdot h_{6.0}^{1.5} + 2 \cdot C_{36.0} \cdot h_{6.0}^{0.5}}{2.75 \cdot \left(\dfrac{\pi \cdot \phi_{6.0}^{2}}{4}\right)}}{3600} = 38.952 \text{ hrs}$$

Pond 6.1:

Regression Coefficients: $C_{26.1} := 5059$ $C_{36.1} := -445.38$

Orifice diameter: $\phi_{6.1} := 0.14$

Maximum water head: $h_{6.1} := 1.18$

Drawdown time:

$$t := \frac{\dfrac{0.66 \cdot C_{26.1} \cdot h_{6.1}^{1.5} + 2 \cdot C_{36.1} \cdot h_{6.1}^{0.5}}{2.75 \cdot \left(\dfrac{\pi \cdot \phi_{6.1}^{2}}{4}\right)}}{3600} = 21.734 \text{ hrs}$$

It is important to notice there are limitations within the methodology sugested by the MOE since the obtained regression equations do not represent the actual pond stage storage. As an example, per the regression equations, both ponds would present "negative" storage if the depth of water above the permanent pool was zero (water level at permanent pool elevation).

On the other hand, the model consists of an iterative approach, which considers the specific pond storage and outflow rates for each computed time step. Therefore, the drawdown results obtained from the model are expected to be accurate.

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix H

Listing of Staff Members

City of Hamilton:

Margaret Fazio, *B. Sc., EP, MCIP, RPP*
Project Lead – Senior Project Manager,
Infrastructure Planning, Growth Management Division, Planning and Economic Development (PED)

Monir Moniruzzaman, *P.Eng*.
Project Engineering Lead - Senior Project Manager,
Infrastructure Planning, Growth Management, PED

Daryl Bender, *B.E.S.*
Project Manager,
Alternative Transportation, Transportation Planning, Transportation Planning and Parking, PED

Steve Cooper, *C.E.T.*
Project Manager,
Traffic Engineering and Operations, Public Works (PW)

Michael Fang, *MIES*
Traffic Technologist,
Traffic Engineering, Engineering Services, PW

Melissa Kiddie, *M.E.S (Pl), ERPG*
Natural Heritage Planner,
Development Planning, Planning Division, PED

Alissa Mahood, *RPP, MCIP*
Senior Project Manager,
Community Planning and Design, PED

Laurie McNair, *C.P.T.*
Technician,
Infrastructure Planning, Growth Management, PED

Mohan Philip, *M. Eng., P.Eng.*
Project Manager,
Transportation Planning, Transportation Planning and Parking, PED

Yvette Rybensky, *MCIP, RPP*
Senior Project Manager,
Suburban Team, Development Planning, PED

Sally Yong-Lee, *P. Eng.*
Manager,
Infrastructure Planning, Growth Management, PED

and

Hamilton Conservation Authority Staff

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I

Public Consultation

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I1

Public Meeting #1

Invitation Letter to Public Meeting #1

December 2016

Hamilton

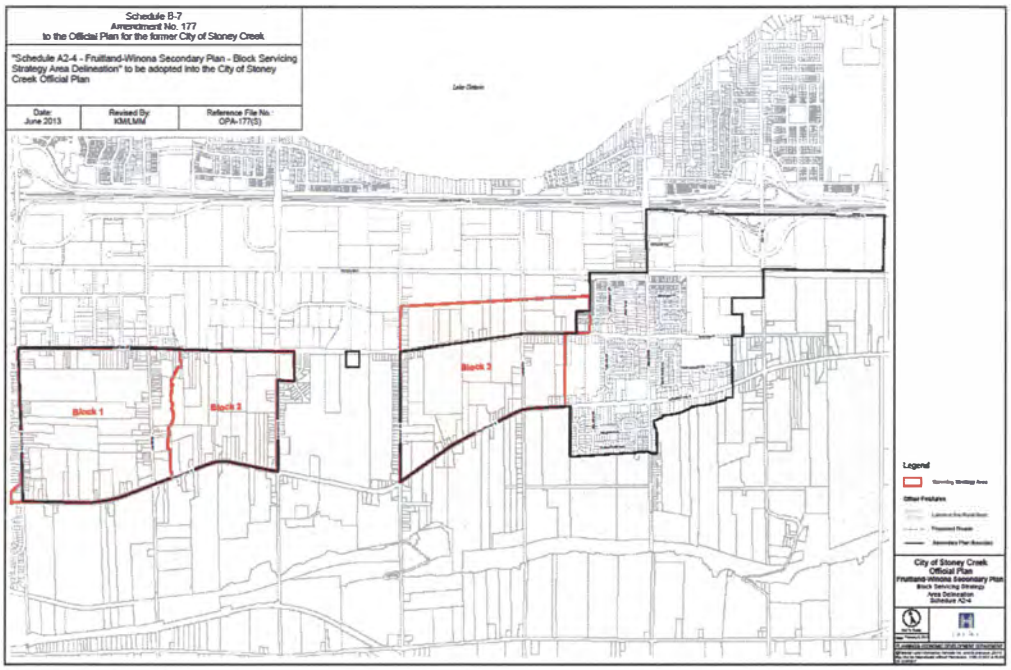
Infrastructure Planning
Growth Management, Planning and Economic Development
71 Main Street West, 6th Floor, Hamilton, ON L8P 4Y5
Phone: 905 546 2424 x 2218 Fax: 905 540 5611

November 16, 2016

RE: Invitation to Attend a Meeting Regarding Block 2 Servicing Strategy for the Fruitland-Winona Secondary Plan Lands.

The City of Hamilton has retained the consulting firm Aquafor Beech Ltd. to conduct field investigations in support of the **Block 2 Servicing Strategy (B2SS)** within the Fruitland-Winona Secondary Plan lands (please see the map below). The field inventories have been completed and the project team has conducted further analyses. We would like to invite you to discuss and gain your input on the DRAFT Servicing Plan, which includes the layout of water, sewers, stormwater ponds, local roads, grading, confirmation of natural features, etc., in preparation for future development.

For the background on the study please refer to the City of Hamilton project website, as follows: https://www.hamilton.ca/city-planning/planning-community/fruitland-winona



WHEN: FRIDAY - December 2, 2016 **OR** **WEDNESDAY - December 7, 2016**

Time: 9 a.m. – 12 p.m. Time: 1 – 4 p.m.

Format: Open house Format: Open house

WHERE: Saltfleet Room & Foyer at Stoney Creek City Hall - 777 Highway No. 8

WHO is INVITED: Land Owners in Block 2 Servicing Strategy Area.

WHY: To give the affected land owners the opportunity to view and comment/ask questions of staff and consultant team regarding the proposed DRAFT Servicing Concept Plan, so that the team can refine it.

Information will be collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act.* With the exception of personal information, all comments will become part of the public record. If you have any questions or comments, or any accessibility requirements in order to participate in the meeting please contact the staff below.

Sincerely,

Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager, Infrastructure Planning, Growth Management
City of Hamilton, 71 Main Street West, 6th Floor
Hamilton, ON L8P 4Y5
Tel: 905 546 2424 x 2218; Fax: 905 540 5611
iplanning@hamilton.ca

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I2

Public Meeting #1

Sign-in Sheet

December 2016

Hamilton

Block 2 Servicing Strategy
for the Fruitland-Winona Secondary Plan Lands

Sign in Sheet

Public Meeting No. 1
December 2, 2016 - 9:00am-12:00pm
December 7, 2016 - 1:00pm-4:00pm

Name	Address	Phone Number	E-mail

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I3

Public Meeting #1

Comment Sheet

December 2016

Hamilton

COMMENT SHEET

Block 2 Servicing Strategy
for the Fruitland-Winona Secondary Plan Lands

Public Meeting No. 1
December 2, 2016 - 9:00am-12:00pm
December 7, 2016 - 1:00pm-4:00pm
Stoney Creek City Hall - 777 Highway No.8, ON

The City of Hamilton is interested in your comments and suggestions regarding this project. Please take a few minutes to complete this comment sheet. All comments will be considered. For more information about this project, please contact the Project Managers below.

Do you have any comments on the Concept Plan for the Block 2 lands presented at today`s meeting?

_____
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Thank you for participating in this study.

Comments and information regarding this study are being collected to assist the City of Hamilton in refining the Concept Plan for the Block 2 lands. This material will be maintained on file for use during the study and may be included in project documentation. *Information will be collected in accordance with the Municipal Freedom of Information and Protection of Privacy Act. With the exception of personal information all comments will become part of the public record.*

Please provide your contact information below should you wish to be added to our Project Mailing List.

Name: _____
(please print)

Address:_____
_____
_____

Please return this completed **Comment Sheet** to our staff at the Registration Table or place in the *'Comment Box'.* You can also mail/fax/email your comments to the Project Managers by **December 16, 2016**:

Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager
City of Hamilton
71 Main St. W., 6th Floor
Hamilton, Ontario L8R 4Y5
Phone: 905 546-2424 ext. 2218
Fax: 905 540-5611
Email: iplanning@hamilton.ca

Dave Maunder, P. Eng.,
Project Manager
Aquafor Beech Ltd.
2600 Skymark Ave, Building 6, Suite 202
Mississauga, Ontario, L4W 5B2
Phone: 905 629-0099 ext. 290
Fax: 905 629-0089
Email: maunder.d@aquaforbeech.com

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I4

Public Meeting #1

Public Meeting Display

December 2016

WELCOME

Block 2 Servicing Strategy for the Fruitland-Winona Secondary Plan Lands

Public Meeting No. 1

Your comments are encouraged and appreciated, as this will provide
us an opportunity to address project issues and concerns.

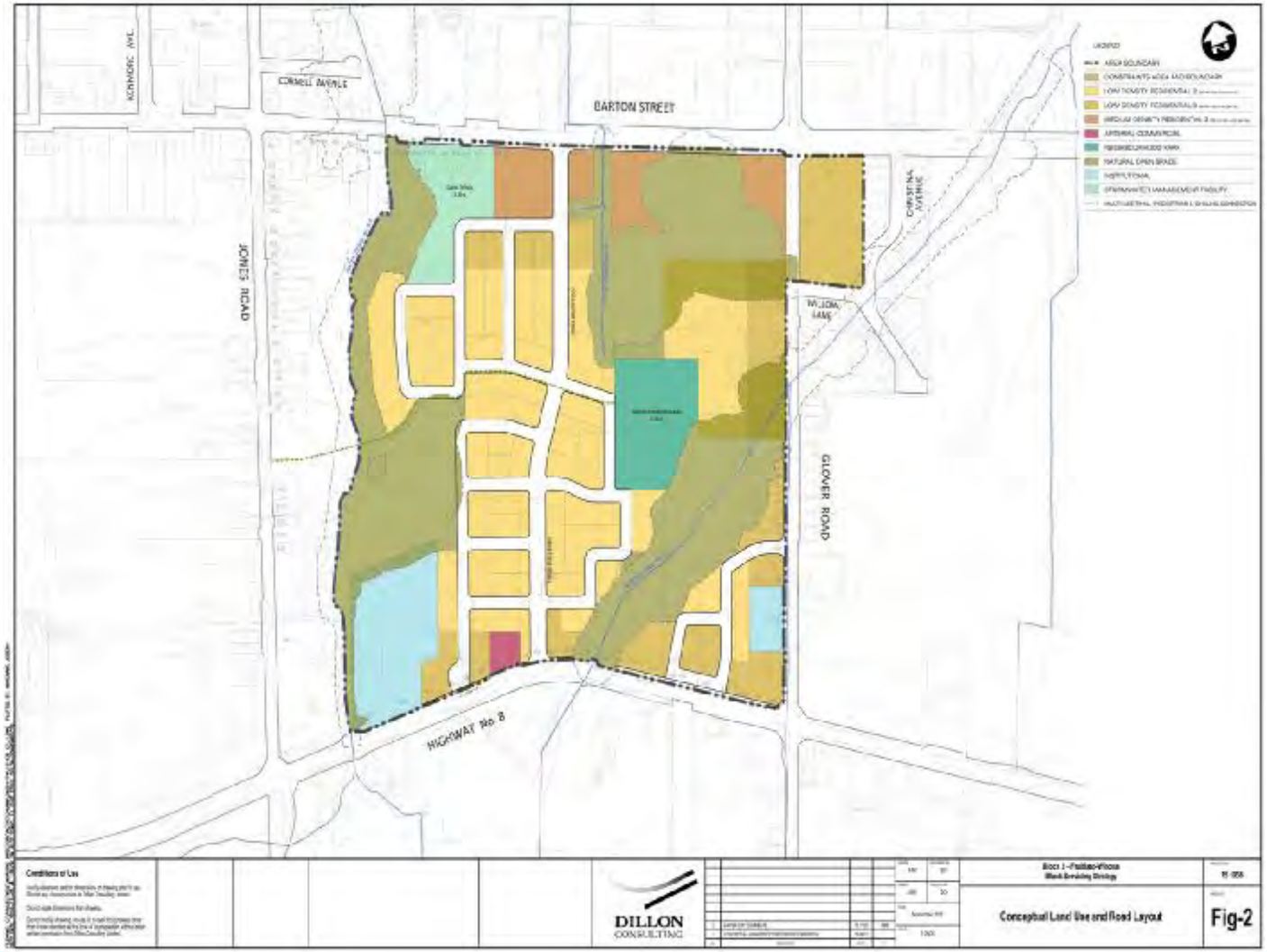
Hamilton

Aquafor Beech Limited

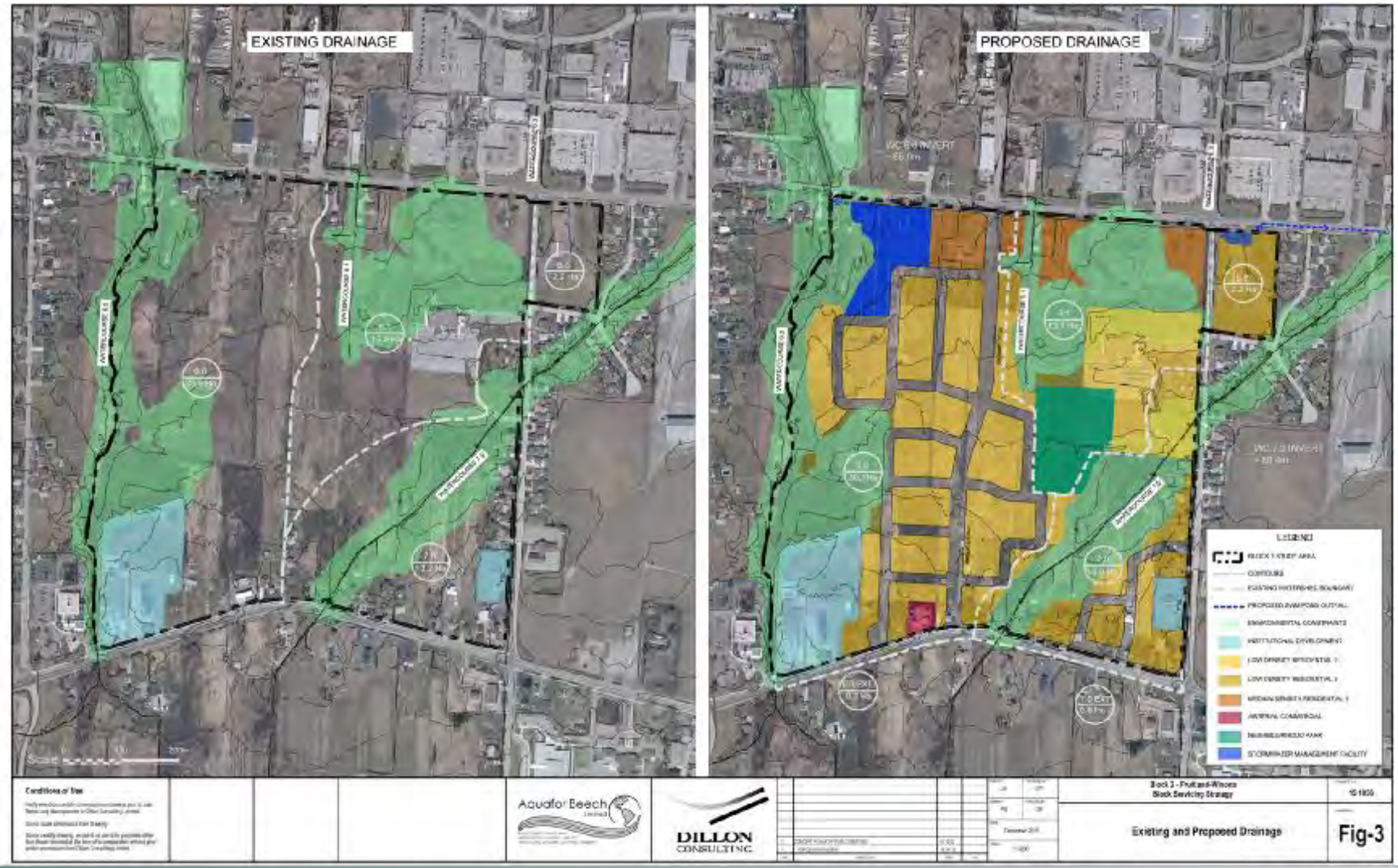
Objectives of the Public Meeting

- Introduce the Block 2 development concept plan
- Provide an overview of the proposed water, sanitary, and stormwater servicing plans
- Provide an opportunity for landowners and the public to comment on the concept plan, and to discuss questions and issues with staff

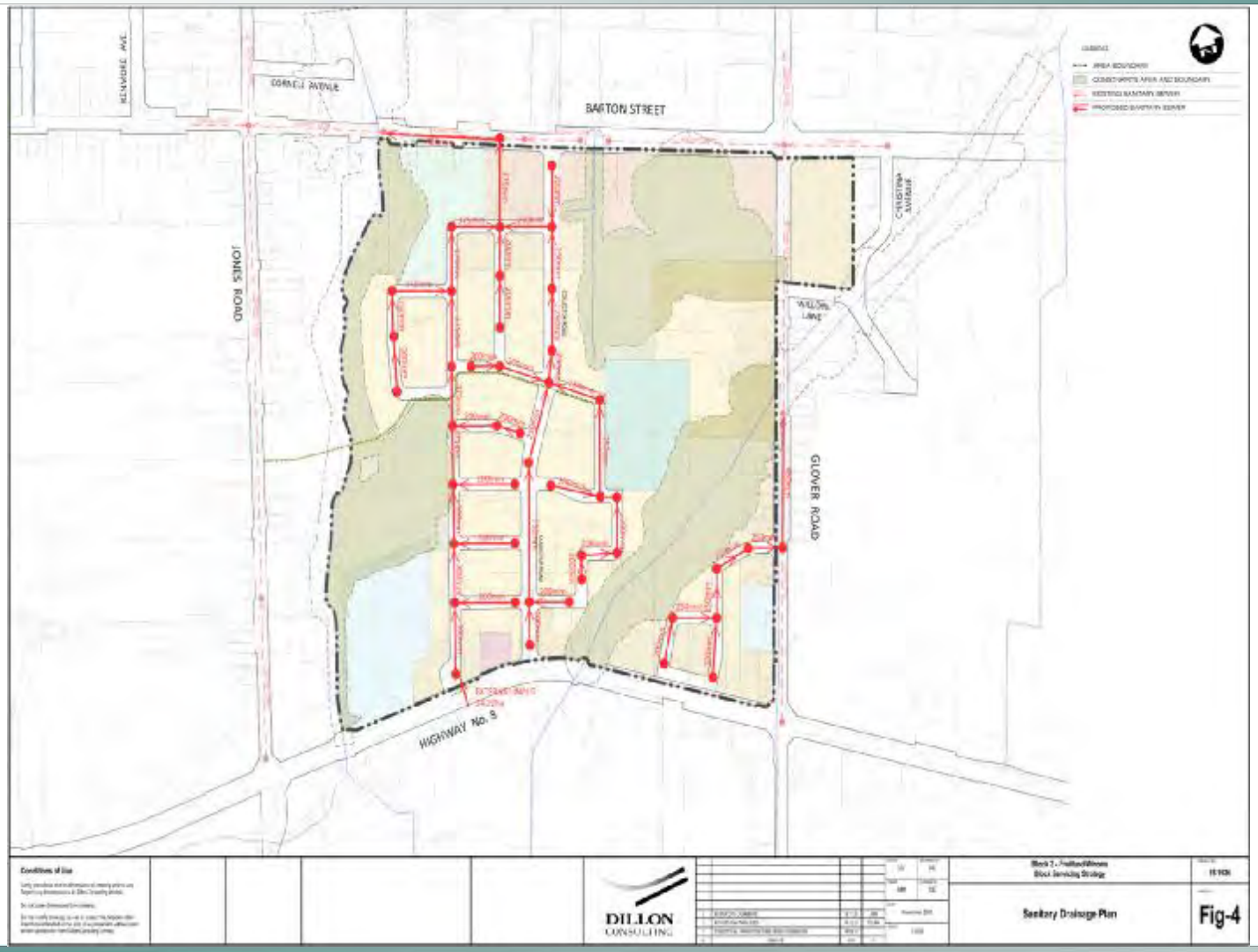
Land Use Concept Plan



Stormwater Servicing (Existing VS Proposed Drainage)



Sanitary Sewer Plan



Watermain Plan

Next Steps

- **Refine the Concept Plan based on public feedback, City comments, and Hamilton Conservation Authority requirements**
- **Preliminary design of the water, sanitary and stormwater network**
- **Public Information Centre to present the updated plans (early 2017)**

Thank You.

If you have further questions or comments, please contact the project managers:

Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager
City of Hamilton
71 Main St. W., 6th Floor
Hamilton, Ontario L8R 4Y5
Phone: 905 546-2424 ext. 2218
Fax: 905 540-5611
Email: iplanning@hamilton.ca

Dave Maunder, P. Eng.
Project Manager
Aquafor Beech Ltd.
2600 Skymark Ave, Building 6, Suite 202
Mississauga, Ontario, L4W 5B2
Phone: 905 629-0099 ext. 290
Fax: 905 629-0089
Email: maunder.d@aquaforbeech.com

Lloyd, Trish

From: [redacted]
Sent: December 16, 2016 12:32 PM
To: Fazio, Margaret
Cc: [redacted]
Subject: 844 Barton Street, Stoney Creek - Block 2 Public Meeting No. 1
Attachments: Block 2 Fruitland Winona Letter to City (Dec 16.16).pdf

Good afternoon Margaret,

Further to the City's request for comments regarding the above process, please see attached for the City's consideration and feedback.

Trusting this is satisfactory for the time being; however, should you have any questions regarding same, please do not hesitate to contact our office.

Thank you.

[redacted]

A. J. Clarke and Associates Ltd.
25 Main Street West, Suite 300, Hamilton, ON L8P 1H1
[redacted]

A. J. Clarke and Associates Ltd.
SURVEYORS • PLANNERS • ENGINEERS

To: Margaret Fazio, B.Sc., EP, MCIP, RPP
City of Hamilton
Senior Project Manager
Infrastructure Planning Section
71 Main Street West, 6th Floor
Hamilton, ON, L8P 4Y5
(hand delivered)

Sent as well via email to Margaret.Fazio@hamilton.ca

From: [redacted]

Date: December 16, 2016

Re: **Block 2 Servicing Strategy**
Fruitland-Winona Secondary Plan Lands
Public Meeting No. 1

Dear Ms. Fazio,

We have been retained by the owners of lands within the Block 2 Servicing Strategy area (herein referred to as "Block 2") to represent their interests regarding the above-noted process. Our client is the owner of approximately 10 acres of land, known municipally as 844 Barton Street in the former City of Stoney Creek, now in the City of Hamilton (herein referred to as the "subject lands").

We have reviewed the Concept Plan that was presented at the recent Public Meeting(s) held December 2nd and 7th, 2016 respectively and offer the following at this time:

- We note the proposed north-south Collector Road C in between Jones Road and Glover Road is in a different location than the approved Secondary Plan.
- There is an identified stream and associated vegetation protection zone in Schedule A2-2 – Natural Heritage System, of the Secondary Plan, as well as an identified stormwater management pond (SWM) identified on Schedule A2-1 – Land Use, which is consistent with the associated Scube West Subwatershed Study; however, the SWM pond is in a different location on the Block Servicing Concept Plan. It is acknowledged within page 109 of the Scube West Subwatershed Study that a number of factors will need to be examined when assessing the size and location of the SWM ponds. Also, attached is a letter from the Hamilton Conservation Authority (HCA) from 2003 that confirmed the

25 Main Street West, Suite 300, Hamilton, Ontario, L8P 1H1
Tel: 905 528-8761 Fax: 905 528-2289
Toronto Line: 905 845-0606
e-mail: ajc@ajclarke.com

HCA did not consider the drainage ditch on the subject lands to be a natural watercourse. We have been advised that there have been no physical changes to this ditch since the HCA's letter was issued, so our client needs clarification that this feature is not regulated.

It is recognized that the Block Servicing process will be vital for both the community and our client and ask that we be included on the mailing list pertaining to this process and that we be notified of any upcoming public forums or information sessions. We request that we be actively involved in the Block Servicing process required to bring forward the refinements to the Concept Plan that will translate into the ultimate Plan for Block 2.

Trusting this is satisfactory for the time being. Please feel free to contact me directly if you require any addition information or clarification.

Yours very truly,

[redacted]

A. J. Clarke and Associates Ltd.

Copy (by email): [redacted]

Hamilton Conservation Authority

December 11, 2003

File: GC-SCR

[redacted]

Dear [redacted]:

Re: Works in Drainage Ditch
[redacted]
City of Hamilton (former City of Stoney Creek)

Further to our recent telephone conversation and an inspection on December 1, 2003 of the drainage ditch at the above noted location, we offer the following comments.

Please be advised that Authority staff does not consider the drainage ditch to be a natural watercourse. Although there was some standing water in the ditch during the recent site inspection, it appears that this ditch transports local drainage only during times of heavy rains and runoff from a farm field situated to the south of your residence, through the manmade swale/ditch situated along the easterly limits of your property at [redacted] and the westerly limits of your neighbour's property at [redacted], under Barton Street via a culvert, across and through a grassed swale on the commercial property on the south side of the road, and through several drainage ditches, eventually spilling into Lake Ontario to the north.

We wish to advise that neither your property nor your adjacent neighbour's property is covered by the Authority's Fill, Construction and Alteration to Waterways Regulation, *Ontario Regulation 151/90*. Therefore, the recent construction and grading works undertaken by your neighbour, Mr. Dalbello, did not require a permit from the Hamilton Conservation Authority, pursuant to *Ontario Regulation 151/90*. We understand however, that the City of Hamilton did review site and grading plans for the neighbour's recent development and municipal approval(s) were obtained. In this regard, we recommend that you contact their office if you have any further questions or concerns regarding the neighbour's project.

We trust this is satisfactory. If you have any questions, please do not hesitate to contact [redacted] Watershed Officer (ext. 132).

Yours truly,

[redacted]
Director of Planning and Engineering
NJ/

cc: Doug Hardie, Senior Building Inspector/Plan Examiner, City of Hamilton, Building & Licensing Division, 777 Highway #8, Stoney Creek, Ont. L8P 4Y5
David Mitchell, Councillor, Ward 11, City of Hamilton

P.O. Box 7099, 838 Mineral Springs Road, Ancaster, Ontario L9G 3L3 905-525-2181 or 905-648-4427
Office Fax 905-648-4622 • Shop Fax 905-525-2214 • E-mail: nature@hamrca.on.ca • Website: www.conservationhamilton.on.ca

Lloyd, Trish

From: Fazio, Margaret
Sent: April 11, 2017 12:37 PM
To: [redacted]
Subject: RE: Response to letter re [redacted], Stoney Creek - December 16, 2016

Hi,

Please check the project website, and click on Public Consultation component.
https://www.hamilton.ca/city-planning/master-plans-class-eas/block-servicing-strategies-stoney-creek-and-gordon-dean-class

Thanks,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: [redacted]
Sent: April-11-17 9:46 AM
To: Fazio, Margaret
Subject: RE: Response to letter re [redacted], Stoney Creek - December 16, 2016

Hi Margaret,

I understand the presentation boards from last week's PIC for Block 2 are available for distribution. Kindly email them to me at your earliest opportunity.

Thank you.

[redacted]
A. J. Clarke and Associates Ltd.
[redacted]

From: Fazio, Margaret [mailto:Margaret.Fazio@hamilton.ca]
Sent: March-09-17 4:38 PM
To: [redacted]
Cc: [redacted] Yong-Lee, Sally; Moniruzzaman, Monir; [redacted]; Dave Maunder [redacted]; Onishi, Doug; [redacted]; McNair, Laurie; Mahood, Alissa
Subject: Response to letter re [redacted], Stoney Creek - December 16, 2016

Hello Mr [redacted],

Our apologies for the delay in responding. We have been following up on the matters outlined in your letter with various parties and have
the following response to the above mentioned letter:

1. The land uses, including **arterial and collector roads** within Block Servicing Strategies will follow the land uses approved in the Fruitland-Winona Secondary Plan.

2. **The Stormwater Management Pond location** indicated in the DRAFT Concept Plan for Block 2 at the land owners meeting, was based on refined field data and detailed engineering calculations, to maintain the existing creek features to Watercourse 6.0 as much as possible.

3. **The Watercourse 6.1** regulatory status was discussed with the Hamilton Conservation Authority (HCA) staff. HCA staff indicated that in order to finalize Watercourse 6.1 status they would like to have a site visit during spring rains, to assess flows.
   We, together with HCA staff, would like to invite the land owners and yourselves to go for the site visit with us, for this purpose. Please note that we are planning on the next public meeting for early April. It would be useful to plan the site visit for, ideally, sometime during the week of March 20th, if possible. Please advise if your firm and the Mr. and Mrs. Simone would be open to this idea and available. If you agree to proceed we can coordinate details.

4. As land owners Mr. and Mrs. Simone are already on the **mailing list** for this study process. We are able to also **add your firm/you to the mailing list.**

Please let us know if you have further questions.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: [redacted]
Sent: March-06-17 12:23 PM
To: Fazio, Margaret
Cc: [redacted]
Subject: RE: [redacted], Stoney Creek - Block 2 Public Meeting No. 1

Hi Margaret,

I am following up on this matter as I have not heard back from Staff. Kindly confirm receipt of the information provided to you at the end of last year and advise it is being considered? It would also be appreciated if we could obtain an update on Staff's progress with the Block Servicing Strategy and any upcoming PIC's.

Thanks,

[redacted]

[redacted]
A. J. Clarke and Associates Ltd.
[redacted]

From: [redacted]
Sent: December-16-16 12:34 PM
To: 'Margaret.Fazio@hamilton.ca'
Cc: [redacted]
Subject: [redacted], Stoney Creek - Block 2 Public Meeting No. 1

Good afternoon Margaret,

Further to the City's request for comments regarding the above process, please see attached for the City's consideration and feedback.

Trusting this is satisfactory for the time being; however, should you have any questions regarding same, please do not hesitate to contact our office.

Thank you.

[redacted]

A. J. Clarke and Associates Ltd.
25 Main Street West, Suite 300, Hamilton, ON L8P 1H1
[redacted] www.ajclarke.com
[redacted]

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I5

Public Information Centre #1

Notice of Commencement and Public Information Centre #1

April 2017

Hamilton

Notice of Study Commencement and
Joint Public Information Centre
Gordon Dean Avenue Municipal Class Environmental Assessment
(Phases 3 and 4), and
Block 1 and 2 Servicing Strategies

THE STUDIES

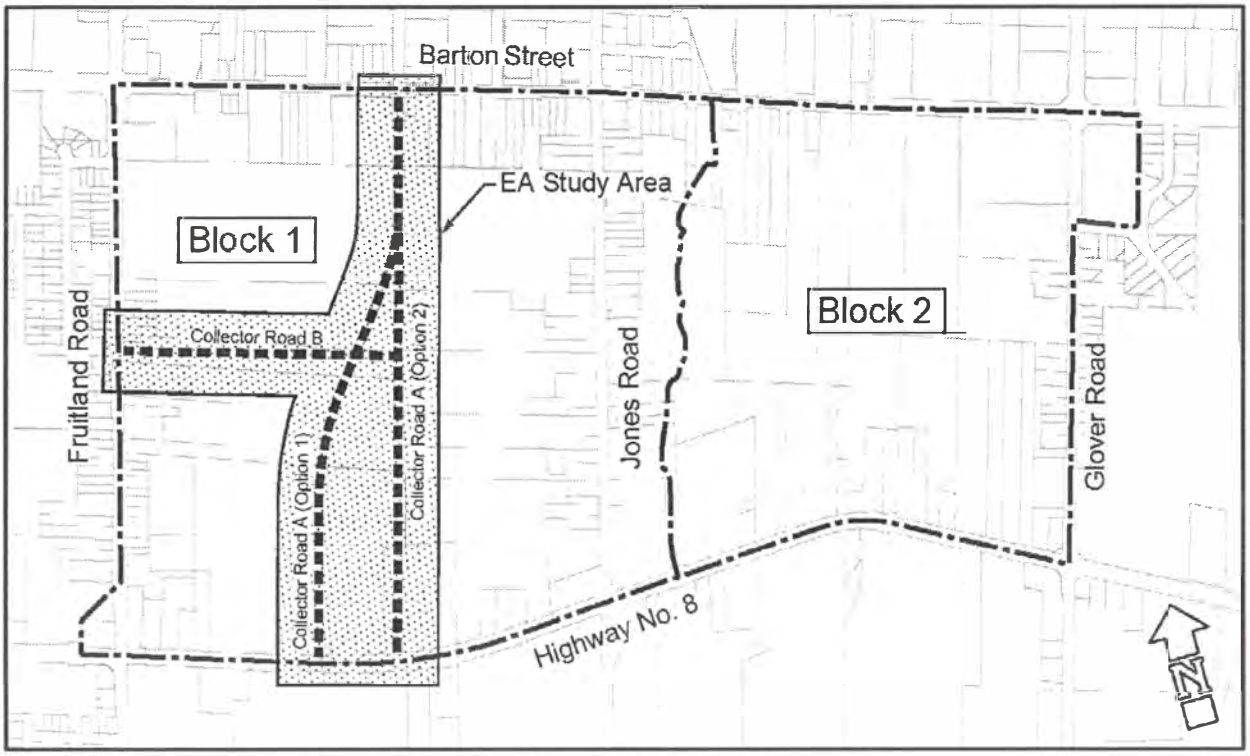
The land owners within Block 1 Servicing Strategy area have started Phase 3 and 4 of a Municipal Class Environmental Assessment (Class EA) for **Gordon Dean Avenue located between Barton Street and Highway 8***.

In 2011, the City of Hamilton completed Phase 1 and 2 of the Municipal Class EA at Fruitland Road. At that time, the recommendation was that trucks use a new road, travelling north-south, east of the existing Fruitland Road between Highway 8 and Barton Street.

Phase 3 of the assessment has now been completed, and alternative designs as well as the recommended preferred design will be presented at this PIC for public review and comment.

Block Servicing Strategies 1 and 2, are within the areas outlined by the Fruitland-Winona Secondary Plan* and include the layout of stormwater ponds, water and wastewater services and local road networks, within the updated natural heritage constraints. Block 2 Servicing Strategy is being conducted by the City of Hamilton.

STUDIES' MAP



THE PROCESS

The Municipal Class EA study (Phases 3 and 4) is being carried out in accordance with the requirements of a Schedule C project as outlined in the Municipal Engineers Association Municipal Class EA document. This is an approved process under the Ontario Environmental Assessment Act.

Once the study is complete, an Environmental Study Report (ESR) will be prepared, a notice of Completion will be issued, and information will be made available to the public for their review and comment, and an appeal option.

While the Block Servicing Strategies follow the Class EA public consultation process; this process does not include a public appeal option.

PUBLIC INFORMATION CENTRE (PIC) No 1

Public consultation is an important part of the Class EA process and Block Servicing Strategies. This PIC will provide an opportunity for the public to review the studies and Class EA design alternatives, and Block Servicing DRAFT Concept Plans.

Date: Tuesday, April 4th, 2017
Time: 3:30PM to 5PM and 6PM to 7:30PM (Open House Format)
Location: Stoney Creek Municipal Centre, 777 Highway 8, Stoney Creek

If you require special accommodations to attend this PIC, please contact the City's Project Manager by **March 22, 2017**. If you are unable to attend this PIC, information will be available on the city's website at: *Hamilton.ca/blockservicingstrategies*

PUBLIC COMMENTS INVITED

To share your concerns, find out more or be added to the studies mailing lists, please contact:

Amec Foster Wheeler (Block 1 and Gordon Dean Class EA) Angelo Cutaia, P.Eng. Consultant Project Manager 3215 North Service Road Burlington, ON L7N 3G2 Tel: 905.335.2353 Fax: 905.335.1414 Email: *Angelo.Cutaia@amecfw.com*	**City of Hamilton (Block 2)** Margaret Fazio, B.Sc., EP, MCIP, RPP Senior Project Manager City of Hamilton 71 Main Street West, 6th Floor Hamilton, ON L8P 4Y5 Tel: 905.546.2424 ext.2218 Fax: 905.540.5611 Email: *iplanning@hamilton.ca*

Information will be collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments will become part of the public record.

This notice published in Stoney Creek News on March 23rd and 30th, 2017.

*(please see studies map)

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I6

Public Information Centre #1

Sign-in Sheet

April 2017

Hamilton

Block Servicing Strategies 1 and 2
And Gordon Dean Avenue Phases 3 and 4
Municipal Class Environmental Assessment (EA)

Sign in Sheet

Public Information Centre No. 1
April 4, 2017

Name	Address	Phone Number	E-mail

Name	Address	Phone Number	E-mail

Name	Address	Phone Number	E-mail

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I7

Public Information Centre #1

Comment Sheet

April 2017

Tuesday, April 4, 2017

Block Servicing Strategies 1 and 2 and Gordon Dean Avenue Phases 3 and 4 Municipal Class Environmental Assessment (EA) Comment Sheet

Please take a moment to provide us with input regarding the three above mentioned projects. This questionnaire is your opportunity to provide your comments on all three. ***Given that your views are important to us, please kindly complete this questionnaire (please print) and deposit it in the "Comment Sheets" box provided or by mail, email/scan or fax to the address provided on the fourth page. Thank you.***

1. My relation to this Project is: (Please check all that apply)

[ ] resident within the project limit

[ ] land or business owner within the project limit

[ ] user of roads or lands within the study areas but not within project limit

[ ] member of an interest group (Please specify) _____

[ ] member of the general public not within the project limit

[ ] other (Please specify) _____

2. My interest is: (Please check all that apply?

[ ] property/land impacts

[ ] stormwater management

[ ] pedestrian / bicycle safety

[ ] traffic volume

[ ] traffic signals

[ ] recreational

[ ] natural environment and creeks

[ ] speed limits

[ ] general interest

[ ] other:_____

3. Please provide your comments as they relate to the Block 1 and Gordon Dean Avenue EA Concept Plans presented here today.

_____

_____

_____

_____

Personal information collected at public meetings or submitted in writing is collected under the authority of the *Municipal Act, 2001*, and will be used by members of the City of Hamilton. The written submissions including names and contact information and the report of the public meeting will be used for the purposes of assessing number of attendees, areas of interest, and contact information.

4. Please provide your comments as they relate to the Block 2 details provided here today.

_____

_____

_____

_____

5. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [ ] Notice in the mail [ ] Other: _____

6. Please indicate your satisfaction with the following:

	Satisfied (Y/N)	**If not satisfied, please specify your preference below**
Location of Meeting		
Time of Meeting		
Day of Week		
Accessibility of the Location		

7. On a scale of 1 to 5, where "1" is "very" and "5" is "not at all", please rate the following by circling the appropriate number:

a) How informative were the display materials? (please circle)

Very		Somewhat		Not at all
1	**2**	**3**	**4**	**5**

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very		Somewhat		Not at all
1	**2**	**3**	**4**	**5**

8. Were all your questions answered satisfactorily?

[ ] Yes [ ] No [ ] If No, can someone contact you? _____

9. Please provide any additional comments.

_____

_____

Personal information collected at public meetings or submitted in writing is collected under the authority of the *Municipal Act, 2001*, and will be used by members of the City of Hamilton. The written submissions including names and contact information and the report of the public meeting will be used for the purposes of assessing number of attendees, areas of interest, and contact information.

10. Do you require a written response to your comments?

[ ] Yes [ ] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments **(please print clearly):**

Name:	**Telephone:**
Address:	
City/Province/Postal Code:	**Email:**

As noted, please mail, scan/email, or fax your completed questionnaire by April 18, 2017 to:

Amec Foster Wheeler (Block 1 and Gordon Dean Class EA)	**City of Hamilton (Block 2)**
[redacted]	**Margaret Fazio, B.Sc., EP, MCIP, RPP** Senior Project Manager 71 Main Street West, 6th Floor Hamilton, ON L8P 4Y5 Tel: 905.546.2424 ext.2218 Fax: 905.540.5611 Email: iplanning@hamilton.ca

Thank you for your time and participation!

Personal information collected at public meetings or submitted in writing is collected under the authority of the *Municipal Act, 2001*, and will be used by members of the City of Hamilton. The written submissions including names and contact information and the report of the public meeting will be used for the purposes of assessing number of attendees, areas of interest, and contact information.

Tuesday, April 4, 2017

Block Servicing Strategies 1 and 2 and Gordon Dean Avenue Phases 3 and 4 Municipal Class Environmental Assessment (EA) Comment Sheet

Please take a moment to provide us with input regarding the three above mentioned projects. This questionnaire is your opportunity to provide your comments on all three. ***Given that your views are important to us, please kindly complete this questionnaire (please print) and deposit it in the "Comment Sheets" box provided or by mail, email/scan or fax to the address provided on the fourth page. Thank you.***

1. My relation to this Project is: (Please check all that apply)

[ ] resident within the project limit

[ ] land or business owner within the project limit

[x] user of roads or lands within the study areas but not within project limit

[ ] member of an interest group (Please specify) _____

[ ] member of the general public not within the project limit

[ ] other (Please specify) _____

2. My interest is: (Please check all that apply?

[x] property/land impacts

[ ] stormwater management

[ ] pedestrian / bicycle safety

[ ] traffic volume

[ ] traffic signals

[ ] recreational

[ ] natural environment and creeks

[ ] speed limits

[ ] general interest

[ ] other:_____

3. Please provide your comments as they relate to the Block 1 and Gordon Dean Avenue EA Concept Plans presented here today.

N/A

4. Please provide your comments as they relate to the Block 2 details provided here today.

N/A

5. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[✓] Newspaper [ ] Website [ ] Friend [ ] Notice in the mail [ ] Other: _____

6. Please indicate your satisfaction with the following:

	Satisfied (Y/N)	If not satisfied, please specify your preference below
Location of Meeting	Y	
Time of Meeting	Y	
Day of Week	Y	
Accessibility of the Location		

7. On a scale of 1 to 5, where "1" is "very" and "5" is "not at all", please rate the following by circling the appropriate number:

a) How informative were the display materials? (please circle)

Very		Somewhat		Not at all
1	2	3	4	5

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very		Somewhat		Not at all
1	2	3	4	5

8. Were all your questions answered satisfactorily?

[✓] Yes [ ] No [ ] If No, can someone contact you? _____

9. Please provide any additional comments.

I would like to know if I am in Block 3 S.S. Area, and what's coming.

Personal information collected at public meetings or submitted in writing is collected under the authority of the *Municipal Act, 2001*, and will be used by members of the City of Hamilton. The written submissions including names and contact information and the report of the public meeting will be used for the purposes of assessing number of attendees, areas of interest, and contact information.

What is the Secondary Plan proposing on my property. Concerned about a road going through or beside it

10. Do you require a written response to your comments?

[ ] Yes [ ] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments **(please print clearly):**

[redacted]

As noted, please mail, scan/email, or fax your completed questionnaire by April 19, 2017 to:

Amec Foster Wheeler (Block 1 and Gordon Dean Class EA)	**City of Hamilton** (Block 2)
[redacted]	**Margaret Fazio, B.Sc., EP, MCIP, RPP** Senior Project Manager 71 Main Street West, 6th Floor Hamilton, ON L8P 4Y5 Tel: 905.546.2424 ext.2218 Fax: 905.540.5611 Email: iplanning@hamilton.ca

Thank you for your time and participation!

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I8

Public Information Centre #1

Public Consultation Display

April 2017

WELCOME

Block 2 Servicing Strategy for the Fruitland-Winona Secondary Plan Lands

PIC No. 1

Your comments are encouraged and appreciated, as this will provide us an opportunity to address project issues and concerns.

Hamilton

DILLON CONSULTING

Aquafor Beech Limited

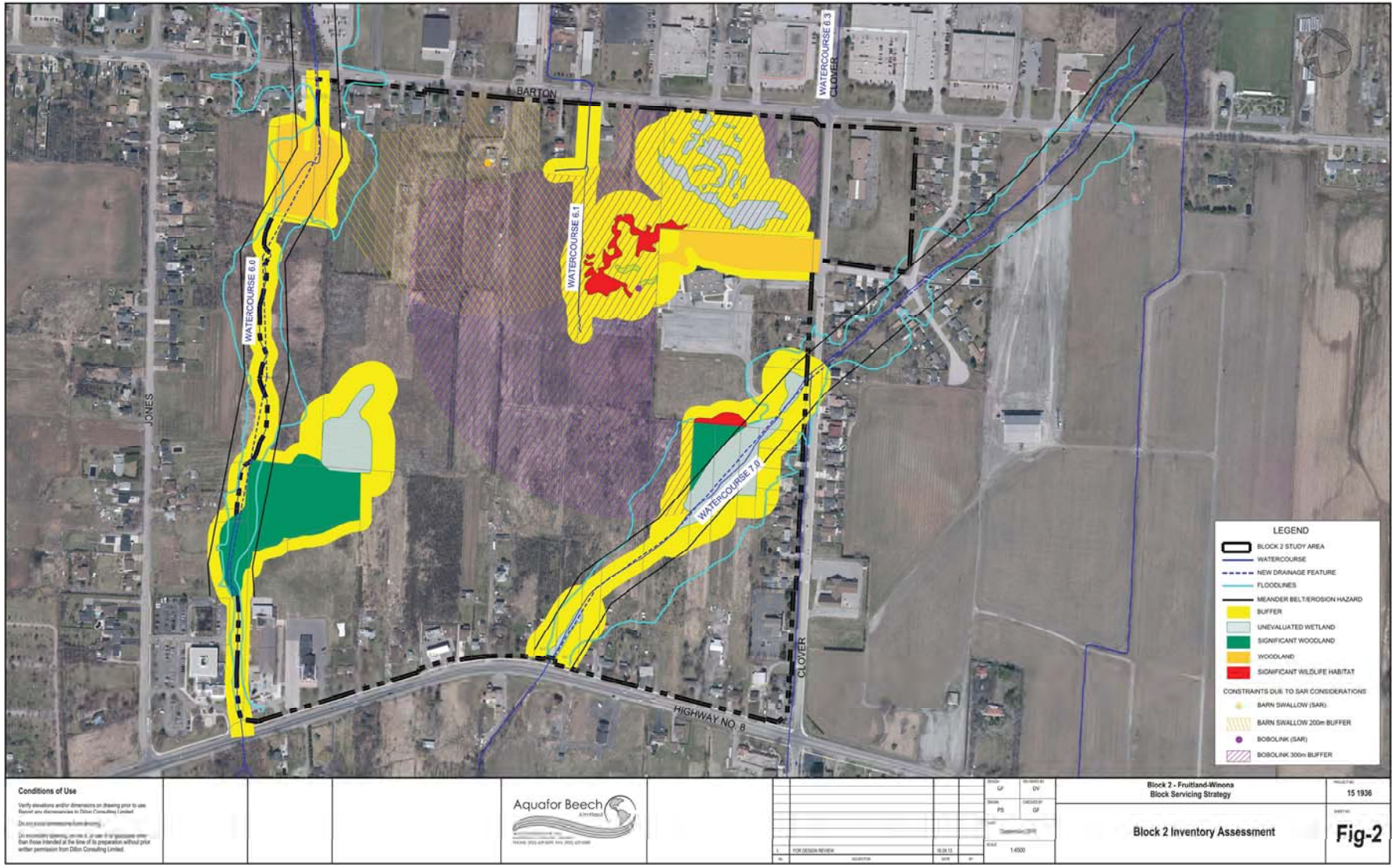
Objectives of the Public Meeting

- Introduce the Block 2 development concept plan
- Provide an overview of the proposed water, sanitary, and stormwater servicing plans
- Provide an opportunity for landowners and the public to comment on the concept plan, and to discuss questions and issues with staff

Secondary Plan Land Use

Natural Hazards and Environmental Constraints Assessment

Block 2 Servicing Strategy
for the Fruitland Winona Secondary Plan Lands
PIC No.1



Hamilton

Growth Management Division
Infrastructure Planning Section
www.hamilton.ca

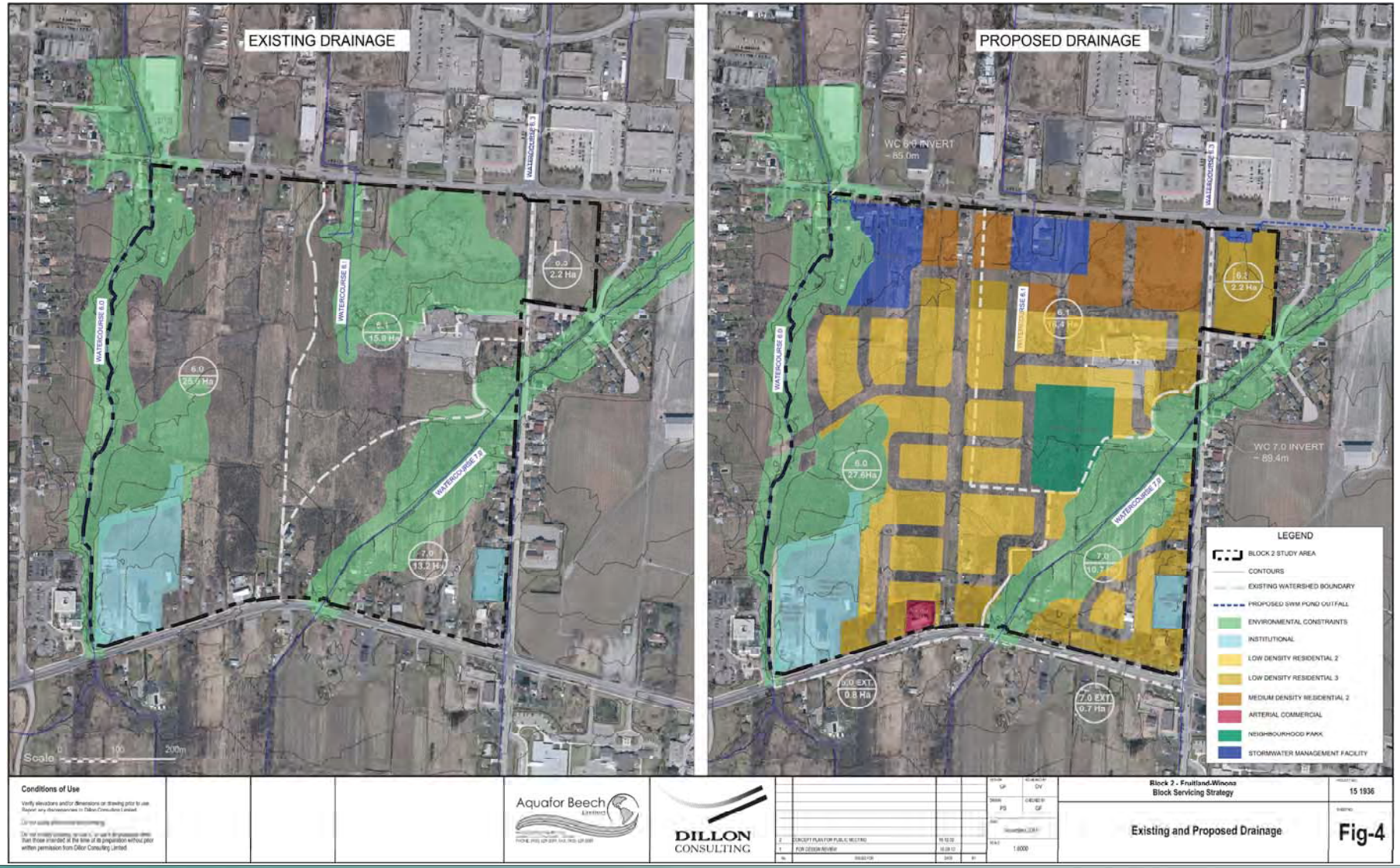
DILLON CONSULTING

Aquafor Beech Limited

Concept Plan

Stormwater Servicing (Existing VS Proposed Drainage)

Block 2 Servicing Strategy
for the Fruitland Winona Secondary Plan Lands
PIC No.1



Hamilton

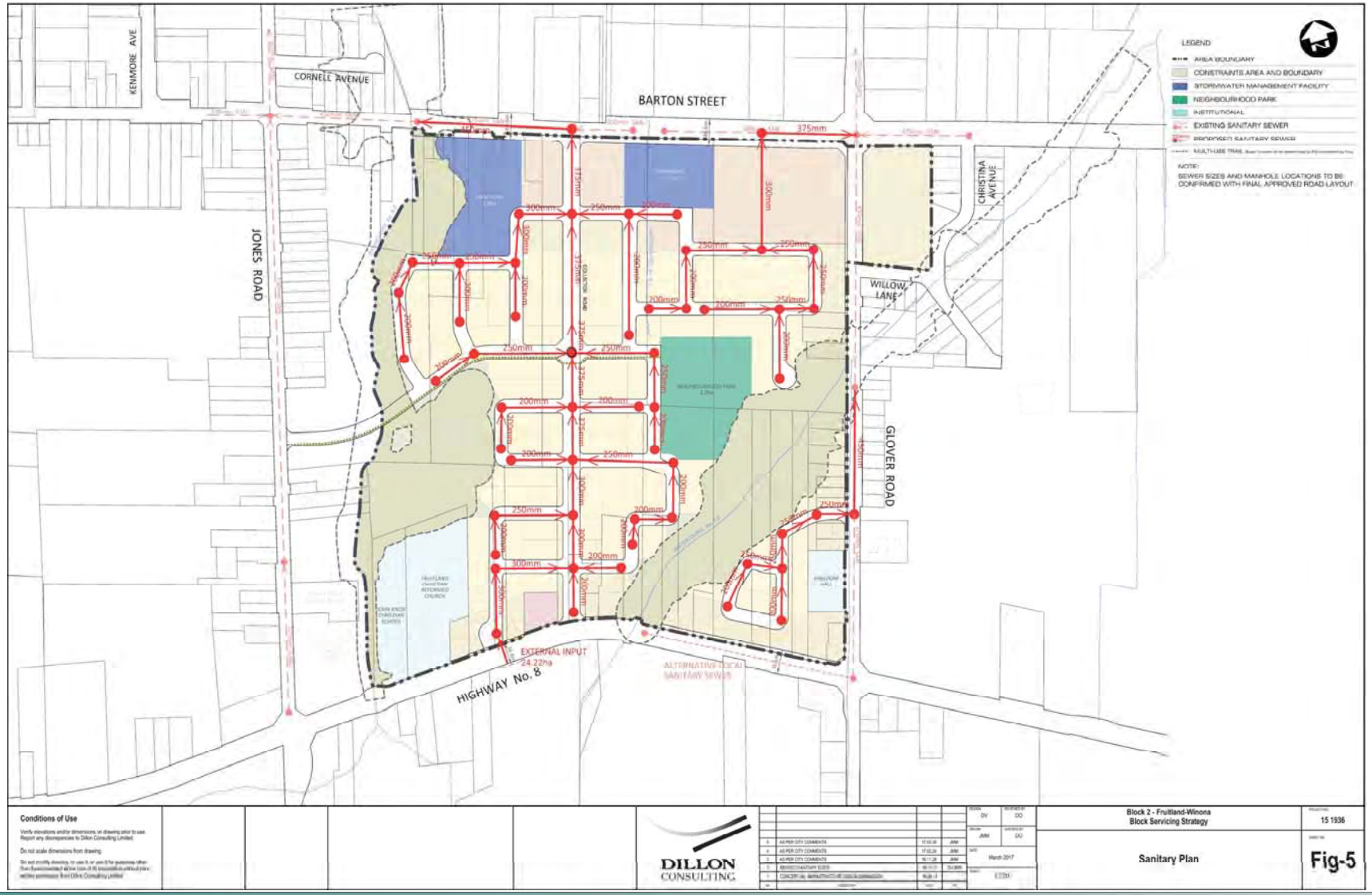
Growth Management Division
Infrastructure Planning Section
www.hamilton.ca

DILLON CONSULTING

Aquafor Beech Limited

Sanitary Sewer Plan

Block 2 Servicing Strategy
for the Fruitland Winona Secondary Plan Lands
PIC No.1



Watermain Plan

Block 2 Servicing Strategy
for the Fruitland Winona Secondary Plan Lands
PIC No.1

Conditions of Use

Verify elevations and/or dimensions on drawing prior to use. Report any discrepancies to Dillon Consulting Limited.

Do not scale dimensions from drawing.

Do not modify drawing, re-use it, or use it for purposes other than those intended at the time of its preparation without prior written permission from Dillon Consulting Limited.

DILLON CONSULTING

4	AS PER CITY COMMENTS	17.03.30	JMM
3	AS PER CITY COMMENTS	17.02.24	JMM
2	AS PER CITY COMMENTS	16.11.28	JMM
1	CONCEPTUAL INFRASTRUCTURE DESIGN SUBMISSION	16.08.12	

DRAWN: MM | SUPERVISED BY: DO
CHECKED: JMM | CHECKED BY: DO
DATE: March 2017
SCALE: 1:2500

Block 2 - Fruitland-Winona
Block Servicing Strategy

Watermain Plan

PROJECT NO.: 15 1936
SHEET NO.: Fig-6

Hamilton

Growth Management Division
Infrastructure Planning Section
www.hamilton.ca

DILLON CONSULTING

Aquafor Beech Limited

Next Steps

- **Refine the Concept Plan based on public feedback, City comments, and Hamilton Conservation Authority requirements**
- **Receive Stakeholder comments by April 19, 2017.**
- **Preliminary design of the water, sanitary and stormwater network**
- **Second Public Information Centre to present the updated plans**

Thank You.

If you have further questions or comments, please contact the project managers:

Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager
City of Hamilton
71 Main St. W., 6th Floor
Hamilton, Ontario L8R 4Y5
Phone: 905 546-2424 ext. 2218
Fax: 905 540-5611
Email: iplanning@hamilton.ca

Dave Maunder, P. Eng.
Project Manager
Aquafor Beech Ltd.
2600 Skymark Ave, Building 6, Suite 202
Mississauga, Ontario, L4W 5B2
Phone: 905 629-0099 ext. 290
Fax: 905 629-0089
Email: maunder.d@aquaforbeech.com

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I9

Public Information Centre #1

Agency Contact List

April 2017

Last Name	First Name	Title	Job Title	Organization	Street Address	City and Province	Postal Code	Contact Information	Link to Documents/ Webpages	Special Notes and Instructions
City of Hamilton Staff **TO BE SENT ELECTRONIC COPY OF MAILOUT***										
A										
B										
B										
B										
B										
B										
B										
C										
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L										
M										
M										

Builders Association

Lloyd, Trish

From: [redacted]
Sent: February 9, 2017 9:36 AM
To: Yong-Lee, Sally; [redacted] - S. Llewellyn & Associates Ltd. [redacted]; McNair, Laurie; Moniruzzaman, Monir; Kiddie, Melissa
Cc: Fazio, Margaret; Mahood, Alissa
Subject: Re: BPSS Block 2 - "Dalbello Lands"

Good morning,

Thanks for sending notes from the meeting. There are 2 points of clarification:

- The lands are designated Medium Density Residential (per the OMB approval). There are no natural feature or open space land use designations on the lands (the designation was removed with the OMB decision). Therefore, the meeting notes should not suggest there is a feature on the lands. There was no agreement to this point. In fact there was concern by Losani with the Land Use Map in the BPSS (it is not consistent with the Secondary Plan) and a request the map be changed for the PIC to reflect the in force and effect land use designation (Medium Density Residential). We discussed that the Block Servicing Study is a technical study and not a document that is intended to change land uses.
- The Losani consultant team will review the lands. There is no agreement there is a feature on the lands as shown on the BPSS maps. The City advised they have not been on the lands. The purpose of working with the City is to review the lands for the Block Servicing Study.

I will follow up with Alissa to discuss.

[redacted]

MHBC Planning, Urban Design & Landscape Architecture

540 Bingemans Centre Drive, Suite 200 | Kitchener | ON | N2B 3X9 | T519 576 3650 x 709 | F 519 576 0121
| [redacted]

From: "Yong-Lee, Sally" <Sally.Yong-Lee@hamilton.ca>
Date: Wednesday, February 8, 2017 at 2:46 PM
To: [redacted] - S. Llewellyn & Associates Ltd. [redacted]", [redacted], William Liske [redacted], "McNair, Laurie" <Laurie.McNair@hamilton.ca>, "Moniruzzaman, Monir" <Monir.Moniruzzaman@hamilton.ca>, "Kiddie, Melissa" <Melissa.Kiddie@hamilton.ca>
Cc: "Fazio, Margaret" <Margaret.Fazio@hamilton.ca>, "Mahood, Alissa" <Alissa.Mahood@hamilton.ca>
Subject: BPSS Block 2 - "Dalbello Lands"

Quick notes from this morning's meeting.

Meeting Notes – Wednesday, February 8, 2017
City Hall, Room 818

Attendance:
[redacted] (MHBC)
[redacted] (Losani)
Laurie McNair (City)
Shaquille Lambert (City – Student)
Monir Moniruzzaman (City)
Melissa Kiddie (City)
Sally Yong-Lee (City)
[redacted] (SLA)

-Losani took possession of the former Debello lands recently

-land use designation in effect – predominately medium density residential

-there exists a natural feature on the lands (wetland feature)

-previous owner did not allow the City/City's consultant onto the lands to carry out an evaluation of the natural feature

-Losani is concerned that we are currently showing "green" area on the mapping for the BPSS and this may trigger the need for an OP amendment if it is deemed that there is no feature on the property; Losani advised to consult with Alissa

-the wooded area was deemed that is did not meet the definition of a woodlot, hence the trees were removed by the land owner

-Melissa advised the property may potentially have a rare plant species or contain habitat for Bobolink

-Losani indicated a willingness to work together

-Aquafor Beech has been retained by the City to undertake the Block Plan Servicing Strategy (BPSS) for Block 2 lands

-Aquafor has been asked to develop two servicing options – assuming the wetland feature exists and must be protected and the second option assumes non- existence of the wetland feature

-Losani will discuss with their own consultant team on their approach to evaluate the wetland feature and will advise City; possibly evaluation jointly with the City's consultant

-City to send Losani "Permission to Enter" documentation

-Losani asked to be placed on the list for future notification for the BPSS Block 2

-PIC for BPSS (Blocks 1, 2, and 30 will be scheduled for late March

Lloyd, Trish

From: Fazio, Margaret
Sent: February 16, 2017 4:02 PM
To: [redacted]
Cc: Yong-Lee, Sally; Moniruzzaman, Monir; Mahood, Alissa
Subject: Request for Clarification to Follow up to Meeting on Feb 7, 2017, and Letter from Lawyer from Losani Homes on Feb 13, 2017

Importance: High

Hi Dave,

I am back at the office today, trying to catch up on issues from while I was away.

I wanted to first clarify something. I understand that it was discussed at the meeting last week, that Losani Homes staff were interested in having a joint site visit with City staff, HCA, etc. to see what was on the property from the natural heritage perspective.

In light of the letter received on February 13, 2017, from the legal representative of Losani Homes – sent to Tony Sergi, Steve Robichaud and Mike Kovacevic, are Losani Homes still keen to pursue the site visit?

Please advise so that we can understand if we still need to prepare the permission to enter letter, etc.

P.S. We are also working on a formal reply to that letter.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

Lloyd, Trish

From: [redacted]
Sent: February 23, 2017 8:40 AM
To: Fazio, Margaret; Mahood, Alissa; [redacted]
Cc: Sergi, Tony; Robichaud, Steve; Paparella, Guy
Subject: FW: Block Servicing Strategy for Block 2 - [redacted]
Attachments: 20170223082621.pdf

Please find attached the letter in response to Losani Homes email dated February 13, 2017.

From: [redacted]
Sent: February-23-17 8:23 AM
To: [redacted]
Subject:

Hamilton

Mailing Address:
71 Main Street West
Hamilton, Ontario
Canada L8P 4Y5
www.hamilton.ca

Planning and Economic Development Department
Growth Management Division
Physical Address: 71 Main Street West, 6th Floor
Phone: 905-546-2424 Ext. 1428 Fax: 905-540-5611

Feb 22, 2017

FILE:Block Servicing Strategy No 2

Losani Homes Office
430 McNeilly Road, Suite 203
Stoney Creek, ON
L8E 5E3

Dear Mr. [redacted]:

Re: Your e-mail of February 13, 2017 addressed to Mike Kovacevic, Tony Sergi and Steve Robichaud, City of Hamilton.

This letter is the response to your e-mail of February 13, 2017, sent to Mike Kovacevic, Tony Sergi and Steve Robichaud in the City of Hamilton.

The City is in the process of revising the draft Block Servicing Strategy for Block 2 to reflect the Ontario Municipal Board decision with respect to the lands located at 860 and 884 Barton Street. The revised draft will reflect the Board's decision as well and the approved land use designations as identified in the Fruitland-Winona Secondary Plan. Each land owner will be responsible for screening of any new ecological features through the development application process.

Our apologies for any confusion this may have caused relating to any miss-information relating to land use.

Please let us know you have any further questions, concerns or comments.

Yours truly,

Sally Yong-Lee
Manager, Infrastructure Planning

MF&AM
cc: Tony Sergi, Senior Director, Growth Management
Steven Robichaud, Director, Planning
Guy Paparella, Director, Growth Planning
Mike Kovacevic, Solicitor, Legal Services

Lloyd, Trish

From: [redacted]
Sent: April 6, 2017 3:17 PM
To: Fazio, Margaret; [redacted]
Cc: Yong-Lee, Sally
Subject: RE: Mrs [redacted] meeting arrangement

I understand but I think she is in a panic because by then it will be too late

---

From: Fazio, Margaret
Sent: April-06-17 3:17 PM
To: [redacted]
Cc: Yong-Lee, Sally
Subject: RE: Mrs [redacted] meeting arrangement

Thank you, although I don't know, Councillor. We need to wait until the end of the study to really know that ☺

Margaret

From: [redacted]
Sent: April-06-17 3:05 PM
To: Fazio, Margaret; Dinney, Kathy
Cc: Yong-Lee, Sally
Subject: RE: Mrs Simone - meeting arrangement

How awesome are you?

From: Fazio, Margaret
Sent: April-06-17 2:53 PM
To: [redacted]
Cc: Yong-Lee, Sally
Subject: RE: Mrs [redacted] - meeting arrangement

Hello Councillor,

No problem. We will do that.

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: Johnson, Brenda
Sent: April-06-17 2:48 PM
To: Fazio, Margaret; [redacted]
Subject: Mrs [redacted]

Hello Margaret
Can you please help [redacted] arrange for a meeting at Stoney Creek with the appropriate consultants regarding [redacted] Street east regarding the placement of the pond and the watercourse?

Mrs [redacted] is taking exception to both

[redacted]
City of Hamilton
71 Main Street West
Second Floor
Hamilton, Ontario
L8P 4Y5
[redacted]

The City of Hamilton Lobbyist Registry is now in effect. Anyone who does not live or own a business in the Ward Councilor's riding who wishes to communicate with that Councillor must first register as a Lobbyist. More information: www.hamilton.ca/lobbyistregistry

Lloyd, Trish

From: [redacted]
Sent: April 6, 2017 2:48 PM
To: Fazio, Margaret; [redacted]
Subject: Mrs [redacted]

Hello Margaret
Can you please help [redacted]y arrange for a meeting at Stoney Creek with the appropriate consultants regarding [redacted]
[redacted]t regarding the placement of the pond and the watercourse?

Mrs [redacted] is taking exception to both

[redacted]
[redacted]
City of Hamilton
71 Main Street West
Second Floor
Hamilton, Ontario
L8P 4Y5
[redacted]

The City of Hamilton Lobbyist Registry is now in effect. Anyone who does not live or own a business in the Ward Councilor's riding who wishes to communicate with that Councillor must first register as a Lobbyist. More information: www.hamilton.ca/lobbyistregistry

Lloyd, Trish

From: [redacted]
Sent: April 6, 2017 3:36 PM
To: Fazio, Margaret
Subject: Re: Block Servicing Strategy Block 2 Concept Plan web page link

That's perfect. Thank you.

Sent from my BlackBerry - the most secure mobile device - via the TELUS Network

---

From: Margaret.Fazio@hamilton.ca
Sent: April 6, 2017 3:17 PM
To: [redacted]
Subject: RE: Block Servicing Strategy Block 2 Concept Plan web page link

Hi,

Yes, local roads are in the concept plans. The links are imbedded in the web page – see public consultation and click on the plus sign to open that up.

Margaret Fazio, B.Sc., *EP, MCIP, RPP*

Senior Project Manager, Infrastructure Planning

Growth Management, Planning and Economic Development Department

City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5

Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

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HAMILTON 2017

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From: [redacted]
Sent: April-06-17 3:11 PM
To: Fazio, Margaret
Subject: RE: Block Servicing Strategy Block 2 Concept Plan web page link

Hi Margaret,

Thank you for this. I'm looking for something that would show me a proposed local road layout concept.
Are any of these completed yet? I don't seem to see any in the link.

Thanks for your help.
[redacted]

Sent from my BlackBerry - the most secure mobile device - via the TELUS Network

---

From: Margaret.Fazio@hamilton.ca

Sent: April 6, 2017 2:38 PM

To: [redacted]

Cc: Laurie.McNair@hamilton.ca; Alissa.Mahood@hamilton.ca

Subject: RE: Block Servicing Strategy Block 2 Concept Plan web page link

Hi [redacted],

I just want to first clarify that I understand that when you are referring to a Preliminary Plan you're really asking about the Concept Plans for the Block Servicing Strategies that were presented at the PIC this week, correct? If so, then we can confirm that they are all indeed still in DRAFT Concept stage. You/Your clients have until April 19, 2017 to respond with comments to that plan, if you wish.

The link to 3 Block SSs, The Fruitland-Winona Secondary Plan and area Environmental Assessments, Notices, etc. are all interlined with each other (cross links can be found at the bottom of each web page) on the City Website:

https://www.hamilton.ca/city-planning/master-plans-class-eas/block-servicing-strategies-stoney-creek-and-gordon-dean-class

I hope this helps? Please let us know if you have any questions.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*

Senior Project Manager, Infrastructure Planning

Growth Management, Planning and Economic Development Department

City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5

Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

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From: Mahood, Alissa
Sent: April-06-17 2:19 PM
To: [redacted]
Cc: Fazio, Margaret; McNair, Laurie
Subject: RE: Block Servicing Strategy Block2

Hi [redacted]

That work is being carried out by the growth management section, Margaret Fazio is the project manager. I have cc'd her on this e-mail. She can provide you with the link to the website that would show the proposed local road layout for Block 2.

Thank you,

Alissa

Alissa Mahood, MCIP, RPP

Senior Project Manager, Community Planning & GIS

Planning and Economic Development Department

City of Hamilton, 71 Main St W, 6th Floor, L8P 4Y5

Ph: 905.546.2424 ext. 1250

Fax: 905.540.5611

www.hamilton.ca/communityplanning

From: [redacted]
Sent: April-06-17 1:22 PM
To: Mahood, Alissa
Subject: Re: Block Servicing Strategy Block2

Hi Alissa, thank you for this

I am actually looking for something that shows where the future roads may go....is that plan available yet?

Sent from my BlackBerry - the most secure mobile device - via the TELUS Network

---

From: Alissa.Mahood@hamilton.ca

Sent: April 6, 2017 12:53 PM

To: [redacted]

Subject: RE: Block Servicing Strategy Block2

Hi [redacted],

I apologise for taking so long to respond, I have been off site all week at meetings. You can access the Fruitland-Winona Secondary Plan by following the link below:

https://d3fpllf1m7bbt3.cloudfront.net/sites/default/files/media/browser/2015-01-16/urbanhamiltonofficialplan-volume2-mapb-7-4-1tomapb-7-4-4-fruitlandwinonasecondaryplan-nov2016.pdf

Please let me know if you have any questions.

Thank you, Alissa

Alissa Mahood, MCIP, RPP

Senior Project Manager, Community Planning & GIS

Planning and Economic Development Department

City of Hamilton, 71 Main St W, 6th Floor, L8P 4Y5

Ph: 905.546.2424 ext. 1250

Fax: 905.540.5611

www.hamilton.ca/communityplanning

From: [redacted]
Sent: April-05-17 1:01 PM
To: Mahood, Alissa
Subject: Block Servicing Strategy Block2

Good Afternoon Alissa,

I am working with clients located in Block 2 of the Fruitland-Winona Secondary Plan.

I was hoping to see if you have a Preliminary land use concept for this area, and is it available to view anywhere (online)?

I understand that it is preliminary, but I would just like to get an idea.

If you can steer me in the right direction, that would be great.

Thanks for your help.

[redacted]

CENTURY 21 Insight Realty Group

280 Barton Street

Stoney Creek, ON L8E 2K6

Direct Line: [redacted]

[redacted]

Is it really necessary to print this e-mail? Think green...

Lloyd, Trish

From: [redacted]
Sent: April 10, 2017 8:09 AM
To: [redacted]
Cc: Fazio, Margaret; [redacted]
Subject: Block 2 Servicing Strategy Fruitland-Winona Secondary Plan

Good morning Mr. Maunder,

We spoke at the Public Information Centre in Stoney Creek last Tuesday, April 4th in regards to the second Block 2 Servicing Strategy map. We received Map No. 1 at the second session of Public Meeting No. 1 on December 7th, 2016. My parents attended the first meeting on December 2nd as well, but there wasn't a sufficient map available. In speaking with my brother, [redacted] last Tuesday you mentioned that I had not contacted you although I informed you that I had done so. You also stated that we had refused property visits, although I informed you that Aquafor had already visited our property on more than one occasion (June, August 2016 and maybe more), and we have not been able to get reports or information resulting from those visits.

On January 12th, 2017, I spoke with [redacted] of Dillon Consulting Limited regarding watercourse 6.1 on Map No. 1. He informed me that he created Map No. 1 in November 2016 with the data provided to him by Aquafor Beech Ltd.

I telephoned you that same afternoon, Thursday, January 12th, 2017, and left two messages asking for you to call me back. The number I phoned, 905-629-0099, was provided on the comment sheet by the City of Hamilton at the first public meeting on December 2nd. I also telephoned and left a message for Ms. [redacted] in Guelph, at [redacted], to call me back. I was not contacted by either [redacted] or yourself.

The email below, although showing was sent from my iPhone on January 21th, 2017, does not appear to have actually been sent. As per my phone messages in January, and my verbal requests at the PIC meeting last Tuesday, April 4th, it still remains that we would like the information pertaining to Aquafor Beech Ltd.'s visits to [redacted]t in Stoney Creek. We are questioning the determination of the watercourse which is a man-made ditch that my brother and father created. We would like to review the scientific data which changed a ditch to a watercourse and its subsequent extension south and west. We would also like to know how it was scientifically determined that two more swm ponds be located in Block 2 on this April 4th map, specifically the one on our property, when there was only one pond shown at the far west on Map No. 1 in December 2016.

We would like to meet with you, Ms. Margaret Fazio and Ms. [redacted], on these matters.

Sincerely,

[redacted]
On behalf of [redacted]

Hello Ms. [redacted], B.E.S.,

I'm writing in regards to the Block 2 Servicing Strategy for the Fruitland-Winona Secondary Plan Lands Public Meeting No. 1 map which was created by Dillon Consulting Limited in November 2016.

On June 9, 2016 you visited [redacted] on behalf of the City of Hamilton. Aquafor Beech forwarded information to Dillon Consulting in order to create this map.

I'm looking for a copy of your report as a result of your visit to [redacted], Stoney Creek.

Also, I would like the interpretation of your findings in determining the waterways for the Block 2 Servicing Strategy, specifically Watercourse No. 6.1.

Sincerely,

[redacted]

Sent from my iPhone

Lloyd, Trish

From:	Fazio, Margaret
Sent:	April 10, 2017 3:28 PM
To:	[redacted]
Cc:	Yong-Lee, Sally; Moniruzzaman, Monir; [redacted]e [redacted] Mahood, Alissa; Dave Maunder [redacted] McNair, Laurie
Subject:	Response to Comments received on April 6, 2017 re: Block 2 Servicing Strategy
Attachments:	Request for Clarification to Follow up to Meeting on Feb 7, 2017, and Letter from Lawyer from Losani Homes on Feb 13, 2017; Re: BPSS Block 2 - "Dalbello Lands"

Hello Dave,

Before responding to your specifics concerns we'd like to ask for the following:

Please use Arial or Verdana 12 in all future correspondence with City staff. This complies with our AODA (Accessibility for Ontarians with Disabilities Act) guidelines and makes it easier to communicate when we can all read the information. I have now changed your original e-mail font (Myriad Pro) as well, below. Some of us could not read the original font.

Regarding specifics (your comments are in black and our responses in blue):

1. We understood the City would talk to us about the updated panels for PIC presentation.

The information is available on the City website now. If you wish to review and comment please respond by April 19, 2017.

2. You have shown a potential development concept with no consultation with our client. Our client has submitted a pre-application request with a concept (and there has been no response).

City staff met with you and your client as requested. Please see meeting minutes attached with your comments.
We also have not received nor are we aware of any concept plans from your client, submitted to the City.

3. Further there were preliminary concepts developed in association with the OMB hearing (nothing similar to the plan shown in the BSS). An example of an issue is that a SWM pond is illustrated on top of a newly constructed house where there is no intention for removal.

The Subwatershed Study which was completed as part of the Fruitland-Winona Secondary Plan concluded that the location of the Stormwater Management Facilities throughout the Plan would be verified and confirmed through the Block Servicing Strategies. The location of the stormwater facilities are based on the existence of a suitable outlet.

4. We are also concerned that your mapping continues to show constraints.

Constraints are shown on your clients' lands as potential, due to lack of access for field confirmation. Its existence and exact location is to be confirmed when your client submits development applications.

5. Our client owns a significant portion of the Block Area and should be adequately consulted on any matter associated with the Block Servicing Study. The fact this information went to the public with no consultation with our client and no recognition of the concept or pre-application meeting recognition is an issue as the public was shown something that is not representative.

Our records indicate that your client was indeed notified. Please see the response to Point # 6, below.
Please note that lack of attendance at a PIC does not in any way negate your or your client's opportunity to comment.

6. We need to discuss the next steps and resolution to this matter such that there is no prejudice or implication to our clients land on matters where they were not consulted (not to mention notified of the PIC).

We would be happy to meet and discuss any plans your client may have. Please note that we would require any proposed plans and materials to be sent in advance of a meeting in order to have a fulsome discussion.

We have confirmed the following regarding Notification for the PIC:

- We have records which indicate that you, Dave, requested to be added onto the Mailing list for Barton and Fifty Road EA only, and you are on that list.

Therefore we would not have included you personally on the Block Servicing Strategy mailing list without a specific request. We do not have a record of your request for being included on the mailing list.

- Mr. [redacted] was invited via the following information in our database, so he was notified directly, as follows:

[redacted]

If this information is incorrect for some reason please accept our apologies and let us know where we made a mistake in the address.

Please note that all area residents receive a free copy of the Stoney Creek News, where we advertised for the PIC twice – March 23 and 30th as well.

Please let us know if you have any questions.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5

Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: Margaret.Fazio@hamilton.ca

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HAMILTON 2017

www.hamilton.ca/canada150

From: [redacted]
Sent: April-06-17 3:13 PM
To: Fazio, Margaret
Cc: McNair, Laurie; [redacted] Mahood, Alissa
Subject: Re: Block Servicing Study

Hi Margaret,

Thanks for the follow-up. We understood the City would talk to us about the updated panels for PIC presentation.
You have shown a potential development concept with no consultation with our client. Our client has submitted a pre-application request with a concept (and there has been no response). Further there were preliminary concepts developed in association with the OMB hearing (nothing similar to the plan shown in the BSS). An example of an issue is that a SWM pond is illustrated on top of a newly constructed house where there is no intention for removal. We are also concerned that your mapping continues to show constraints.

Our client owns a significant portion of the Block Area and should be adequately consulted on any matter associated with the Block Servicing Study. The fact this information went to the public with no consultation with our client and no recognition of the concept or pre-application meeting recognition is an issue as the public was shown something that is not representative.

We need to discuss the next steps and resolution to this matter such that there is no prejudice or implication to our clients land on matters where they were not consulted (not to mention notified of the PIC).

[redacted]

MHBC Planning, Urban Design & Landscape Architecture

540 Bingemans Centre Drive, Suite 200 | Kitchener | ON | N2B 3X9 | [redacted] |
[redacted]

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE

CLICK HERE TO VIEW OUR FEATURE PROJECT

From: "Fazio, Margaret" <Margaret.Fazio@hamilton.ca>
Date: Thursday, April 6, 2017 at 11:50 AM
To: D [redacted]
Cc: "McNair, Laurie" <Laurie.McNair@hamilton.ca>
Subject: RE: Block Servicing Study

Hello Dave,

We have checked and placed you on the Barton and Fifty Road EA mailing list, but not on the Block 2 Servicing Strategy list.
We will add you to the Block list as well.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail:*Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: Fazio, Margaret
Sent: April-05-17 4:42 PM
To: [redacted]
Cc: McNair, Laurie
Subject: RE: Block Servicing Study
Importance: High

Hi Dave,

There was. I am so sorry if that's the case, and will confirm.

You can locate the PIC panels on the project website as of today:
https://www.hamilton.ca/city-planning/master-plans-class-eas/block-servicing-strategies-stoney-creek-and-gordon-dean-class

Please let me know if you have any questions and/or comments.
Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail:*Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: [redacted]
Sent: April-05-17 4:31 PM
To: Fazio, Margaret
Subject: Block Servicing Study

Hi Margaret – was there a PIC on the Block 2 Servicing Strategy last night?
If so, I don't think we were notified.
Thanks.

[redacted]

MHBC Planning, Urban Design & Landscape Architecture
540 Bingemans Centre Drive, Suite 200 | Kitchener | ON | N2B 3X9 | [redacted]

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
CLICK HERE TO VIEW OUR FEATURE PROJECT

Lloyd, Trish

From: Fazio, Margaret
Sent: April 10, 2017 12:09 PM
To: [redacted]
Subject: RE: Hard Copy Map Request

Hello [redacted]

No problem. We will make copies and mail out today.
Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: [redacted]
Sent: April-08-17 1:08 PM
To: Fazio, Margaret
Subject: Re: Hard Copy Map Request

Hello Margaret,

Please mail to:

[redacted]

Thank you,
[redacted]

On Apr 6, 2017, at 2:56 PM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:

Hello,

I understand that you came to our front desk yesterday requesting a copy of the PIC Panels from Tuesday's meeting on Block Servicing Strategies 1 & 2?

We would be happy to mail you/your parents a paper copy. Please confirm the mailing address and addressee name, and we can do that.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*
<image001.jpg>
www.hamilton.ca/canada150

Lloyd, Trish

From: Fazio, Margaret
Sent: April 13, 2017 11:49 AM
To: [redacted]
Subject: RE: Tentative meeting with Mrs. Simone

Hi,

Thank you, [redacted]. I just reserved a time for a meeting with her – sooner than May 18th. We were hoping to April 18- 2-3 p.m., if possible.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

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HAMILTON 2017

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From: [redacted]
Sent: April-13-17 11:48 AM
To: Fazio, Margaret; Dinney, Kathy; Johnson, Brenda
Subject: RE: Tentative meeting with Mrs. Simone

Hi Margaret,

I left a message with Mrs. [redacted] and exchanged emails with her daughter [redacted] this morning re: the initial date and time of this meeting. I will let [redacted] know the update and have her contact you if she has further questions.

[redacted]
Serving Glanbrook, Rural Upper Stoney Creek & Winona
[redacted]

The lobbying of members of the City of Hamilton's Mayor, Council and Senior Management Team are subject to the City's Lobbyist Registry By-law. It's the responsibility of lobbyists to register their lobbying activity. For more information about the Lobbyist Registry please visit www.hamilton.ca/lobbyistregistry.

-----Original Appointment-----
From: Fazio, Margaret

Sent: April-13-17 11:44 AM
To: [redacted]
Subject: Canceled: Tentative meeting with Mrs. [redacted]
When: April-18-17 1:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: City Hall?
Importance: High

Hi,

Please consider this a tentative time and keep it open. Based on our calendars this is the earliest where all of us can attend.

[redacted] - will you be contacting Mrs. [redacted] or shall I?

The meeting length should be sufficient if it's one hour maximum, but we have a window that is wider, so we can offer 1-2 or 2-3 p.m. as two options. If this doesn't work we'll look for further meetings at a later date.

Thank you,
Margaret

Lloyd, Trish

From: [redacted]
Sent: April 13, 2017 11:55 AM
To: [redacted]
Cc: Fazio, Margaret
Subject: RE: Block 2 Servicing Strategy Fruitland-Winona Secondary Plan

Hi [redacted],

Planning department would like to push the meeting earlier in order to meet their study deadlines. They are hoping to have it Tuesday, April 18 from 2-3pm. Could you please contact Margaret (CC'd) for further details and to confirm if this date works for your family?

Thanks,

[redacted]

From: [redacted]
Sent: April-13-17 11:01 AM
To: [redacted]
Subject: RE: Block 2 Servicing Strategy Fruitland-Winona Secondary Plan

No problem,

The meeting will include [redacted], and three managers from the planning and economic development department, Sally Yong- Lee, Monir Moniruzzaman & Margaret Fazio.

[redacted]

From: [redacted]
Sent: April-13-17 10:54 AM
To: [redacted]
Subject: Re: Block 2 Servicing Strategy Fruitland-Winona Secondary Plan

Thanks, [redacted]
Do you know who will be attending the meeting?
I'll let you know if the date is good when she calls back.
Maria

Sent from my iPad Pro

On Apr 13, 2017, at 10:37 AM, [redacted]> wrote:

> Hi [redacted],
>
> Just wanted to let you know I've left a message at your Mom's to tell her that we have a meeting tentatively booked for Thursday May 18th, 10am at City hall room 433. I've asked her to give me a call back to confirm if she is available that date.

Thanks,

[redacted]
Serving Glanbrook, Rural Upper Stoney Creek & Winona
[redacted]

The lobbying of members of the City of Hamilton's Mayor, Council and Senior Management Team are subject to the City's Lobbyist Registry By-law. It's the responsibility of lobbyists to register their lobbying activity. For more information about the Lobbyist Registry please visit www.hamilton.ca/lobbyistregistry.

From: [redacted]
Sent: April-10-17 8:17 AM
To: [redacted]
Cc: [redacted]; Fazio, Margaret
Subject: Re: Block 2 Servicing Strategy Fruitland-Winona Secondary Plan

Absolutely!

[redacted]
City of Hamilton
[redacted]

Sent from my BlackBerry 10 smartphone on the Bell network.

From: [redacted]
Sent: Monday, April 10, 2017 8:16 AM
To: Johnson, Brenda
Subject: Re: Block 2 Servicing Strategy Fruitland-Winona Secondary Plan

Thank you very much, [redacted]
Please call my mom about times and dates.
[redacted]

On Apr 10, 2017, at 8:13 AM, [redacted] wrote:

Hi [redacted]
Thanks for your email and it was great to finally meet you as well

My assistant [redacted] and Margaret Fazio are working on arranging a meeting with your family and appropriate staff. I appreciate your patience while both Kathy and Margaret can determine a few dates/times work best to send to your family to meet at everyone's convenience

Will keep you posted
[redacted]

[redacted]
City of Hamilton
[redacted]

Sent from my BlackBerry 10 smartphone on the Bell network.

From: [redacted]
Sent: Monday, April 10, 2017 8:09 AM
To: [redacted]
Cc: Fazio, Margaret; [redacted]
Subject: Block 2 Servicing Strategy Fruitland-Winona Secondary Plan

Good morning Mr. Maunder,

We spoke at the Public Information Centre in Stoney Creek last Tuesday, April 4th in regards to the second Block 2 Servicing Strategy map. We received Map No. 1 at the second session of Public Meeting No. 1 on December 7th, 2016. My parents attended the first meeting on December 2nd as well, but there wasn't a sufficient map available. In speaking with my brother, Enrico Simone, last Tuesday you mentioned that I had not contacted you although I informed you that I had done so. You also stated that we had refused property visits, although I informed you that Aquafor had already visited our property on more than one occasion (June, August 2016 and maybe more), and we have not been able to get reports or information resulting from those visits.

On January 12th, 2017, I spoke with Mr. [redacted] of Dillon Consulting Limited regarding watercourse 6.1 on Map No. 1. He informed me that he created Map No. 1 in November 2016 with the data provided to him by Aquafor Beech Ltd.

I telephoned you that same afternoon, Thursday, January 12th, 2017, and left two messages asking for you to call me back. The number I phoned, 905-629-0099, was provided on the comment sheet by the City of Hamilton at the first public meeting on December 2nd. I also telephoned and left a message for Ms. Ash Baron in Guelph, at 519-224-3733, to call me back. I was not contacted by either Ms. Baron or yourself.

The email below, although showing was sent from my iPhone on January 21th, 2017, does not appear to have actually been sent. As per my phone messages in January, and my verbal requests at the PIC meeting last Tuesday, April 4th, it still remains that we would like the information pertaining to Aquafor Beech Ltd.'s visits to [redacted] in Stoney Creek. We are questioning the determination of the watercourse which is a man-made ditch that my brother and father created. We would like to

review the scientific data which changed a ditch to a watercourse and its subsequent extension south and west. We would also like to know how it was scientifically determined that two more swm ponds be located in Block 2 on this April 4th map, specifically the one on our property, when there was only one pond shown at the far west on Map No. 1 in December 2016.

We would like to meet with you, Ms. Margaret Fazio and Ms. Brenda Johnson, our Ward 11 Councillor, on these matters.

Sincerely,

[redacted]
On behalf of [redacted]

Hello Ms. [redacted], B.E.S.,

I'm writing in regards to the Block 2 Servicing Strategy for the Fruitland-Winona Secondary Plan Lands Public Meeting No. 1 map which was created by Dillon Consulting Limited in November 2016.

On June 9, 2016 you visited [redacted] on behalf of the City of Hamilton. Aquafor Beech forwarded information to Dillon Consulting in order to create this map.

I'm looking for a copy of your report as a result of your visit to [redacted] Street, Stoney Creek.

Also, I would like the interpretation of your findings in determining the waterways for the Block 2 Servicing Strategy, specifically Watercourse No. 6.1.

Sincerely,

[redacted]

Sent from my iPhone

Lloyd, Trish

From: [redacted]
Sent: April 21, 2017 5:47 PM
To: Fazio, Margaret
Cc: [redacted] Dave Maunder [redacted] McNair, Laurie; [redacted]
Subject: Re: NOTES FROM Phone Call post PIC 1 for Block 1 and Block 2 - Request to be added to the Blocks 1, 2 and 3 Mailing lists

Hello Margaret,

It was a pleasure speaking to you and thanks again for the valuable information.

I just wanted to state that the company is best described as a real estate investment/development company in relation to the last sentence in the email from Margaret for clarification purposes.

Thank you in advance for the ongoing updates pertaining to Block 1 through 3.

Have a wonderful weekend,

[redacted]

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: Friday, April 21, 2017 2:35:07 PM
To: [redacted]
Cc: [redacted] Dave Maunder [redacted] McNair, Laurie; [redacted]
Subject: NOTES FROM Phone Call post PIC 1 for Block 1 and Block 2 - Request to be added to the Blocks 1, 2 and 3 Mailing lists

Hi,

It was a pleasure to talk to you today.

We spoke about what Block Servicing Strategies are about – set up for orderly development while providing a framework for services that will be part of the developments going forward in the study areas. We are in the middle of the studies still, and timing of (phasing) of developments between Blocks and within Blocks is yet to be determined.

As requested, I'd like to ask the respective Block 1 & 3 consultants to include you in notification for their project public meetings, via cc of this e-mail.
Laurie - please do the same for Block 2.

Daniel represents a firm (please feel free to correct this if you like) which is a real estate investment company – retail - commercial, residential and others. The company is parts builder-developer and also a real estate investment company – they create an investment product for potential investors.

We hope to see you at the next PIC!

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

* Please note that my email address domain has changed to @equiton.com, please update your records.

[redacted]

Equiton Partners Inc.
1111 International Blvd., Suite 600
Burlington, ON L7L 6W1
[redacted]

EQUITON

From: [redacted]
Sent: April-17-17 10:57 AM
To: Fazio, Margaret
Subject: Questions Regarding Block 1 and Block 2

Hi Margaret,

I hope you had a wonderful weekend. I was wondering if you were available for 20 minutes for me to call you today or tomorrow to ask a few questions regarding Block 1 and 2 for Fruitland Winona that I was unable to answer from the material on the site.

Let me know when you have a chance. Thank you

[redacted]

* Please note that my email address domain has changed to @equiton.com, please update your records.

[redacted]

Equiton Partners Inc.
1111 International Blvd., Suite 600
Burlington, ON L7L 6W1

[redacted]

Lloyd, Trish

From: Margaret Fazio <magsfazio@sympatico.ca>
Sent: May 3, 2017 8:55 PM
To: Fazio, Margaret
Subject: FW: F-W BSS process and April PIC-Blocks 1 and 2

From: iplanning [mailto:iplanning@hamilton.ca]
Sent: May 2, 2017 4:59 PM
To: Margaret Fazio [redacted]
Subject: FW: F-W BSS process and April PIC-Blocks 1 and 2

Hi,

FYI below. I spoke with [redacted] (Block 1) about this briefly today. He says Mr. [redacted] consultant did indeed attend a site visit, but no notes from the visit were shared with the amecfw team afterwards, so he is not quite sure what this note means other than intimidation tactics, but they are asking us for our notes/reports. Notes we have, but not reports, yet and planning the next PIC already.

If we are still in litigation with Mr. [redacted] where does this place us in relation to process and what can/should be shared?

Please advise,

Thank you,
Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: [redacted]
Sent: April-26-17 10:47 AM
To: [redacted]
Cc: iplanning; [redacted]
Subject: F-W BSS process and April PIC-Blocks 1 and 2

Hi [redacted] Margaret:

This is further to the recent PIC concerning Blocks 1 and 2.

With respect to both Blocks we are, on behalf of our clients, preparing more fulsome comments which will be provided when completed.
Given the incredible length of time taken to prepare the information shared with the public at the PIC and given our clients' clear interest in the process as landowners and appellants/parties to the Secondary Plan appeals at the OMB, we trust you understand that it is important to the process that our clients be given the time to respond and that their input and clear concerns be properly integrated into the process and substance of the Strategies.

With respect to Block 1 we wonder why the input provided by an ecologist retained by our clients has not been fully integrated into the concepts presented.
We understand Dougan Consultants were retained to provide ecological input to AMEC and to the process and strategy but that the recommendations from Dougan were rejected or not incorporated into the concepts by City staff. Our ecologist walked the sites of the appellants with an ecologist from Dougan and we understood that the ELC mapping we provided with respect to these sites was to be incorporated into the concepts and strategy.
They should be dealt with in this BSS process not in a subsequent EIS.
Please provide us with all of the documentation relating to these issues-including the documents from AMEC/Dougan and the City staff comments.
This needs to be a transparent process.
Once we have those documents, we can comment further. Should, as we fully expect and as we thought had been agreed, the natural heritage constraints, other than the watercourses, on our clients' properties be removed, this would have obvious implications for the designations of these lands and the remaining development oriented concepts.

As for Block 2, our clients are in the process of organizing a landowners group and we reserve our comments until we have completed that process.
We understand that comments from our engineering firm, with respect to one of the watercourses, have not been incorporated into the concepts and look forward to following up with that, as well as with our issues we see, once our group has been formed.
We trust you agree the buy-in and full participation of the landowners in this process, which is usually driven by the landowners themselves, is appropriate in the circumstances.

Note that any litigation with respect to these matters is being handled by Mr. [redacted] who has been copied on this email. Please respond as needed to both Mr. [redacted] and myself.
I will continue to respond to the process until, hopefully,discussion with and input from our consultants takes over resulting in appropriate Strategies acceptable to all.

Thank you.
[redacted]

Rudolph Law Office
10 Marsdale Dr.
St. Catharines ON L2T 3R8
[redacted]

Lloyd, Trish

From: iplanning
Sent: June 23, 2017 2:27 PM
To: Fazio, Margaret
Subject: FW: Comments on BSS (Block 2) - Losani Homes
Attachments: June 22_Submission on BSS_Losani Homes.pdf

From: [redacted]
Sent: June-22-17 4:47 PM
To: iplanning
Cc: [redacted]
Subject: Comments on BSS (Block 2) - Losani Homes

Please find attached comments on the Block 2 BSS.

[redacted]
MHBC **Planning, Urban Design & Landscape Architecture**
540 Bingemans Centre Drive, Suite 200 | Kitchener | ON | N2B 3X9 | [redacted]

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PLANNING
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ARCHITECTURE

KITCHENER
WOODBRIDGE
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BARRIE
BURLINGTON

June 22, 2017

Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager
City of Hamilton
71 Main Street West, 6th Floor
Hamilton, ON L8P 4Y5

Dear Ms. Fazio,

RE: Block 2 Servicing Strategy – Comments on PIC #2 Material
OUR FILE 11172A

On behalf of our client, Losani Homes, we are submitting these comments in response to the information presented at the PIC #2 meeting for the Block 2 Servicing Strategy. In general, there are a number of concerns with the information that has been presented to the public and it is requested that these comments and the recent pre-application submission for a development application be considered in preparation of any further drafts of the Block 2 Servicing Strategy.

We agree with the residential land use designations as shown on the Secondary Plan Land Use slide, as this reflects the decision of the OMB that was the result of coordination and settlement with City staff. The Secondary Plan Land Use Schedule identifies a 'Neighbourhood Park' and through previous discussions it was intended the size of the park would be determined at the time of a development application in accordance with the City policies for parkland dedication. The Secondary Plan and the Official Plan do not identify any natural features or constraints on the lands.

The following is a summary of the concerns:

1) The aerial photograph used in the presentation material does not reflect the existing conditions of the lands.

2) The Natural Hazards and Environmental Constraints Assessment (Fig-2) identifies significant wildlife habitat, unevaluated wetland and an unidentified polygon. As acknowledged by City staff and the consultant, this information is not based on site specific fieldwork on the lands. In our opinion, this information should not be depicted as a constraint. Our client retained Mr. Ian Barrett (Colville Consulting) to complete site assessment and field verify to determine if there were any natural features or habitat on the lands. A technical memo from Mr. Barrett is attached to this letter. Mr. Barrett concludes that the majority of the properties are currently being used for the cultivation of agricultural crops and no vegetation communities on the property are consistent with wetland; and, the property does not appear to meet any of the criteria to be

considered significant wildlife habitat. A request was made to the City to visit the site in May/June and was declined by the City. We would be pleased to meet on site with the City and the consultant to review the findings of Mr. Barrett such that the final mapping in the BSS accurately reflects site conditions.

3) The Stormwater Servicing slide (Fig-4) identifies existing 'Environmental Constraints', however in the 'Proposed Drainage Plan' the lands are shown with a full development concept. Based on this mapping, it would appear the report is suggesting that all the lands are developable. We would agree that there are no constraints to development of the lands. We ask that the City confirm that the intent is that the lands are fully developable and that there is no further study required at this time or for a future application.

4) The Concept Plan should be revised as it:
    a. Does not reflect the concept plan submitted to the City as part of the pre-application process. The pre-application meeting was held in advance of PIC #2. Any future concept plan should reflect the submission to the City as the intent is not similar to the concept in the BSS.
    b. Locates a SWM facility on a recently constructed home.
    c. Does not reflect the actual requirement for parkland dedication or the location of parkland as proposed with the concept plan submitted and reviewed by the City.
    d. Does not provide a road connection to Glover Road, which was discussed as an option with City staff at the pre-application meeting. (It is noted that there is a conflict with the Stormwater Servicing Plan and the Concept Plan as it relates to the road pattern).

We would be pleased to meet with City staff and the consultant to work through the concept plan for the lands and the details related to servicing the lands such that this information can be included in the final report.

Yours truly,

MHBC

[redacted]

[redacted]

C. [redacted]

COLVILLE CONSULTING INC.

MEMORANDUM

To: [redacted]s – Losani Homes
[redacted] – MHBC Planning

From: [redacted]

Re: Block 2 Servicing Strategy Natural Heritage Comments – [redacted]

This memorandum has been prepared to outline my comments regarding the Environmental Constraints Assessment information presented by Aquafor Beech as part of PIC #2. I have reviewed the information presented in Figure 2 of the Aquafor Beech poster boards and have specific comments related to the identification of natural heritage features on and adjacent to the [redacted] properties (hereafter referred to as the Subject Lands).

From my review of Figure 2, it is my understanding that natural heritage features identified on the Subject Lands include unevaluated wetland, significant wildlife habitat and a portion of Watercourse 6.1. Figure 2 also indicates that a Bobolink was observed on the [redacted] property. Although Figure 2 provides a graphic representation of natural heritage features on the Subject Lands, no supporting information has been made available to described wetland vegetation communities identified on the Subject Lands or provide clarity as to the nature of the significant wildlife habitat on the property.

Based on discussions with Dave Maunder, it is my understanding that Aquafor Beech staff did not access the Subject Lands during their assessment of the properties, and information presented in Figure 2 is generated solely from observations made from Barton Street and adjacent lands. Without primary access to these lands, it is unknown how a detailed botanical inventory was completed, which would be required to delineate the extent of wetland features on the properties.

From my recent observations of the Subject Lands, it is evident that the majority of the properties are currently being used for the cultivation of agricultural crops and no vegetation communities on the property are consistent with wetland (see Figure 1 attached). It is also unclear to me why a portion of the [redacted] property has been designated as significant wildlife habitat by Aquafor Beech, as potential habitat on the property does not appear to meet any of the criteria to be considered significant wildlife habitat.

The accurate delineation of natural heritage features in the Study Area is critical to informing the Block 2 Servicing Strategy. Without accurate information, the validity of any concept plans for Block 2 are in question. It is evident that the Concept Plan prepared by Aquafor Beech as Figure 3 does not depict the concept of Losani Homes that formed part of a formal pre-application process with the City. In addition, the Concept Plan prepared by Aquafor Beech indicates that the extent of natural heritage features on the Subject Lands are to be delineated and assessed through the completion of an EIS. It is crucial that information included in the Block 2 Servicing Strategy accurately depict the current extent of natural heritage features in the Study Area and that the delineation of features not be deferred for refinement at future date.

Based on the information currently presented by Aquafor Beech, it is recommended that the following occur:

1) Field data and assessment information collected for the Subject Lands should be obtained from Aquafor Beech or the City of Hamilton and reviewed for accuracy and consistency with current site conditions.
2) It is my understanding that City staff have indicated that this is not an appropriate time for a site visit. Typically field assessments, and particularly wetland evaluations, are completed in July and August when vegetation is at a maximum extent for the year. It is my recommendation that a site visit be arranged with Aquafor Beech and/or City staff in early July to assess vegetation conditions on the Subject Lands. The extent of possible significant wildlife habitat should also be refined during this visit. Completing a site visit in early July will allow ample time to incorporate more current and accurate information into the BSS.
3) The extent of Watercourse 6.1 should be delineated with Aquafor Beech and/or City staff to verify the accuracy of mapping included in the BSS.
4) The BSS should be revised to exclude illustrating the extent of any natural heritage features on these properties pending site specific refinement with Aquafor Beech and/or City staff. Should site specific refinement not be possible prior to adoption of the BSS, site specific refinement should occur through the planning application process, however no features should be identified on this lands as to not prejudice future discussions regarding natural heritage features on the Subject Lands.

Legend

———	Property Boundary
AG	Agricultural
RES	Residential
CUM1-1	Dry - Moist Old Field Meadow Type
CUT1	Mineral Cultural Thicket Ecosite
———	Watercourse 6.1

Figure 1
Vegetation Communities on and Adjacent to [redacted]

Natural Heritage Assessment
[redacted]

Prepared for: **Losani Homes**

Prepared by: COLVILLE CONSULTING INC.

June 2017	File: C17006

Lloyd, Trish

From: [redacted]
Sent: September 6, 2017 9:45 AM
To: [redacted]
Cc: [redacted] Fazio, Margaret
Subject: RE: [redacted] Damage Flooding Aug 1, 2017

Thank you very much !!

From: [redacted]
Sent: September-06-17 7:59 AM
To: [redacted]
Cc: [redacted]; Fazio, Margaret
Subject: RE: [redacted] Property Damage Flooding Aug 1, 2017

Good Morning,

Staff open up folded culvert end opposite [redacted] Cut off and sharp areas and angled it shorter on the shoulder side to take the ditch water with less restriction. We also resurfaced the asphalt over the culvert / sidewalk portion. As it was deteriorating.

For the ditch downstream, it is free and clear in the city road allowance.

Thank you
[redacted]

From: [redacted]
Sent: August-21-17 12:28 PM
To: [redacted]
Cc: [redacted]
Subject: FW: [redacted] Property Damage Flooding Aug 1, 2017

Upon your return can you please look into this location ,see below thanks

Thank-you ,

[redacted]
DISTRICT SUPERINTENDENT ROADS EAST
OPERATIONS & MAINTENANCE
PHONE : 905-546-2424 EXT 1891
FAX : 905-643- 7122
EMAIL : John.Searles@hamilton.ca

From: [redacted]
Sent: August-15-17 9:42 AM
To: [redacted]
Cc: [redacted]
Subject: Fw: [redacted] Property Damage Flooding Aug 1, 2017

John

Can you have someone look into this?

Cheers,

[redacted], P.Eng

Project Manager / Drainage Superintendent
Capital Rehabilitation and Technical Operations
Operations Division
Public Works Department
City of Hamilton

From: [redacted]
Sent: Tuesday, August 15, 2017 9:36 AM
To: [redacted]
Subject: FW: [redacted] Property Damage Flooding Aug 1, 2017

Hey [redacted],
We met at this property last week to review some flooding issues that occurred during one of the recent big storms, notably the Aug 1st event that was problematic in Stoney Creek. We noted that the culvert crossing the road to the north side was pinched at the outlet. I'm not sure what's happening downstream as of yet but is this something our crews can repair in the meantime?

Thanks
[redacted].

From: [redacted]
Sent: August-09-17 3:28 PM
To: Ammendolia, Carlo
Cc: [redacted]; Fazio, Margaret; [redacted]
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

See you tomorrow, [redacted].

Sent from my iPhone

On Aug 8, 2017, at 1:49 PM, [redacted] wrote:

> Hi [redacted],
> We'll see you on Thursday at 10am.
>
> [redacted]

Acting Manager - Construction | **City of Hamilton**
Planning & Economic Development Department | **Growth Management Division**
Phone: 905-546-2424 ext.2155

From: [redacted]
Sent: August-03-17 9:33 PM
To: Ammendolia, Carlo
Cc: [redacted]; Fazio, Margaret; [redacted]
Subject: Re: [redacted]n Property Damage Flooding Aug 1, 2017

Hi [redacted] Thursday morning, August 10th? [redacted]

Sent from my iPad Pro

On Aug 2, 2017, at 9:33 PM, [redacted] wrote:

> Hi [redacted],
> What is your availability for a site meeting next week. I have the afternoon of next Wednesday and Thursday open.
>
> [redacted]
>
> Sent from my Bell Samsung device over Canada's largest network.
>
> -------- Original message --------
> From: "[redacted]ca>
> Date: 2017-08-02 9:16 PM (GMT-05:00)
> To: maria simone [redacted]
> Cc: "[redacted] "Fazio, Margaret" <Margaret.Fazio@hamilton.ca>, "[redacted]
> Subject: Re[redacted] Property Damage Flooding Aug 1, 2017
>
> I"ve forwarded this on to the adjacent property owner and requested an on site meeting.
>
> I'll reply back immediately as soon as I get a response.

[redacted].

Sent from my Bell Samsung device over Canada's largest network.

-------- Original message --------
From: maria simone [redacted]
Date: 2017-08-02 8:58 PM (GMT-05:00)
To: '[redacted]
Cc: '[redacted]'
[redacted]'
[redacted] "Fazio, Margaret"
<Margaret.Fazio@hamilton.ca>, '[redacted]"
[redacted]
Subject: [redacted] Property Damage Flooding Aug 1, 2017

Hello [redacted],

I'm contacting you regarding property damage we sustained yesterday due to flooding and erosion of our front yard from Culvert 6.1 up to our driveway. (Photos 1, 2). It was not quite a one-hour storm. This is a follow-up to [redacted]'s email to you on July 26, 2017.

It appears that in an effort to remedy lane closures and flooding on May 5, 2017 (east of [redacted]), the contouring of the lands at [redacted] was changed in June which [redacted] saw when she visited us on July 25, 2017. This change resulted in re-directing significantly damaging amounts of stormwater from an historical northward flow to a rushing westward flow toward our property yesterday. (Photos 1-5)

While this contouring stopped stormwater from crossing over Barton Street, this water is now redirected to our property resulting in flood damages and erosion to our property.

I've added Margaret's name to this email as we have already met with her about flooding concerns in June, included these concerns in our comments to the Block 2 Servicing Strategy PIC No. 2, and patiently await her response.

We are deeply concerned that the "Existing Drainage" (Fig-4) does not accurately map the actual historical path of stormwater. Significant amounts of water run north at the main entrance of [redacted], (but not south of the entrance?), then around the corner west along Barton to Culvert 6.1. We do not understand why the existing Stormwater Management systems are not indicated on the "Existing Drainage" map, nor the Storm Sewer Plans, Minor (Fig-6) or Major (Fig-7).

Finally, whatever happened to Culvert 6.2? And, how does Block 2 water drain to 6.3 at Glover and Barton?

Sincerely,

[redacted]

<image001.jpg>

<image002.jpg>

<image003.jpg>

<image004.jpg>

<image005.jpg>

Attach: Fig-4,6,7

Sent from my iPad Pro

On Jul 26, 2017, at 9:09 AM, [redacted]ca> wrote:

> Hello [redacted]
> Hope all is well
> I understand you visited [redacted] with regards to the grading issue from next door
>
> Can you please approach Losani homes and ask them to re-grade the area that send the drainage to [redacted]?
>
> Historically the drainage went north to Barton and is now going west
>
> Many thanks
> [redacted]
>
> Sent from my BlackBerry — the most secure mobile device — via the Bell Network
>
> ---
>
> **From:** [redacted]
> **Sent:** July 25, 2017 9:36 PM
> **To:** [redacted]
> **Subject:** Photo water [redacted]
>
> Hi [redacted],
> Here's a photo of water this morning, Tuesday, after big rain on Thursday.

It's a "wet sponge" where historically it was dry.

The "Existing Drainage" map at Block Servicing PIC is incorrect as it does not show the water historically draining down Glover Road, around the corner, under [redacted] driveway, to culvert 6.1. (Attached below.). We included this in our comments to the June 8, 2017 PIC but have not gotten a response.

Thanks for coming to visit. It was nice to see you.
[redacted]

Sent from my iPhone

<block-servicing-strategies-gordon-ave-ea-pic2-block2-display-panels Stormwater Servicing Fig-4.pdf>

Lloyd, Trish

From: [redacted]
Sent: November 28, 2017 7:49 AM
To: Fazio, Margaret
Cc: [redacted] Dave Maunder [redacted] L [redacted]; Yong-Lee, Sally; [redacted]; [redacted] S [redacted]
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017 - Response

Hello Margaret et al,

Thank you for promptly responding to my October 2nd email and for providing direction. Please note that my parents submitted their public comments on October 4th before having received your email on October 5th and the printed **Barton and Fifty Road EA PIU** panels (27 pages) in the mail on October 6th. We look forward to having our comments published.

The proper names of the reports from the City website which I referenced in my email as having conflicting mappings of watercourses 6.0-6.3, among other points, are listed below. I was able to find the **"SCUBE West Subwatershed Study, Phase 1 and 2 Final Report; May 15, 2013"** (915 pages) online, not the **Stoney Creek Urban Boundary Expansion (SCUBE) Sub-Watershed Studies (East and West - 2012)** version you referenced as the one currently being used for planning and environmental assessment.

As prefaced in my October 2nd email, I started out trying to find a solution to our flooding event on August 1st which you fairly explained would be forthcoming in separate correspondence. We are still awaiting this response. That search led me to further questions about inconsistencies in the related studies I reviewed. In an attempt to understand the most recent information you have provided, especially about environment assessments, I'll try to clarify what I understand.

We did not know that the SCUBE Subwatershed studies were actual *Environmental Assessment studies*. I recently reviewed the *"Public Information Centre Display Panels" from PIC#1 on June 24, 2010* for the **"SCUBE East and West Sub-watershed Studies Phase 1"** on the City website. The online panels for "Municipal Class Environmental Assessments Studies" pertaining to *SCUBE East* and *SCUBE West* simply say *"See Display"*. However, there aren't any display panels which provide information on project status, summary or follow-up for SCUBE East or West environmental assessments.

The **"SCUBE West Subwatershed Study, Phase 1 and 2 Final Report, May 15, 2013"** document does not contain the term *"environmental assessment"* in the title, nor does it identify itself as such in the introduction of the document. It's on page 628, in the *"Public Information Centre Display Panels"* section from PIC#1 on June 24, 2010 that the environmental assessment process is outlined: *"The Study...is intended to satisfy Phases 1 and 2 of the..(Class EA) process"*. So, June 24, 2010 was actually EA Phase 2. If there is follow-up, I could not find any to Phase 1 or Phase 2 between June 2010 and May 2013.

Are we now in the **"SCUBE Subwatershed Study: Phase 3: Implementation; Aquafor Beech Limited; November 28, 2014"** (424 pages) and if so, is this still part of the EA process? It's in this document that the opening letter details revisions *"to reflect the removal of Woodland 6"*. The four "Future Study Requirements" and statements that pertain to the EA process in Phase 3 are as follows:

"Refinement and finalization of hydraulic modelling and floodplain mapping for Watercourses 5.0 and 6.0 north of Barton Street to be completed as part of future Environmental Assessment Studies" Page 25.

"The City of Hamilton will complete a Streetscape Master Plan for Barton Street which will include the design and definition of the Barton Street Pedestrian Promenade. The City of Hamilton should also complete an Environmental Impact Statement (EIS) to:...". Pages 28, 43.

"Drainage improvements within this area are expected to be investigated as part of future Environmental Assessment studies. Future refinement to the hydraulic modelling downstream of Barton Street and associated floodline mapping is anticipated to be undertaken as part of these studies." Page 33.

"Per Section F3.3.1.1 of the Urban Official Plan, the Environmentally Significant Area Impact Evaluation Group (ESAIEG) will review all Environmental Impact Statement reports and advise City of Hamilton staff on the impacts of proposed land use changes within or adjacent to natural areas." Page 44.

The **"SCUBE West Subwatershed Study, Phase 1 and 2 Final Report, Aquafor Beech, May 15, 2013"** (915 pages) relies heavily on the **"City of Hamilton; Watercourse 5 & 6 Class Environmental Assessment Study, Draft Report; Dillon, November 2007"** (62 pages) and the **"Watercourse No. 7-Creek System Improvements; Class Environment Assessment; Community of Stoney Creek; City of Hamilton; Philips, September 2003"** (25 pages). As I mentioned in my previous email, the recommendations in these reports appear to be based on certain data which seems missing; certain works which were not completed; and certain changes which were implemented, not implemented, or do not appear to be taken into account.

I understand that you are advising us to contact another City department about the existing culvert blockages at the Arvin Ave WC6.1 crossing. Doing so, however, does not address whether these conditions pre-existed completed EA studies. In addition, why is there a lack of data for WC6.1 crossings in the related and completed EA studies that are the foundation for the current **"Municipal Class Environmental Assessment, Phase 3 & 4 Barton Street and Fifty Road Improvements; Amec, Foster, Wheeler, September 21, 2017"** (29 panels), the Block 2 Servicing Strategy and the Fruitland Winona Secondary Plan?

Our previous questions remain including the following:

- WC 6.3 crosses under Barton at Glover: Why is this culvert not mapped in the Block 2 Servicing Strategy? Why is the mapping of WC 6.3 sporadic? Are there studies completed to support it's location?

- Regarding Stormwater Servicing, Block 2 SS page 6: How can stormwater designated as 6.3 (for 2.2ha) be re-directed elsewhere? How is this justified? *"...higher flows will be directed by an overflow grate into a storm sewer within the watershed of Watercourse 6.3" (Dillon 2007, page 4).*

- Why does WC 6.2 appear, disappear, then reappear in various EA studies and plans?

- Why is data missing for the 6.1 water crossing at Arvin Ave in the EA studies?

- When will the WC 6.1 designation on our property be corrected and reinstated as a drainage ditch per our discussion, the blueprints DeFilippis prepared for the City and the inspection letter from the HCA which we provided to you at our meeting on May 18th, 2017?

"Staff will be in a position to release specific information on all Block 2 SS issues when the Draft Study Report has been finalized and approved by the Project Team and then by Council, by the end of 2017." These decisions by the City greatly affect our property. We are deeply concerned that your latest email states that we will not receive any answers until ***after*** study reports are finalised and approved. We are equally concerned about the effects on our property of the way stormwater will be managed and as been managed to date.

"City of Hamilton; Watercourse 5 & 6 Class Environmental Assessment Study, Draft Report; Dillon, November 2007" reports that the recommended MDP 6.1 and 6.3 diversions were not implemented. In contrast, **Class Environment Assessment; Community of Stoney Creek; City of Hamilton; Philips, September 2003** reports *"completed"* diversion information in Table 4 stating that 6.1 and 6.3 were diverted to 6.2 as a result of Ministry of Transportation QEW works. I don't understand why we have to wait for more reports to be finalised to receive an answer about these finalised reports from 2003 and 2007?

Is it not possible that if all the grants, studies and EA recommendations over the last 20 years were applied in earnest, starting with the Master Drainage Plan in 1998 up to SCUBE " unevaluated wetlands", that we would not require a pond on our property? Our property is not the largest or lowest elevation; it is one of several lower elevations in Block 2 including areas north of Barton, where a pond historically existed.

Perhaps these questions on past events can be answered:

- Which OMB appeals to the FWSP are still not addressed?

- Are we now in the **SCUBE Watershed Study Phase 3: Implementation (Nov 28, 2014)**? Is this also an environmental assessment ? Are the recommendations being implemented?

- Have WC 6.2 culvert improvements north of QEW actually been completed? *"Construct three new culverts downstream of the QEW on Watercourse 6.2" (Dillon 2007, page 4).*

- I could not find an explanation for removing watercourse 6.2 in the **"City of Hamilton; Watercourse 5 & 6 Hydraulic Assessment; Dillon, January 2011"** (160 pages) while it was included in the **"City of Hamilton; Watercourse 5 & 6 Class Environmental Assessment Study, Draft Report; Dillon, November 2007"** (62 pages) and **"Hydrologic and Hydraulic Analysis for Bridgeport Watercourses; May 2005, revised January 2006; per Dillon 2007"** (Dillon 2007, page 4). What was the rationale?

- Where is the Arvin Avenue Stormwater Management Treatment Facility located? What form does it take? What area does it service? That's the one referred to being located west of WC 7.0 on page 17 of **"Watercourse No. 7-Creek System Improvements; Class Environment Assessment; Community of Stoney Creek; City of Hamilton; Philips, September 2003** (25 pages).

We are looking for assurances that finalised studies will be completed, reported and implemented accurately, and that plans and changes to plans have a scientific basis.

Upon your suggestion, we look forward to reviewing your responses with our planner and find it more efficient to meet with him once we have some answers.

Sincerely,

[redacted]

On Oct 5, 2017, at 5:03 PM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:

Hello [redacted] et al,

Thank you for your comments below and hard copy comments received from Mr. and Mrs. [redacted] – post PIU on September 21, 2017.

Our response/comments to your e-mail and hard copy comments and questions, as per our understanding, are as follows:

1. **RE: existing culvert conditions on Arvin Avenue**, we ask that you please call 905-546 – CITY (2489) – the City's Calling Centre, and ask to speak to "*District East Road Operations Group to report poor condition of a cross-road*

culvert". They will then record a service request, and schedule an investigator, who will then look after the issue.

2. **RE: previously asked questions about regulatory status of Watercourse 6.1** - The project study teams have had the pleasure of meeting with your family and consultant about the disposition of/regulatory status of Watercourse 6.1 during the course of the Block 2 Servicing Strategy, and now as part of the *Introductory* Barton and Fifty Road EA, and have taken all provided information into consideration. The project team continues to be working on the finalization of the Block Servicing Strategy.

    a. **TIMING OF RESPONSE:** Staff will be in a position to release specific information on all Block 2 SS issues when the Draft Study Report has been finalized and approved by the Project Team and then by Council, by the end of 2017. You should also be aware that we cannot fully finalize Block Servicing Strategies until all Ontario Municipal Board (OMB) appeals are addressed/finalized for the Fruitland-Winona Secondary Plan, which may delay the Servicing Studies' completion timeline.

3. **RE: the relatedness of various studies in this area**

    - **The Fruitland-Winona Secondary Plan (Secondary Plan)** and the Block Servicing Strategies and are using stormwater inputs from the latest study conducted in this area - **Stoney Creek Urban Boundary Expansion (SCUBE) Sub-Watershed Studies (East and West - 2012)**, which followed the Municipal Class Environmental Assessment (EA) public consultation process, based on the EA Act.

    - The **Barton and Fifty Road Phases 3 & 4 EA** will incorporate the drainage recommendations provided by the Block Servicing Strategies (and outside of those, the above mentioned SCUBE Sub-Watershed EAs).

    - The **Barton and Fifty Road EA PIU panels** show what exists in the study area today. Since Block Servicing Strategies are not yet completed, their recommendations are not yet incorporated into the EA process. It is noted that this could be explained/shown better going forward in the study process.

    - The **full scope of the Barton and Fifty Road EA** is shown in the PIU panel No. 8 titled "problem and opportunity statement", and can also be commented on, as part of the comment period ending tomorrow, October 6, 2017.

      If you require a live web link, please follow this hyperlink to the web page directly:
      https://www.hamilton.ca/city-planning/master-plans-class-eas/barton-street-and-fifty-road-improvements
      The PIU panels can be found under the "Public Consultation" tab.

4. **Regarding other flooding questions and others regarding Barton and Fifty Road EA** they will be forthcoming in separate correspondence.

We are not sure if we have understood your comments/questions fully, and would like to take the liberty to encourage you to review our responses with your consultant (John Henricks, included on this e-mail). Please let us know if the information provided above is helpful. If we have not addressed all of your concerns, we ask to please clarify what answers you seek.

We would also like to suggest that, in the future, when quoting information from completed City studies it would be helpful for our understanding if you could please refer to the studies' formal titles, rather than by the consultant's name.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*
<image001.jpg>
www.hamilton.ca/canada150

From: [redacted]
Sent: October-02-17 8:36 AM
To: [redacted]
Cc: [redacted]; Fazio, Margaret; [redacted]
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

Good morning,

In an effort to find a solution to August 1st flooding, I reviewed related items for the Barton and Fifty PIC provided on the City website.

The *(attached)* photo was taken on September 24th of the north-facing outlet of the 6.1 crossing under Arvin Avenue, in accordance with the map provided at the September 21st Barton and Fifty PIC.
There is green standing water and growth almost to the top of the concrete box at the left.
There is a very large semi-submerged metal ring resembling a distorted pipe which has collected crushed stone and dirt.

Have Environmental Assessment studies for SCUBE, Barton and Fifty, etc., by Philips, Dillon, Aquafor and Amec Foster Wheeler (2017) been completed with this crossing in this condition?

The *(attached)* excerpt of preliminary flow is from Dillon's Hydraulic Assessment of Watercourses 5.0 & 6.0 dated January 2011 which supports their draft Class EA Study of same published November 2007. There's no data entered for the 6.1 crossing at Arvin Ave. While a detailed description of the culvert is provided, no photos or flow data for the culvert at Arvin are provided.

I'm unable to locate the Arvin Avenue Stormwater Management Treatment Facility referred to on page 17 *(attached)* in Philips 2003 EA study west of WC 7.0. (form? size? service area?)

Dillon's draft EA Study of November 2007 reports that the recommended MDP 6.1 and 6.3 diversions were not implemented *(attached)*. In contrast, Philips EA study of 2003 reports "completed" diversion information in Table 4 stating that 6.1 and 6.3 were diverted to 6.2 as a result of Ministry of Transportation QEW works *(attached)*.

There are various mappings used at PICs for various plans that don't match each other or reality, some of which are as follows:

- **6.0** was diverted to 5.0 at SSR, east of Jones Road at the Flow Monitoring Location

- **6.1** south of Barton was confirmed to us as a ditch per blueprints and inspection letter from the City and HCA, respectively. We have been waiting since May for an updated plan to reflect this correction.

- **6.2** appears, disappears, then reappears in EA studies and plans.

A.J. Clarke's Hydrologic and Hydraulic Analysis for Bridgeport Watercourses (2005, 2006) supports the Bridgeport commercial and residential subdivision within the Trillium Neighbourhood Secondary Plan area. Specifically, *"Construct three new culverts downstream of the QEW on Watercourse 6.2" (Dillon 2007, page 4).* It is reported that the Bridgeport work was approved and underway.

I could not find an explanation given by Dillon for removing 6.2 from their final Hydraulic Assessment of January 2011, while it was included in their draft EA 2007 and Clarke's 2005, 2006 Analysis.

- **6.3** in reality runs <u>*under*</u> Barton at the intersection of Glover, but is not mapped as such in the FWSP Block 2 Strategy or Barton and Fifty EA study. Nor does it show how it runs from the culvert at Christina and Willow, west along the north side of Willow, then due north on the east side of Glover, <u>*under*</u> Barton to the lake.

A.J. Clarke (2005,2006): *"...higher flows will be directed by an overflow grate into a storm sewer within the watershed of Watercourse 6.3" (Dillon 2007, page 4).*

I could not find an explanation for Amec's sporadic mapping of 6.3, or how it does not match the FWSP Block 2 Strategy.

The Block 2 Strategy SWM plan shows an obligation for water to be drained across Barton at Glover into WC 6.3.

Notwithstanding the above items, while our property was exceedingly flooded on August 1st, which we had predetermined and reported as such to the City in June and July, we did not experience flooding during the major rain event on May 5th which caused persistent flooding over Barton near Glover.

[redacted]

(Please note: attachments may need to be downloaded separately to be printed clearly)

<image002.jpg>

On Sep 22, 2017, at 1:38 PM, [redacted] wrote:

In addition, much more water than previously is moving west along Barton Street from Glover Road to the culvert with much greater velocity.
The larger east-west flow meets the south-north flow at a right angle at the culvert.
I have video if you would like to see.
[redacted]

Sent from my iPhone

On Sep 22, 2017, at 8:26 AM, [redacted] wrote:

> I also recall there being discussion with the adjacent owner/developer about dealing with on-site drainage changes (due to "tilling" or "farming" activities) to address the concerns about more water moving towards the Simone's east property line than in the past. While the culvert may have caused the water to back up into their property, more water is moving down the mutual property line than previously and that contributed to more water moving into their farm swale than previously (in the past, it was just their own lands draining into the swale – owners copied can correct me if I misunderstood the prior condition).
>
> There's no question the culvert matter was the primary matter reviewed but site grading was the next step and the developer seemed to agree to make some adjustments on site. I'll also offer that in addition to the culvert, the downstream ditch seemed to have filled in and need maintenance. Was that ditch also cleared of silt and sod etc? You and I had a look at that condition as well.
>
> Has there been any significant rainfall events since the work was completed? Perhaps we can answer that ourselves if you can advise when the work was completed? And please confirm if the ditch was cleared/maintained after the culvert was repaired. Thanks! John
>
> [redacted]
> Niagara Planning Group (NPG) Inc.
> [redacted]

From: "[redacted]>
Date: Friday, September 22, 2017 at 8:05 AM
To: "[redacted]
Cc: "[redacted], "Fazio, Margaret" <Margaret.Fazio@hamilton.ca>, [redacted]
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

Good morning Councillor,
At our site meeting we noted a pinched culvert across the street that may have contributed to the flooding, creating a backwater effect on the Simone's property.

We notified our Operations staff and the culvert has since been repaired.
[redacted].

Sent from my Bell Samsung device over Canada's largest network.

-------- Original message --------
From: "[redacted]ca>
Date: 2017-09-21 5:21 PM (GMT-05:00)
To: [redacted] "[redacted], "Fazio, Margaret" <Margaret.Fazio@hamilton.ca>, [redacted]"
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

Hello everyone
Can someone give me an update on the flooding conditions?
Many thanks
[redacted]

Sent from my BlackBerry — the most secure mobile device — via the Bell Network

From: [redacted]
Sent: August 9, 2017 3:28 PM
To: [redacted]

Cc: [redacted] Margaret.
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

See you tomorrow, [redacted]

Sent from my iPhone

On Aug 8, 2017, at 1:49 PM, [redacted]
<Ca[redacted]> wrote:

Hi [redacted],
We'll see you on Thursday at 10am.

[redacted]
Acting Manager - Construction | **City of Hamilton**
Planning & Economic Development Department |
Growth Management Division
[redacted]

From: [redacted]
Sent: August-03-17 9:33 PM
To: [redacted]
Cc: [redacted]
Fazio, Margaret; [redacted]
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

Hi [redacted]
How about Thursday morning, August 10th?

[redacted]

Sent from my iPad Pro

On Aug 2, 2017, at 9:33 PM, [redacted]
[redacted]> wrote:

Hi [redacted],
What is your availability for a site meeting next week. I have the afternoon of next Wednesday and Thursday open.

[redacted]

Sent from my Bell Samsung device over Canada's largest network.

-------- Original message --------
From: "[redacted]
Date: 2017-08-02 9:16 PM (GMT-05:00)
To: [redacted]
Cc: "[redacted]
"Fazio, Margaret" <Margaret.Fazio@hamilton.ca>, "[redacted] ca>, [redacted]
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

I"ve forwarded this on to the adjacent property owner and requested an on site meeting.

I'll reply back immediately as soon as I get a response.

[redacted]

Sent from my Bell Samsung device over Canada's largest network.

-------- Original message --------
From: [redacted]e
Date: 2017-08-02 8:58 PM (GMT-05:00)

To: "[redacted]

Cc: "[redacted]

"Fazio, Margaret"
<Margaret.Fazio@hamilton.ca>,
"[redacted]"
[redacted]

Subject: [redacted] Property Damage Flooding Aug 1, 2017

Hello Carlo,

I'm contacting you regarding property damage we sustained yesterday due to flooding and erosion of our front yard from Culvert 6.1 up to our driveway. (Photos 1, 2). It was not quite a one-hour storm. This is a follow-up to Brenda's email to you on July 26, 2017.

It appears that in an effort to remedy lane closures and flooding on May 5, 2017 (east of [redacted]), the contouring of the lands at [redacted] was changed in June which B[redacted] saw when she visited us on July 25, 2017. This change resulted in re-directing significantly damaging amounts of stormwater from an historical northward flow to a rushing westward flow toward our property yesterday. (Photos 1-5)

While this contouring stopped stormwater from crossing over Barton Street, this water is now redirected to our property resulting in flood damages and erosion to our property.

I've added Margaret's name to this email as we have already met with

her about flooding concerns in June, included these concerns in our comments to the Block 2 Servicing Strategy PIC No. 2, and patiently await her response.

We are deeply concerned that the "Existing Drainage" (Fig-4) does not accurately map the actual historical path of stormwater. Significant amounts of water run north at the main entrance of 269 Glover, (but not south of the entrance?), then around the corner west along Barton to Culvert 6.1. We do not understand why the existing Stormwater Management systems are not indicated on the "Existing Drainage" map, nor the Storm Sewer Plans, Minor (Fig-6) or Major (Fig-7).

Finally, whatever happened to Culvert 6.2? And, how does Block 2 water drain to 6.3 at Glover and Barton?

Sincerely,

[redacted]

<image001.jpg>

<image002.jpg>

<image003.jpg>

<image004.jpg>

<image005.jpg>

Attach: Fig-4,6,7

Sent from my iPad Pro

On Jul 26, 2017, at 9:09 AM,
[redacted]
wrote:

Hello [redacted]lo
Hope all is well
I understand you
visite[redacted]n
with regards to the
grading issue from
next door

Can you please
approach Losani
homes and ask them
to re-grade the area
that send the
drainage to 8[redacted]4
[redacted]?

Historically the
drainage went north
to Barton and is now
going west

Many thanks
[redacted]la

Sent from my
BlackBerry — the
most secure mobile
device — via the Bell
Network

From: [redacted]
Sent: July 25, 2017 9:36 PM
To: [redacted]a
Subject: Photo water [redacted]

Hi[redacted]
Here's a photo of water
this morning, Tuesday,
after big rain on
Thursday.
It's a "wet sponge" where
historically it was dry.

The "Existing Drainage"

map at Block Servicing PIC is incorrect as it does not show the water historically draining down Glover Road, around the corner, under [redacted] driveway, to culvert 6.1. (Attached below.). We included this in our comments to the June 8, 2017 PIC but have not gotten a response.

Thanks for coming to visit. It was nice to see you.
[redacted]

Sent from my iPhone

<block-servicing-strategies-gordon-ave-ea-pic2-block2-display-panels Stormwater ServicingFig-4.pdf>

Lloyd, Trish

From: [redacted]
Sent: January 2, 2018 11:27 AM
To: Mahood, Alissa
Cc: Fazio, Margaret; [redacted]
Subject: Re: Land Use Map B.7.4-1 Dated July 17, 2017 Site or Area Specific Designation

Thank you very much, Alissa.
Happy New Year.
[redacted]

Sent from my iPhone

On Jan 2, 2018, at 10:06 AM, Mahood, Alissa <Alissa.Mahood@hamilton.ca> wrote:

HI [redacted],
The 'H' designation permits urban uses. It was added to the Secondary Plan because when the Secondary Plan was approved the Greenbelt had not been changed to show that these lands were out of the Greenbelt. It permits these lands to be developed. Once the Secondary Plan is in effect a housekeeping amendment will remove the 'H' in accordance with the changes to the Greenbelt Plan (2017).

Alissa

Alissa Mahood, MCIP, RPP
Senior Project Manager, Community Planning & GIS
Planning and Economic Development Department
City of Hamilton, 71 Main St W, 6th Floor, L8P 4Y5
Ph: 905.546.2424 ext. 1250
Fax: 905.540.5611
www.hamilton.ca/communityplanning

From: Fazio, Margaret
Sent: December-05-17 2:49 PM
To: [redacted]e
Cc: [redacted]e; Mahood, Alissa
Subject: RE: Land Use Map B.7.4-1 Dated July 17, 2017 Site or Area Specific Designation

Hello [redacted],

Thank you for your messages of late. We are working on addressing your comments on the project and will be in touch this week/early next week.

Regarding Designation "H" and status with the Secondary Plan I would like to ask Alissa Mahood, via cc of this email, to please address this matter.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*
<image001.jpg>
www.hamilton.ca/canada150

From: [redacted]
Sent: December-05-17 7:57 AM
To: Fazio, Margaret
Cc: [redacted]
Subject: Land Use Map B.7.4-1 Dated July 17, 2017 Site or Area Specific Designation

Hello Margaret,

I've just noticed on the City website that the Urban Hamilton Official Plan, Fruitland-Winona Secondary Plan, Land Use Plan, Map B.7.4-1 was updated on July 17, 2017, from the November 2016 version.

This new map was changed after the last Block 2 Servicing Strategy PIC No2 on June 8, 2017.

We met in Stoney Creek on May 18, 2017, where we discussed your email of April 19, 2017 which was in response to our questions pertaining to PIC No1 on April 4, 2017 and the PIC in December 2016.

In your April 19, 2017 email, you quoted the reason for the "H" on our property was as follows:

"7.4.18.8 Area Specific Policy – Area H For the lands located at:

1. ***i) Glover Road, Barton Street, Concession 1, Dividing Lots 11 and 12 and Highway No. 8;***
2. ***ii) 970 Barton Street;***
3. ***iii) 1361 Barton Street; and,***
4. ***iv) 347 Fifty Road;***

And as shown as Area Specific Policy – Area H on Map B.7.4-1 – Fruitland-Winona Secondary Plan – Land Use Plan, the following policy shall apply:

a) Section and Policies of the Greenbelt Plan, including Section 5.2.1, permit the implementation of the urban land use designations and policies of this Plan, as described in Chapter F- Implementation of Volume 1. "

Our property is Concession 2, Part Lot 11; not in the area mentioned above (?). Concession 1 is north of Barton.

We discussed in May that our property is not located in the above area described. In addition, we received our OMB decision to be out of the Green Belt in 2010. You mentioned that due to

timing, the Greenbelt Plan was not yet updated, you were going to check on this "H" designation and location, and get back to us. I have no record of this follow-up.

The Greenbelt Plan (2017), effective July 1, 2017, shows that our property is "Outside the Greenbelt".

Our land is still under the "Area or Site Specific Policy" designation as of July 17, 2017. I have noticed that there have been changes next door, so this designation was reconsidered in the most recent revisions.

Can you tell us why we still have this area designation? If this is correct, what exactly are the specific policies for our property? What do we need to do to get the red-dotted line removed?

Sincerely,

[redacted]

Lloyd, Trish

From: [redacted]
Sent: June 2, 2017 11:10 AM
To: [redacted]
Cc: Fazio, Margaret
Subject: Aboriginal Consultation Information Response
Attachments: FINAL Notice Block 1 2 3 - Combined PIC June 8 2017 - V 5.pdf

Good Morning,

Please note the attached notice has been circulated to the following First Nations contacts:
Huron-Wendat Nation Council – Ms. [redacted], Secretary, Political Sector
Six Nations Eco-Center – Mr. G[redacted] Lands & Resources
Six Nations of the Grand River Territory – Mr[redacted], Director of Lands & Resources
Haudenosaunee Chiefs Council – [redacted], Executive Director
Mississaugas of New Credit First Nations – Mr. [redacted], Director, Department of Consolation and Accommodation
Mississaugaus of New Credit First Nation – [redacted], Manager, Department of Consultation and Accommodation

Kind Regards,

[redacted]
Growth Management Division
Planning and Economic Development, City of Hamilton
6-71 Main Street West, Hamilton, ON L8P 4Y5
T: 905-546-2424 ext. 4468

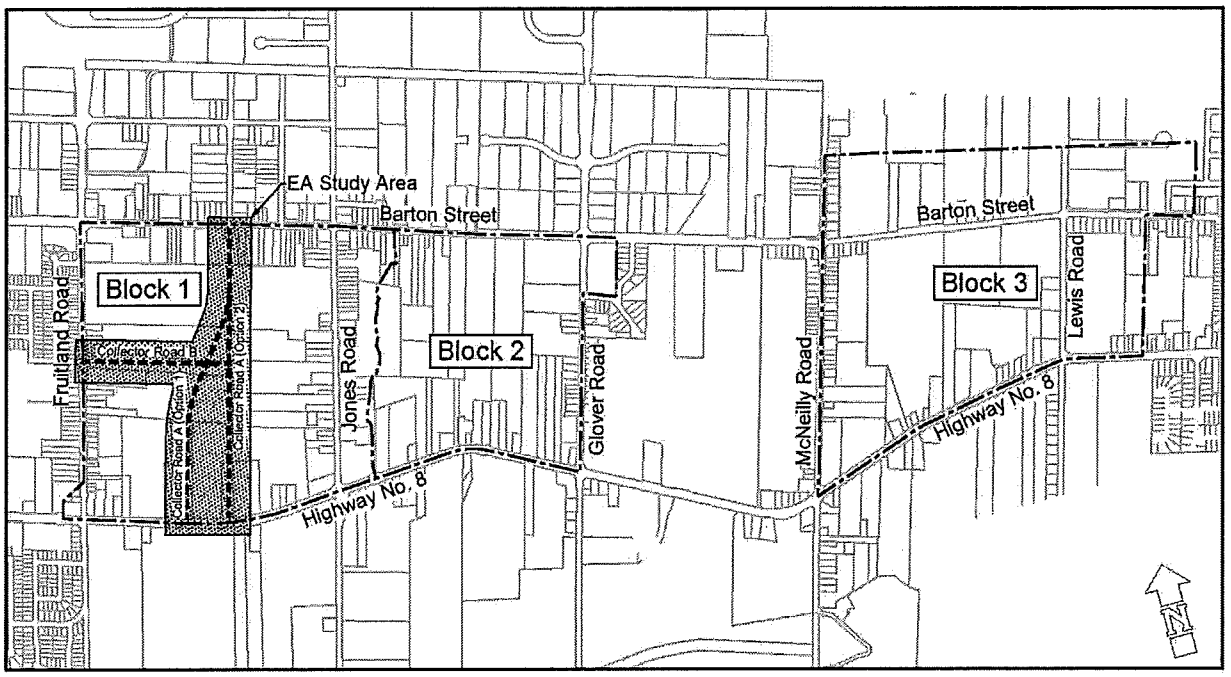
Hamilton

Notice of Joint Public Information Centre (PIC)
Block Servicing Strategy Block 1 and 2 (No.2) and Block Servicing Strategy Block 3 (No. 1)

THE STUDIES

The City of Hamilton and various land owners are proceeding with the Block Servicing Strategies for Block 1, 2 and 3 which are within the areas outlined by the Fruitland-Winona Secondary Plan*. The Servicing Studies include the following components: layout of stormwater ponds, water and wastewater services and local road networks, within the updated natural heritage constraints. Block 2 Servicing Strategy is being conducted by the City of Hamilton, and Blocks 1 and 3 are being conducted by land owners. PIC 1 for Block 1 and Block 2 was held on April 4th, 2017.

STUDIES' MAP



THE PROCESS

The Block Servicing Strategies are being carried out in accordance with the requirements of a Schedule C project as outlined in the Municipal Engineers Association Municipal Class Environmental Assessment (EA) document (2000, as amended in 2007, 2011 & 2015). This is an approved process under the Ontario Environmental Assessment Act.

While the Block Servicing Strategies follow the Class EA public consultation process; this process does not include a public appeal option.

PUBLIC INFORMATION CENTRE (PIC) No. 2 for Blocks 1, 2 Servicing Strategies and PIC No. 1 for Block 3.

Public consultation is an important part of the Block Servicing Strategies. This PIC will provide an opportunity for the public to review the Block Servicing DRAFT Concept Plans.

Date: Thursday, June 8, 2017
Time: 3:30PM to 5PM and 6PM to 7:30PM (Open House Format)
Location: Stoney Creek Municipal Centre, 777 Highway 8, Stoney Creek – Main Level

If you require special accommodations to attend this PIC, please contact the City's Project Manager by **June 2, 2017**. If you are unable to attend this PIC, information will be available on the city's website at: *Hamilton.ca/blockservicingstrategies*

PUBLIC COMMENTS INVITED

Please provide any comments or questions to the appropriate study contacts **by June 22, 2017**.

Amec Foster Wheeler (Block 1) Angelo Cutaia, P.Eng. Consultant Project Manager 3215 North Service Road, Burlington, ON L7N 3G2 **Tel:** 905.335.2353 **Fax:** 905.335.1414 **Email:** *Angelo.Cutaia@amecfw.com*
City of Hamilton (Block 2) Margaret Fazio, B.Sc., EP, MCIP, RPP Senior Project Manager City of Hamilton 71 Main Street West, 6th Floor, Hamilton, ON L8P 4Y5 **Tel:** 905.546.2424 Ext.2218 **Fax:** 905.540.5611 **Email:** *iplanning@hamilton.ca*
Urbantech West (Block 3) Rob Merwin, P.Eng. Urbantech® West, A Division of Leighton-Zec West Ltd. 2030 Bristol Circle, Suite 201 Oakville,. ON L6H 0H2 **TEL**: 905-829-8818 Ext.102 **Mob:**416.997.0101 **FAX:** 905.829.4804 **Email**:*rmerwin@urbantech.com*

Information will be collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments will become part of the public record.

This notice published in Stoney Creek News on **May 25, 2017 and June 1, 2017**, and on the City of Hamilton Twitter account.

*(please see studies map)

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I10

Public Information Centre #2

Notice of Joint Public Information Centre #2

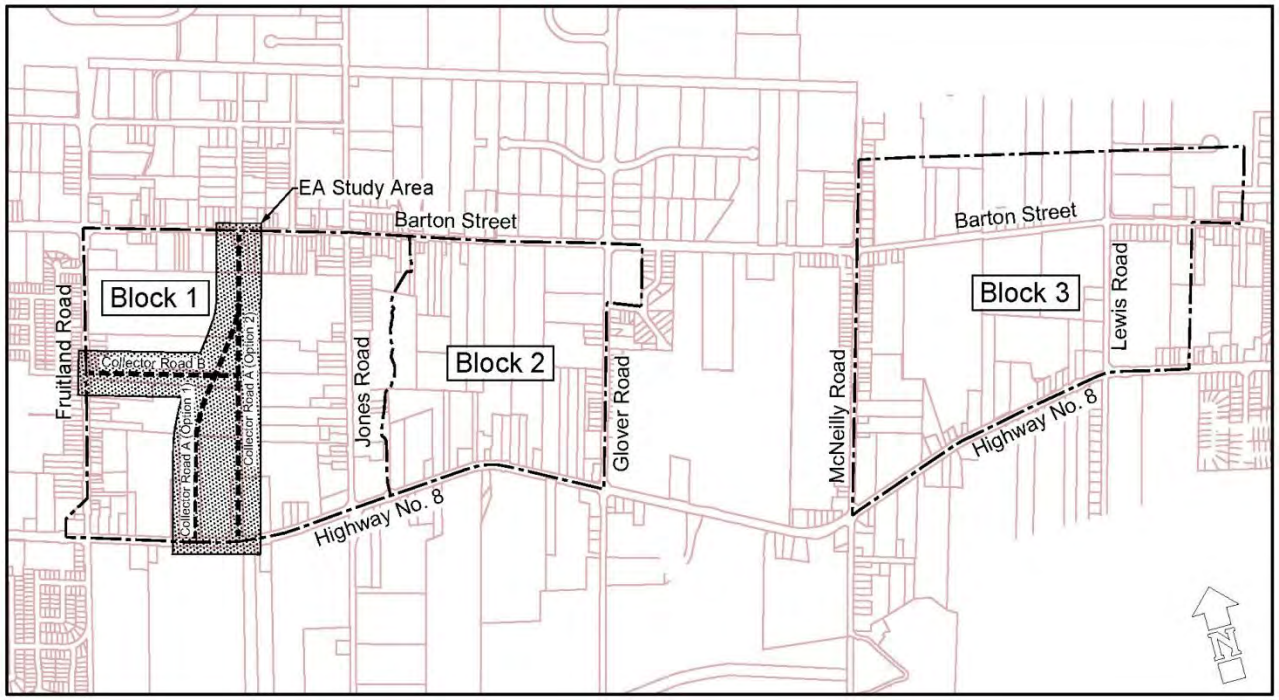
June 2017

Notice of Joint Public Information Centre (PIC)
Block Servicing Strategy Block 1 and 2 (No.2) and Block Servicing Strategy Block 3 (No. 1)

THE STUDIES

The City of Hamilton and various land owners are proceeding with the Block Servicing Strategies for Block 1, 2 and 3 which are within the areas outlined by the Fruitland-Winona Secondary Plan*. The Servicing Studies include the following components: layout of stormwater ponds, water and wastewater services and local road networks, within the updated natural heritage constraints. Block 2 Servicing Strategy is being conducted by the City of Hamilton, and Blocks 1 and 3 are being conducted by land owners. PIC 1 for Block 1 and Block 2 was held on April 4th, 2017.

STUDIES' MAP



THE PROCESS

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While the Block Servicing Strategies follow the Class EA public consultation process; this process does not include a public appeal option.

PUBLIC INFORMATION CENTRE (PIC) No. 2 for Blocks 1, 2 Servicing Strategies and PIC No. 1 for Block 3.

Public consultation is an important part of the Block Servicing Strategies. This PIC will provide an opportunity for the public to review the Block Servicing DRAFT Concept Plans.

Date: Thursday, June 8, 2017
Time: 3:30PM to 5PM and 6PM to 7:30PM (Open House Format)
Location: Stoney Creek Municipal Centre, 777 Highway 8, Stoney Creek – Main Level

If you require special accommodations to attend this PIC, please contact the City's Project Manager by **June 2, 2017**. If you are unable to attend this PIC, information will be available on the city's website at: *Hamilton.ca/blockservicingstrategies*

PUBLIC COMMENTS INVITED

Please provide any comments or questions to the appropriate study contacts **by June 22, 2017**.

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Urbantech West (Block 3) Rob Merwin, P.Eng. Urbantech® West, A Division of Leighton-Zec West Ltd. 2030 Bristol Circle, Suite 201 Oakville,. ON L6H 0H2 **TEL**: 905-829-8818 Ext.102 **Mob:**416.997.0101 **FAX:** 905.829.4804 **Email**:*rmerwin@urbantech.com*

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*****(please see studies map)

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I11

Public Information Centre #2

Sign-in Sheet

June 2017

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I12

Public Information Centre #2

Comment Sheet

June 2017

Thursday, June 8, 2017

Block Servicing Strategies 1 and 2 PIC No. 2, and Block 3 Servicing Strategy PIC No. 1
Comment Sheet

Please take a moment to provide us with input regarding the three above mentioned projects. This questionnaire is your opportunity to provide your comments on all three. ***Given that your views are important to us, please kindly complete this questionnaire (please print) and deposit it in the "Comment Sheets" box provided or by mail, email/scan or fax to the address provided on the fourth page. Thank you.***

1. My relation to this Project is: (Please check all that apply)

[ ] resident within the project limit

[ ] land or business owner within the project limit

[ ] user of roads or lands within the study areas but not within project limit

[ ] member of an interest group (Please specify) _____

[ ] member of the general public not within the project limit

[ ] other (Please specify) _____

2. My interest is: (Please check all that apply?

[ ] property/land impacts

[ ] stormwater management

[ ] pedestrian / bicycle safety

[ ] traffic volume

[ ] traffic signals

[ ] recreational

[ ] natural environment and creeks

[ ] speed limits

[ ] general interest

[ ] other:_____

3. Please provide your comments as they relate to the Block 1 Concept Plans presented here today.

_____

_____

_____

Personal information collected at public meetings or submitted in writing is collected under the authority of the *Municipal Act, 2001*, and will be used by members of the City of Hamilton. The written submissions including names and contact information and the report of the public meeting will be used for the purposes of assessing number of attendees, areas of interest, and contact information.

4. Please provide your comments as they relate to the Block 2 details provided here today.

5. Please provide your comments as they relate to the Block 3 details provided here today.

6. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [ ] Notice in the mail [ ] Other: _____

7. Please indicate your satisfaction with the following:

	Satisfied (Y/N)	If not satisfied, please specify your preference below
Location of Meeting		
Time of Meeting		
Day of Week		

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Accessibility of the Location		

8. On a scale of 1 to 5, where "1" is "very" and "5" is "not at all", please rate the following by circling the appropriate number:

a) How informative were the display materials? (please circle)

Very		Somewhat		Not at all
1	**2**	**3**	**4**	**5**

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very		Somewhat		Not at all
1	**2**	**3**	**4**	**5**

9. Were all your questions answered satisfactorily?

[ ] Yes [ ] No [ ] If No, can someone contact you? _____

10. Please provide any additional comments.

_____

_____

_____

_____

11. Do you require a written response to your comments?

[ ] Yes [ ] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments (please print clearly):

Name:	**Telephone:**

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Address:	
City/Province/Postal Code:	**Email:**

As noted, please mail, scan/email, or fax your completed questionnaire by June 22, 2017 to:

Amec Foster Wheeler (Block 1) **Angelo Cutaia, P.Eng.** **Consultant Project Manager** **3215 North Service Road,** **Burlington, ON L7N 3G2** **Tel: 905.335.2353** **Fax: 905.335.1414** **Email: *Angelo.Cutaia@amecfw.com***
City of Hamilton (Block 2) **Margaret Fazio, B.Sc., EP, MCIP, RPP** **Senior Project Manager** **City of Hamilton** **71 Main Street West, 6th Floor,** **Hamilton, ON L8P 4Y5** **Tel: 905.546.2424 Ext.2218** **Fax: 905.540.5611** **Email: *iplanning@hamilton.ca***
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Thank you for your time and participation!

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Hamilton

Thursday, June 8, 2017

Block Servicing Strategies 1 and 2 PIC No. 2, and Block 3 Servicing Strategy PIC No. 1
Comment Sheet

Please take a moment to provide us with input regarding the three above mentioned projects. This questionnaire is your opportunity to provide your comments on all three. ***Given that your views are important to us, please kindly complete this questionnaire (please print) and deposit it in the "Comment Sheets" box provided or by mail, email/scan or fax to the address provided on the fourth page. Thank you.***

1. My relation to this Project is: (Please check all that apply)

[X] resident within the project limit

[ ] land or business owner within the project limit

[ ] user of roads or lands within the study areas but not within project limit

[ ] member of an interest group (Please specify) _____

[ ] member of the general public not within the project limit

[ ] other (Please specify) _____

2. My interest is: (Please check all that apply?

[ ] property/land impacts

[ ] stormwater management

[ ] pedestrian / bicycle safety

[ ] traffic volume

[X] traffic signals

[ ] recreational

[ ] natural environment and creeks

[ ] speed limits

[ ] general interest

[ ] other:_____

3. Please provide your comments as they relate to the Block 1 Concept Plans presented here today. On June 5/17 - at 6^{00}pm (approx). Truck did not stop at stop signs on Barton + McNeilly Corners. I was walking my 160 lb. dog + he + I were already in the intersection walking north. we were almost to the middle line + truck doing about 70 km travelling east on Barton missed us by approx 2 feet. Too often traffic do not stop or barely slow down. + they ignore Stop signs. This type of thing happens at least 2x a week

over

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Please be aware that I do not relish being in hospital with serious injuries due to traffic violators. We need a traffic light at this intersection. There are too many kids/animals/families that are in this area to cross the road.

4. Please provide your comments as they relate to the Block 2 details provided here today.

5. Please provide your comments as they relate to the Block 3 details provided here today.

6. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [ ] Notice in the mail [ ] Other: _____

7. Please indicate your satisfaction with the following:

	Satisfied (Y/N)	If not satisfied, please specify your preference below
Location of Meeting		
Time of Meeting		
Day of Week		

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Accessibility of the Location

8. On a scale of 1 to 5, where "1" is "very" and "5" is "not at all", please rate the following by circling the appropriate number:

a) How informative were the display materials? (please circle)

Very		Somewhat		Not at all
1	**2**	**3**	**4**	**5**

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very		Somewhat		Not at all
1	**2**	**3**	**4**	**5**

9. Were all your questions answered satisfactorily?

[ ] Yes [ ] No [ ] If No, can someone contact you? _____

10. Please provide any additional comments.

_____

_____

_____

_____

11. Do you require a written response to your comments?

[✓] Yes [ ] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments (please print clearly):

[redacted]	**Telephone:**

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Address:	
City/Province/Postal Code:	Email:

As noted, please mail, scan/email, or fax your completed questionnaire by June 22, 2017 to:

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City of Hamilton (Block 2) **Margaret Fazio, B.Sc., EP, MCIP, RPP** **Senior Project Manager** **City of Hamilton** **71 Main Street West, 6th Floor,** **Hamilton, ON L8P 4Y5** **Tel: 905.546.2424 Ext.2218** **Fax: 905.540.5611** **Email: *iplanning@hamilton.ca***
Urbantech West (Block 3) **Rob Merwin, P.Eng.** **Urbantech® West,** **A Division of Leighton-Zec West Ltd.** **2030 Bristol Circle, Suite 201** **Oakville,. ON L6H 0H2** **TEL: 905-829-8818 Ext.102** **Mob:416.997.0101 FAX: 905.829.4804** **Email:*rmerwin@urbantech.com***

Thank you for your time and participation!

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Thursday, June 8, 2017

Block Servicing Strategies 1 and 2 PIC No. 2, and Block 3 Servicing Strategy PIC No. 1
Comment Sheet

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1. My relation to this Project is: (Please check all that apply)

[✓] resident within the project limit

[ ] land or business owner within the project limit

[ ] user of roads or lands within the study areas but not within project limit

[ ] member of an interest group (Please specify) _____

[ ] member of the general public not within the project limit

[ ] other (Please specify) _____

2. My interest is: (Please check all that apply?

[✓] property/land impacts

[ ] stormwater management

[ ] pedestrian / bicycle safety

[✓] traffic volume

[ ] traffic signals

[ ] other: _____

[ ] recreational

[ ] natural environment and creeks

[ ] speed limits

[ ] general interest

3. Please provide your comments as they relate to the Block 1 Concept Plans presented here today.

_____

_____

_____

_____

_____

4. Please provide your comments as they relate to the Block 2 details provided here today.

_____

_____

_____

_____

5. Please provide your comments as they relate to the Block 3 details provided here today.

I am concerned about the amount of housing coming. the properties are so small kids play in front yard and on Road in more danger.

6. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [✓] Notice in the mail [ ] Other: _____

7. Please indicate your satisfaction with the following:

	Satisfied (Y/N)	If not satisfied, please specify your preference below
Location of Meeting	Yes	
Time of Meeting	Yes	
Day of Week	Yes	
Accessibility of the Location	Yes	

8. On a scale of 1 to 5, where "1" is "very" and "5" is "not at all", please rate the following by circling the appropriate number:

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Very 1 2 Somewhat 3 4 Not at all 5

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very 1 2 Somewhat 3 4 Not at all 5

9. Were all your questions answered satisfactorily?

[✓] Yes [ ] No [ ] If No, can someone contact you? _____

10. Please provide any additional comments.

I think the city need to consider demanding larger lots a little breathing space is good for all.

11. Do you require a written response to your comments?

[ ] Yes [ ] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments **(please print clearly):**

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2. My interest is: (Please check all that apply?

[✓] property/land impacts

[ ] stormwater management

[ ] pedestrian / bicycle safety

[✓] traffic volume

[✓] traffic signals

[ ] other:_____

[ ] recreational

[ ] natural environment and creeks

[✓] speed limits

[✓] general interest

3. Please provide your comments as they relate to the Block 1 Concept Plans presented here today.

4. Please provide your comments as they relate to the Block 2 details provided here today.

5. Please provide your comments as they relate to the Block 3 details provided here today.

WASTE Sewage - ? When

6. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [✓] Notice in the mail [ ] Other: _____

7. Please indicate your satisfaction with the following:

	Satisfied (Y/N)	If not satisfied, please specify your preference below
Location of Meeting	Y	
Time of Meeting	Y	
Day of Week	Y	
Accessibility of the Location	Y	

8. On a scale of 1 to 5, where "1" is "very" and "5" is "not at all", please rate the following by circling the appropriate number:

a) How informative were the display materials? (please circle)

Very 1 2 Somewhat 3 4 Not at all 5

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very 1 2 Somewhat 3 4 Not at all 5

9. Were all your questions answered satisfactorily?

[✓] Yes [ ] No [ ] If No, can someone contact you? _____

10. Please provide any additional comments.

GRADING - will new prop. be higher?

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11. Do you require a written response to your comments?

[ ] Yes [✓] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments **(please print clearly):**

Name:	Telephone:
[redacted]	

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[X] property/land impacts

[X] stormwater management

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[ ] other:_____

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[ ] speed limits

[ ] general interest

3. Please provide your comments as they relate to the Block 1 Concept Plans presented here today.

4. Please provide your comments as they relate to the Block 2 details provided here today.

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6. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [X] Notice in the mail [ ] Other: _____

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Location of Meeting		
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Accessibility of the Location		

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Very		Somewhat		Not at all
1	2	3	4	5

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very		Somewhat		Not at all
1	2	3	4	5

9. Were all your questions answered satisfactorily?

[ ] Yes [ ] No [ ] If No, can someone contact you? _____

10. Please provide any additional comments.

11. **Do you require a written response to your comments?**

[ ] Yes [ ] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments **(please print clearly):**

Name:	**Telephone:**
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As noted, please mail, scan/email, or fax your completed questionnaire by June 22, 2017 to:

Amec Foster Wheeler (Block 1) **Angelo Cutaia, P.Eng.** **Consultant Project Manager** **3215 North Service Road,** **Burlington, ON L7N 3G2** **Tel: 905.335.2353** **Fax: 905.335.1414** **Email: *Angelo.Cutaia@amecfw.com***
City of Hamilton (Block 2) **Margaret Fazio, B.Sc., EP, MCIP, RPP** **Senior Project Manager** **City of Hamilton** **71 Main Street West, 6th Floor,** **Hamilton, ON L8P 4Y5** **Tel: 905.546.2424 Ext.2218** **Fax: 905.540.5611** **Email: *iplanning@hamilton.ca***
Urbantech West (Block 3) **Rob Merwin, P.Eng.** **Urbantech® West,** **A Division of Leighton-Zec West Ltd.** **2030 Bristol Circle, Suite 201** **Oakville,. ON L6H 0H2** **TEL: 905-829-8818 Ext.102** **Mob:416.997.0101 FAX: 905.829.4804** **Email:*rmerwin@urbantech.com***

Thank you for your time and participation!

Personal information collected at public meetings or submitted in writing is collected under the authority of the *Municipal Act, 2001*, and will be used by members of the City of Hamilton. The written submissions including names and contact information and the report of the public meeting will be used for the purposes of assessing number of attendees, areas of interest, and contact information.

Thursday, June 8, 2017

Block Servicing Strategies 1 and 2 PIC No. 2, and Block 3 Servicing Strategy PIC No. 1
Comment Sheet

Please take a moment to provide us with input regarding the three above mentioned projects. This questionnaire is your opportunity to provide your comments on all three. ***Given that your views are important to us, please kindly complete this questionnaire (please print) and deposit it in the "Comment Sheets" box provided or by mail, email/scan or fax to the address provided on the fourth page. Thank you.***

1. My relation to this Project is: (Please check all that apply)

[✓] resident within the project limit

[✓] land or business owner within the project limit

[✓] user of roads or lands within the study areas but not within project limit

[ ] member of an interest group (Please specify) _____

[ ] member of the general public not within the project limit

[ ] other (Please specify) _____

2. My interest is: (Please check all that apply?

[✓] property/land impacts

[✓] stormwater management

[ ] pedestrian / bicycle safety

[✓] traffic volume

[✓] traffic signals

[ ] other:_____

[ ] recreational

[✓] natural environment and creeks

[✓] speed limits

[✓] general interest

3. Please provide your comments as they relate to the Block 1 Concept Plans presented here today.

4. Please provide your comments as they relate to the Block 2 details provided here today.

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5. Please provide your comments as they relate to the Block 3 details provided here today.

CONCERN IS CONTINUAL FLOODING CONDITIONS.

6. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [✓] Notice in the mail [ ] Other: _____

7. Please indicate your satisfaction with the following:

	Satisfied (Y/N)	If not satisfied, please specify your preference below
Location of Meeting	Y	
Time of Meeting	Y	
Day of Week	Y	
Accessibility of the Location	Y	

8. On a scale of 1 to 5, where "1" is "very" and "5" is "not at all", please rate the following by circling the appropriate number:

a) How informative were the display materials? (please circle)

Very		Somewhat		Not at all
1	2	3	4	5

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very		Somewhat		Not at all
1	2	3	4	5

9. Were all your questions answered satisfactorily?

[✓] Yes [ ] No [ ] If No, can someone contact you? _____

10. Please provide any additional comments.

11. Do you require a written response to your comments?

[ ] Yes [✓] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments **(please print clearly):**

Name:	**Telephone:**
Address:	
City/Province/Postal Code:	**Email:**

As noted, please mail, scan/email, or fax your completed questionnaire by June 22, 2017 to:

Amec Foster Wheeler (Block 1) **Angelo Cutaia, P.Eng.** **Consultant Project Manager** **3215 North Service Road,** **Burlington, ON L7N 3G2** **Tel: 905.335.2353** **Fax: 905.335.1414** **Email: *Angelo.Cutaia@amecfw.com***
City of Hamilton (Block 2) **Margaret Fazio, B.Sc., EP, MCIP, RPP** **Senior Project Manager** **City of Hamilton** **71 Main Street West, 6th Floor,** **Hamilton, ON L8P 4Y5** **Tel: 905.546.2424 Ext.2218** **Fax: 905.540.5611** **Email: *iplanning@hamilton.ca***
Urbantech West (Block 3) **Rob Merwin, P.Eng.** **Urbantech® West,** **A Division of Leighton-Zec West Ltd.** **2030 Bristol Circle, Suite 201** **Oakville,. ON L6H 0H2** **TEL: 905-829-8818 Ext.102** **Mob:416.997.0101 FAX: 905.829.4804** **Email:*rmerwin@urbantech.com***

Thank you for your time and participation!

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Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I13

Public Information Centre #2

Public Consultation Display

June 2017

WELCOME

Block 2 Servicing Strategy for the Fruitland-Winona Secondary Plan Lands

PIC No. 2

Your comments are encouraged and appreciated, as this will provide us an opportunity to address project issues and concerns.

Hamilton

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Aquafor Beech Limited

Objectives of the Public Meeting

- Introduce the Block 2 development concept plan
- Provide further detail of the proposed water, sanitary, and stormwater servicing plans
- Provide an opportunity for landowners and the public to comment on the concept plan, and to discuss questions and issues with staff

Secondary Plan Land Use

Block 2 Servicing Strategy
for the Fruitland Winona Secondary Plan Lands
PIC No.2

Hamilton

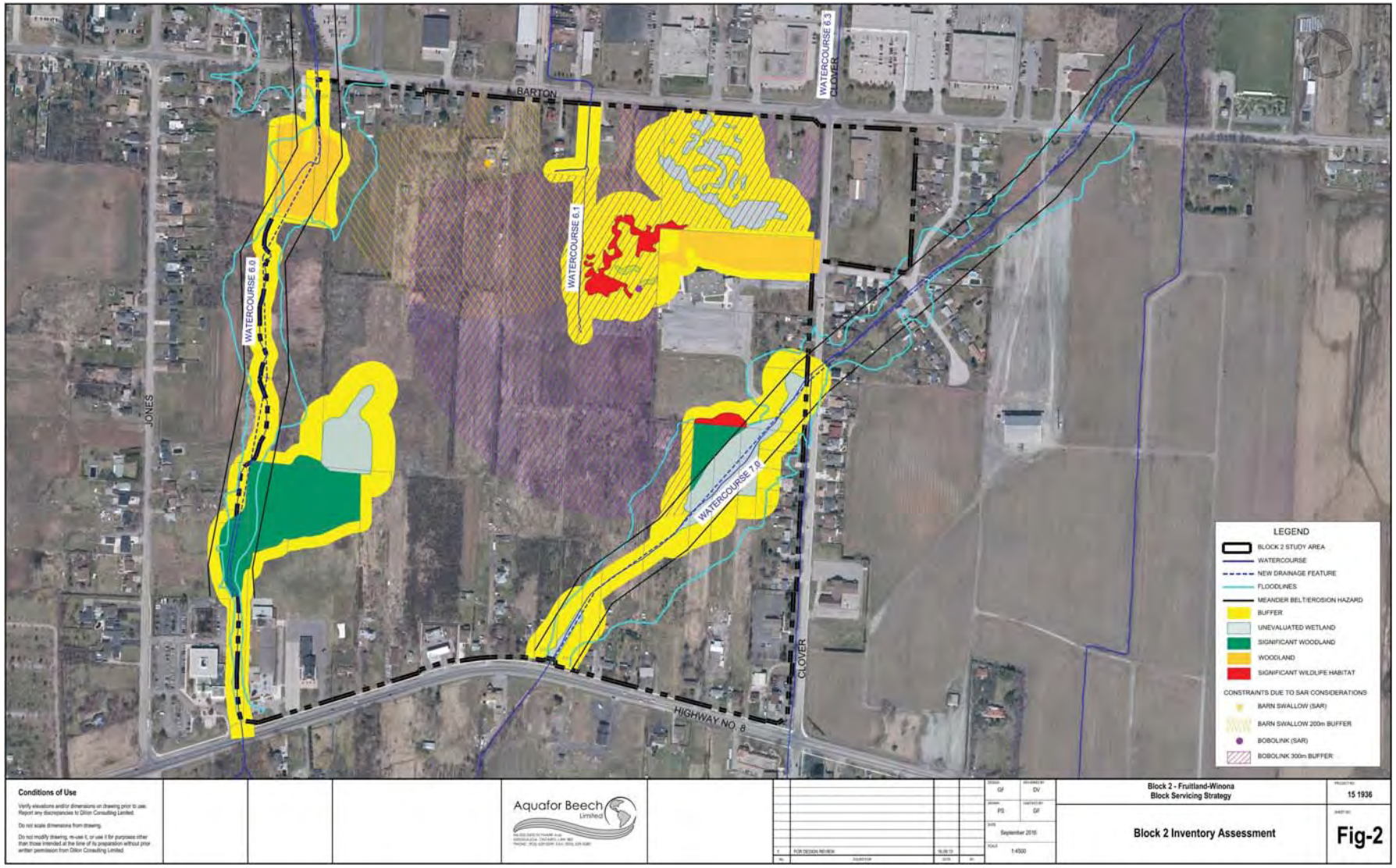
Growth Management Division
Infrastructure Planning Section
www.hamilton.ca

DILLON CONSULTING

Aquafor Beech Limited

Natural Hazards and Environmental Constraints Assessment

Block 2 Servicing Strategy
for the Fruitland Winona Secondary Plan Lands
PIC No.2



Concept Plan

Block 2 Servicing Strategy
for the Fruitland Winona Secondary Plan Lands
PIC No.2

Hamilton

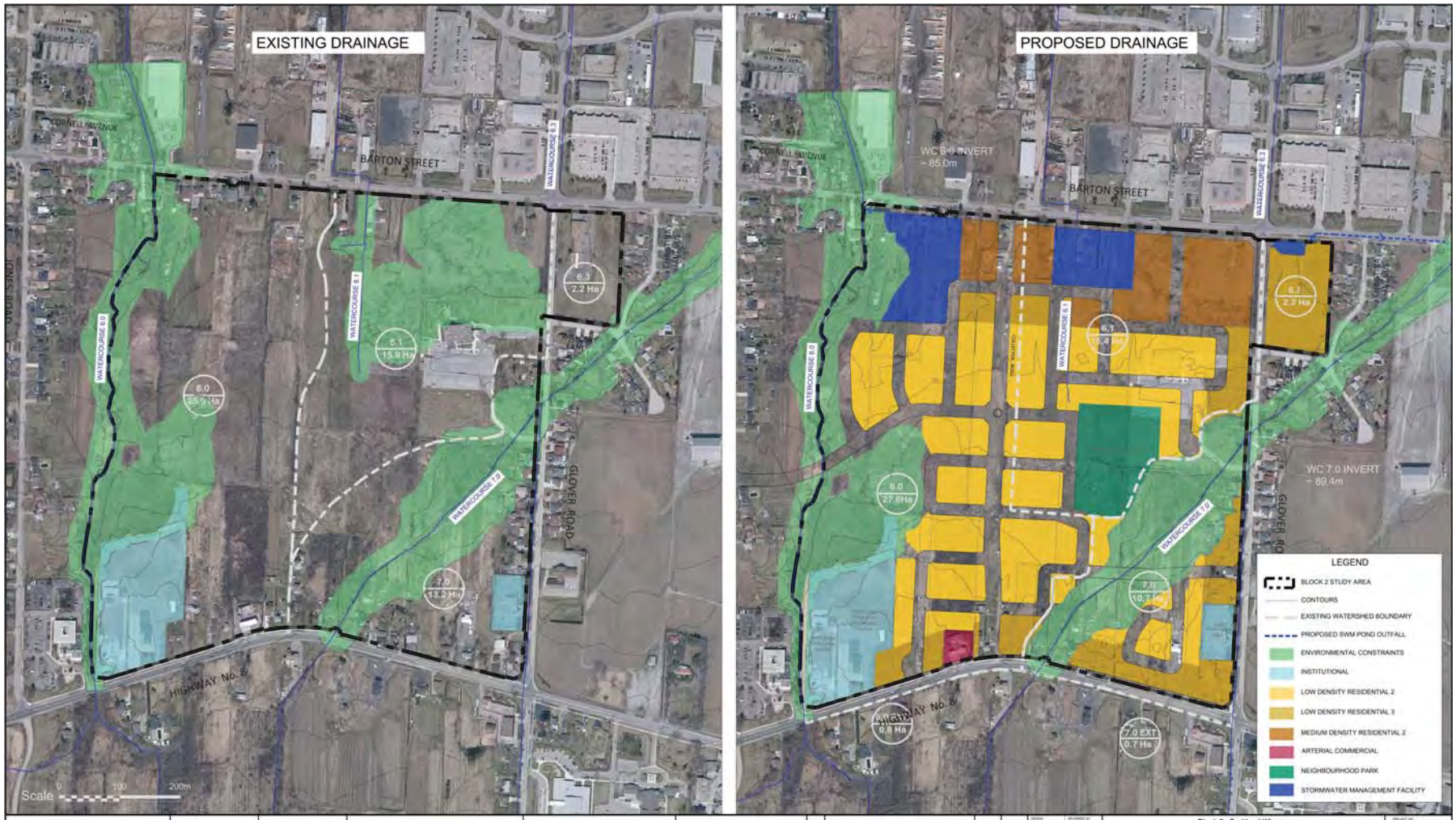
Growth Management Division
Infrastructure Planning Section
www.hamilton.ca

DILLON CONSULTING

Aquafor Beech Limited

Stormwater Servicing (Existing VS Proposed Drainage)

Block 2 Servicing Strategy
for the Fruitland Winona Secondary Plan Lands
PIC No.2



Conditions of Use

Verify elevations and/or dimensions on drawing prior to use. Report any discrepancies to Dillon Consulting Limited.

Do not scale dimensions from drawing.

Do not modify drawing, re-use it, or use it for purposes other than those intended at the time of its preparation without prior written permission from Dillon Consulting Limited.

Aquafor Beech Limited

DILLON CONSULTING

2	CONCEPT PLAN FOR PUBLIC MEETING	14.12.02	
1	FOR DESIGN REVIEW	15.05.13	

DRAWN GF · REVIEWED BY DV · DRAWN PS · REVIEWED BY GF · DATE December 2016 · SCALE 1:6000

Block 2 - Fruitland-Winona
Block Servicing Strategy

Existing and Proposed Drainage

PROJECT NO. 15 1936

SHEET NO. Fig-4

Hamilton

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Infrastructure Planning Section
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Sanitary Sewer Plan

Block 2 Servicing Strategy
for the Fruitland Winona Secondary Plan Lands
PIC No.2

Hamilton

Growth Management Division
Infrastructure Planning Section
www.hamilton.ca

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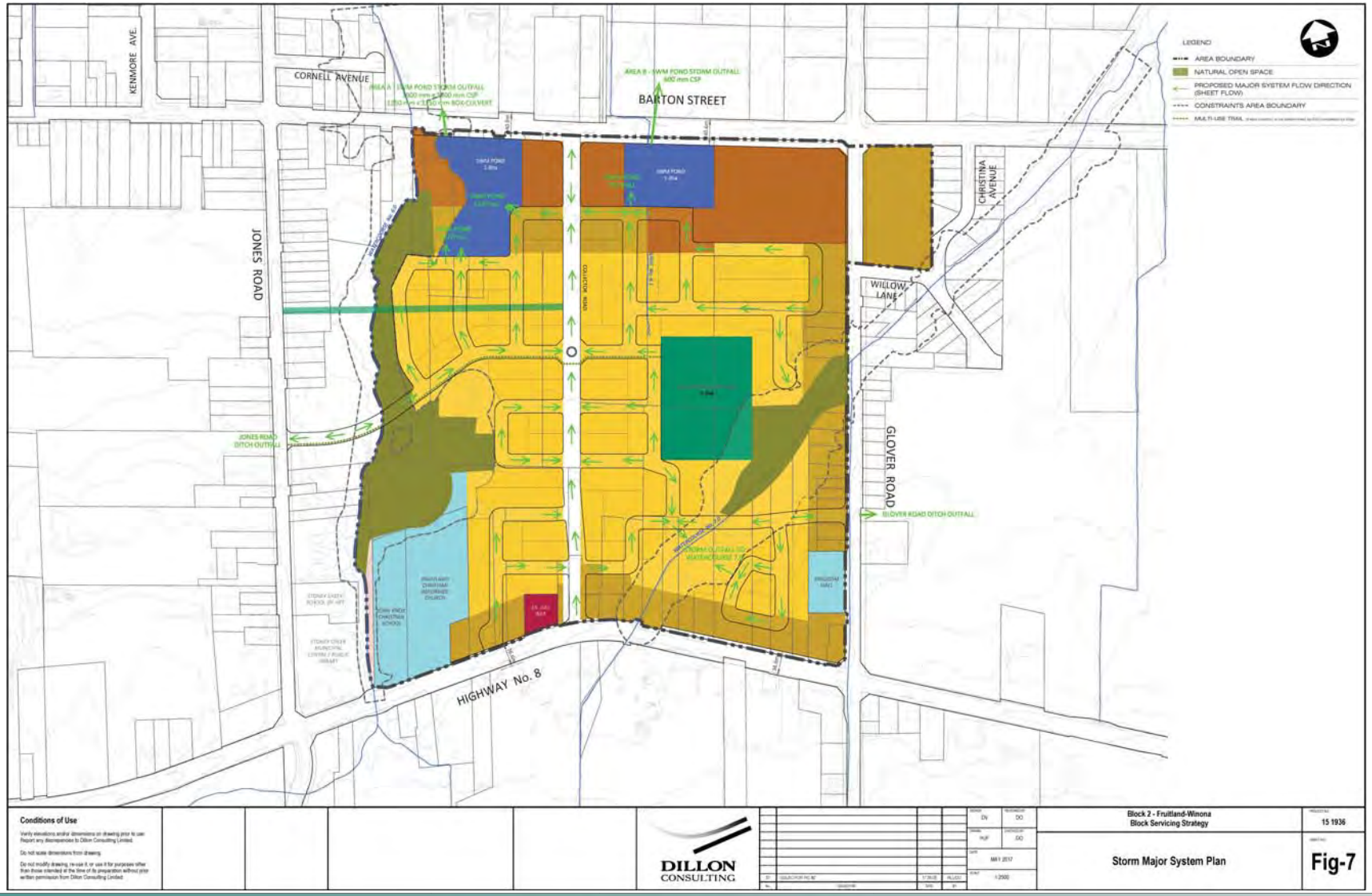
Aquafor Beech Limited

Storm Sewer Plan – Minor System

Block 2 Servicing Strategy
for the Fruitland Winona Secondary Plan Lands
PIC No.2

Storm Sewer Plan – Major System

Block 2 Servicing Strategy
for the Fruitland Winona Secondary Plan Lands
PIC No.2



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Watermain Plan

Block 2 Servicing Strategy
for the Fruitland Winona Secondary Plan Lands
PIC No.2

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Next Steps

- **Refine the Concept Plan based on public feedback, City comments, and Hamilton Conservation Authority requirements**
- **Receive Stakeholder comments by June 22, 2017.**
- **Preparation of a Report which summaries the findings.**
- **Staff to present Report findings to Planning Committee, in an information Report, Fall 2017.**

Thank You.

If you have further questions or comments, please contact the project managers:

Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager
City of Hamilton
71 Main St. W., 6th Floor
Hamilton, Ontario L8R 4Y5
Phone: 905 546-2424 ext. 2218
Fax: 905 540-5611
Email: iplanning@hamilton.ca

Dave Maunder, P. Eng.
Project Manager
Aquafor Beech Ltd.
2600 Skymark Ave, Building 6, Suite 202
Mississauga, Ontario, L4W 5B2
Phone: 905 629-0099 ext. 290
Fax: 905 629-0089
Email: maunder.d@aquaforbeech.com

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I14

Notice of Completion

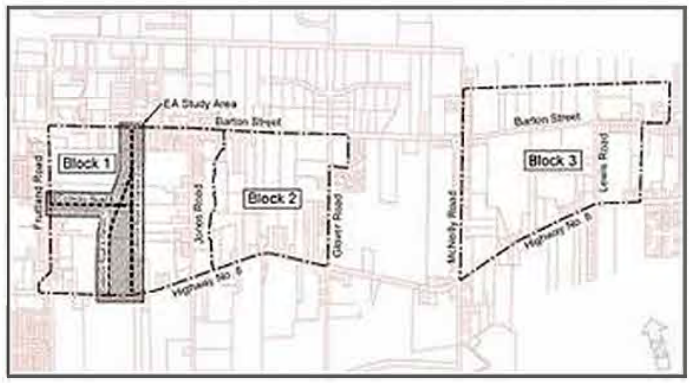
April 2018

Notice of Draft Study Report Completion
Block 2 Servicing Strategy

THE STUDY

The City of Hamilton has completed the Block Servicing Strategy for **Block 2** outlined in the Fruitland-Winona Secondary Plan map below. The Servicing Strategy includes the following components: layout of stormwater ponds, water and wastewater services and local road networks, and updated natural heritage features. Block 2 Servicing Strategy is led by the City of Hamilton, and Blocks 1 and 3 are led by land owners.

STUDIES' MAP



THE PROCESS

The study follows the general requirements of a Schedule C project as outlined in the Municipal Engineers Association Municipal Class Environmental Assessment (EA) document (2000, as amended in 2007, 2011 & 2015), but does not include a public appeal component.

THE FINAL DRAFT BLOCK 2 SERVICING STRATEGY REPORT is now available for REVIEW and COMMENT.

START DATE: Monday, April 9, 2018; END DATE: Monday, April 30, 2018
Hard Copies of the Report will be available for review at the following locations:

- **Stoney Creek Municipal Service Centre - Library, at 777 Highway 8, Stoney Creek**
- **City Hall - 71 Main Street West - City Clerk's Office - 1st Floor**
- **City Hall - 71 Main Street West - 6th Floor Front Desk.**

The Electronic Version of the Report will be available for review via the City's website: Hamilton.ca/blockservicingstrategies

If you require special accommodations to view the REPORT, please contact the City's Project Manager below.

PUBLIC COMMENTS INVITED

Please provide any comments or questions to the below study contact **by April 30, 2018.** Comments received after this date will not be considered or incorporated into the FINAL REPORT.

City of Hamilton
Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager, Infrastructure Planning
City of Hamilton
71 Main Street West, 6th Floor,
Hamilton, ON L8P 4Y5
Tel: 905.546.2424 Ext.2218
Fax: 905.540.5611
Email: iplanning@hamilton.ca

Information will be collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments will become part of the public record.

This notice published in Stoney Creek News on **April 6, 2018** and on the City of Hamilton Twitter account.

Hamilton

Lloyd, Trish

From: [redacted]
Sent: February 8, 2018 7:59 AM
To: Fazio, Margaret; [redacted]
Cc: [redacted]
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017 - Response

Hi Margaret,

Is this meeting about the flooding?

[redacted]

On Dec 11, 2017, at 12:12 PM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:

Hello Mrs. [redacted],

We have some information that we will be in a position to share, and would like to invite you, your family, Hamilton Conservation Authority representative, Councillor [redacted] and some project staff to a meeting in January 2018 to discuss.

I can send out dates of when other attendees and meeting spaces are available, and you could accept or reject based on your family's availability. Please let us know if this would work for you.

Thank you,
Margaret

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*
<image001.jpg>
www.hamilton.ca/canada150

From: [redacted]
Sent: November-28-17 7:49 AM
To: Fazio, Margaret
Cc: Jo[redacted]; Dave Maunder[redacted]); [redacted]; Yong-Lee, Sally; [redacted]pung, Rob [redacted]
Subject: Re: [redacted]roperty Damage Flooding Aug 1, 2017 - Response

Hello Margaret et al,

Thank you for promptly responding to my October 2nd email and for providing direction. Please note that my parents submitted their public comments on October 4th before

having received your email on October 5th and the printed **Barton and Fifty Road EA PIU** panels (27 pages) in the mail on October 6th. We look forward to having our comments published.

The proper names of the reports from the City website which I referenced in my email as having conflicting mappings of watercourses 6.0-6.3, among other points, are listed below. I was able to find the "**SCUBE West Subwatershed Study, Phase 1 and 2 Final Report; May 15, 2013"** (915 pages) online, not the **Stoney Creek Urban Boundary Expansion (SCUBE) Sub-Watershed Studies (East and West - 2012)** version you referenced as the one currently being used for planning and environmental assessment.

As prefaced in my October 2nd email, I started out trying to find a solution to our flooding event on August 1st which you fairly explained would be forthcoming in separate correspondence. We are still awaiting this response. That search led me to further questions about inconsistencies in the related studies I reviewed. In an attempt to understand the most recent information you have provided, especially about environment assessments, I'll try to clarify what I understand.

We did not know that the SCUBE Subwatershed studies were actual *Environmental Assessment studies*. I recently reviewed the *"Public Information Centre Display Panels" from PIC#1 on June 24, 2010* for the **"SCUBE East and West Sub-watershed Studies Phase 1"** on the City website. The online panels for "Municipal Class Environmental Assessments Studies" pertaining to *SCUBE East* and *SCUBE West* simply say *"See Display"*. However, there aren't any display panels which provide information on project status, summary or follow-up for SCUBE East or West environmental assessments.

The **"SCUBE West Subwatershed Study, Phase 1 and 2 Final Report, May 15, 2013"** document does not contain the term *"environmental assessment"* in the title, nor does it identify itself as such in the introduction of the document. It's on page 628, in the *"Public Information Centre Display Panels"* section from PIC#1 on June 24, 2010 that the environmental assessment process is outlined: *"The Study...is intended to satisfy Phases 1 and 2 of the..(Class EA) process"*. So, June 24, 2010 was actually EA Phase 2. If there is follow-up, I could not find any to Phase 1 or Phase 2 between June 2010 and May 2013.

Are we now in the **"SCUBE Subwatershed Study: Phase 3: Implementation; Aquafor Beech Limited; November 28, 2014"** (424 pages) and if so, is this still part of the EA process? It's in this document that the opening letter details revisions *"to reflect the removal of Woodland 6"*. The four "Future Study Requirements" and statements that pertain to the EA process in Phase 3 are as follows:

"Refinement and finalization of hydraulic modelling and floodplain mapping for Watercourses 5.0 and 6.0 north of Barton Street to be completed as part of future Environmental Assessment Studies" Page 25.

"The City of Hamilton will complete a Streetscape Master Plan for Barton Street which will include the design and definition of the Barton Street Pedestrian Promenade. The City of Hamilton should also complete an Environmental Impact Statement (EIS) to:...". Pages 28, 43.

"Drainage improvements within this area are expected to be investigated as part of future Environmental Assessment studies. Future refinement to the hydraulic modelling downstream of Barton Street and associated floodline mapping is anticipated to be undertaken as part of these studies." Page 33.

"Per Section F3.3.1.1 of the Urban Official Plan, the Environmentally Significant Area Impact Evaluation Group (ESAIEG) will review all Environmental Impact Statement reports and advise City of Hamilton staff on the impacts of proposed land use changes within or adjacent to natural areas." Page 44.

The **"SCUBE West Subwatershed Study, Phase 1 and 2 Final Report, Aquafor Beech, May 15, 2013"** (915 pages) relies heavily on the **"City of Hamilton; Watercourse 5 & 6 Class Environmental Assessment Study, Draft Report; Dillon, November 2007"** (62 pages) and the **"Watercourse No. 7-Creek System Improvements; Class Environment Assessment;**

Community of Stoney Creek; City of Hamilton; Philips, September 2003" (25 pages). As I mentioned in my previous email, the recommendations in these reports appear to be based on certain data which seems missing; certain works which were not completed; and certain changes which were implemented, not implemented, or do not appear to be taken into account.

I understand that you are advising us to contact another City department about the existing culvert blockages at the Arvin Ave WC6.1 crossing. Doing so, however, does not address whether these conditions pre-existed completed EA studies. In addition, why is there a lack of data for WC6.1 crossings in the related and completed EA studies that are the foundation for the current **"Municipal Class Environmental Assessment, Phase 3 & 4 Barton Street and Fifty Road Improvements; Amec, Foster, Wheeler, September 21, 2017"** (29 panels), the Block 2 Servicing Strategy and the Fruitland Winona Secondary Plan?

Our previous questions remain including the following:

- WC 6.3 crosses under Barton at Glover: Why is this culvert not mapped in the Block 2 Servicing Strategy? Why is the mapping of WC 6.3 sporadic? Are there studies completed to support it's location?

- Regarding Stormwater Servicing, Block 2 SS page 6: How can stormwater designated as 6.3 (for 2.2ha) be re-directed elsewhere? How is this justified? *"...higher flows will be directed by an overflow grate into a storm sewer within the watershed of Watercourse 6.3" (Dillon 2007, page 4).*

- Why does WC 6.2 appear, disappear, then reappear in various EA studies and plans?

- Why is data missing for the 6.1 water crossing at Arvin Ave in the EA studies?

- When will the WC 6.1 designation on our property be corrected and reinstated as a drainage ditch per our discussion, the blueprints DeFilippis prepared for the City and the inspection letter from the HCA which we provided to you at our meeting on May 18th, 2017?

"Staff will be in a position to release specific information on all Block 2 SS issues when the Draft Study Report has been finalized and approved by the Project Team and then by Council, by the end of 2017." These decisions by the City greatly affect our property. We are deeply concerned that your latest email states that we will not receive any answers until ***after*** study reports are finalised and approved. We are equally concerned about the effects on our property of the way stormwater will be managed and as been managed to date.

"City of Hamilton; Watercourse 5 & 6 Class Environmental Assessment Study, Draft Report; Dillon, November 2007" reports that the recommended MDP 6.1 and 6.3 diversions were not implemented. In contrast, **Class Environment Assessment; Community of Stoney Creek; City of Hamilton; Philips, September 2003** reports *"completed"* diversion information in Table 4 stating that 6.1 and 6.3 were diverted to 6.2 as a result of Ministry of Transportation QEW works. I don't understand why we have to wait for more reports to be finalised to receive an answer about these finalised reports from 2003 and 2007?

Is it not possible that if all the grants, studies and EA recommendations over the last 20 years were applied in earnest, starting with the Master Drainage Plan in 1998 up to SCUBE " unevaluated wetlands", that we would not require a pond on our property? Our property is not the largest or lowest elevation; it is one of several lower elevations in Block 2 including areas north of Barton, where a pond historically existed.

Perhaps these questions on past events can be answered:

- Which OMB appeals to the FWSP are still not addressed?

- Are we now in the **SCUBE Watershed Study Phase 3: Implementation (Nov 28, 2014)**? Is this also an environmental assessment ? Are the recommendations being implemented?

- Have WC 6.2 culvert improvements north of QEW actually been completed? *"Construct three new culverts downstream of the QEW on Watercourse 6.2" (Dillon 2007, page 4).*

- I could not find an explanation for removing watercourse 6.2 in the **"City of Hamilton; Watercourse 5 & 6 Hydraulic Assessment; Dillon, January 2011"** (160 pages) while it was included in the **"City of Hamilton; Watercourse 5 & 6 Class Environmental Assessment Study, Draft Report; Dillon, November 2007"** (62 pages) and **"Hydrologic and Hydraulic Analysis for Bridgeport Watercourses; May 2005, revised January 2006; per Dillon 2007"** (Dillon 2007, page 4). What was the rationale?

- Where is the Arvin Avenue Stormwater Management Treatment Facility located? What form does it take? What area does it service? That's the one referred to being located west of WC 7.0 on page 17 of **"Watercourse No. 7-Creek System Improvements; Class Environment Assessment; Community of Stoney Creek; City of Hamilton; Philips, September 2003** (25 pages).

We are looking for assurances that finalised studies will be completed, reported and implemented accurately, and that plans and changes to plans have a scientific basis.

Upon your suggestion, we look forward to reviewing your responses with our planner and find it more efficient to meet with him once we have some answers.

Sincerely,

On Oct 5, 2017, at 5:03 PM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:

Hello [redacted] et al,

Thank you for your comments below and hard copy comments received from Mr. and Mrs. Simone – post PIU on September 21, 2017.

Our response/comments to your e-mail and hard copy comments and questions, as per our understanding, are as follows:

1. **RE: existing culvert conditions on Arvin Avenue**, we ask that you please call 905-546 – CITY (2489) – the City's Calling Centre, and ask to speak to "*District East Road Operations Group to report poor condition of a cross-road culvert*". They will then record a

service request, and schedule an investigator, who will then look after the issue.

2. **RE: previously asked questions about regulatory status of Watercourse 6.1 -** The project study teams have had the pleasure of meeting with your family and consultant about the disposition of/regulatory status of Watercourse 6.1 during the course of the Block 2 Servicing Strategy, and now as part of the *Introductory* Barton and Fifty Road EA, and have taken all provided information into consideration. The project team continues to be working on the finalization of the Block Servicing Strategy.

    a. **TIMING OF RESPONSE:** Staff will be in a position to release specific information on all Block 2 SS issues when the Draft Study Report has been finalized and approved by the Project Team and then by Council, by the end of 2017. You should also be aware that we cannot fully finalize Block Servicing Strategies until all Ontario Municipal Board (OMB) appeals are addressed/finalized for the Fruitland-Winona Secondary Plan, which may delay the Servicing Studies' completion timeline.

3. **RE: the relatedness of various studies in this area**

    - **<u>The Fruitland-Winona Secondary Plan</u> (Secondary Plan)** and the Block Servicing Strategies and are using stormwater inputs from the latest study conducted in this area - **<u>Stoney Creek Urban Boundary Expansion (SCUBE) Sub-Watershed Studies</u> (East and West - 2012)**, which followed the Municipal Class Environmental Assessment (EA) public consultation process, based on the EA Act.

    - The **Barton and Fifty Road Phases 3 & 4 EA** will incorporate the drainage recommendations provided by the Block Servicing Strategies (and outside of those, the above mentioned SCUBE Sub-Watershed EAs).

    - The **Barton and Fifty Road EA PIU panels** show what exists in the study area today. Since Block Servicing Strategies are not yet completed, their recommendations are not yet incorporated into the EA process. It is noted that this could be explained/shown better going forward in the study process.

    - The **full scope of the Barton and Fifty Road EA** is shown in the PIU panel No. 8 titled "problem and opportunity statement", and can also be commented on, as part of the comment period ending tomorrow, October 6, 2017.

      If you require a live web link, please follow this hyperlink to the web page directly:

https://www.hamilton.ca/city-planning/master-plans-class-eas/barton-street-and-fifty-road-improvements
The PIU panels can be found under the "Public Consultation" tab.

4. **Regarding other flooding questions and others regarding Barton and Fifty Road EA** they will be forthcoming in separate correspondence.

We are not sure if we have understood your comments/questions fully, and would like to take the liberty to encourage you to review our responses with your consultant (John Henricks, included on this e-mail). Please let us know if the information provided above is helpful. If we have not addressed all of your concerns, we ask to please clarify what answers you seek.

We would also like to suggest that, in the future, when quoting information from completed City studies it would be helpful for our understanding if you could please refer to the studies' formal titles, rather than by the consultant's name.

Thank you,

Margaret Fazio, B.Sc., ***EP, MCIP, RPP***
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*
<image001.jpg>
www.hamilton.ca/canada150

From: [redacted]
Sent: October-02-17 8:36 AM
To: John Henricks, RPP
Cc: [redacted]; Fazio, Margaret; [redacted]
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

Good morning,

In an effort to find a solution to August 1st flooding, I reviewed related items for the Barton and Fifty PIC provided on the City website.

The *(attached)* photo was taken on September 24th of the north-facing outlet of the 6.1 crossing under Arvin Avenue, in accordance with the map provided at the September 21st Barton and Fifty PIC.
There is green standing water and growth almost to the top of the concrete box at the left.

There is a very large semi-submerged metal ring resembling a distorted pipe which has collected crushed stone and dirt.

Have Environmental Assessment studies for SCUBE, Barton and Fifty, etc., by Philips, Dillon, Aquafor and Amec Foster Wheeler (2017) been completed with this crossing in this condition?

The *(attached)* excerpt of preliminary flow is from Dillon's Hydraulic Assessment of Watercourses 5.0 & 6.0 dated January 2011 which supports their draft Class EA Study of same published November 2007. There's no data entered for the 6.1 crossing at Arvin Ave. While a detailed description of the culvert is provided, no photos or flow data for the culvert at Arvin are provided.

I'm unable to locate the Arvin Avenue Stormwater Management Treatment Facility referred to on page 17 *(attached)* in Philips 2003 EA study west of WC 7.0. (form? size? service area?)

Dillon's draft EA Study of November 2007 reports that the recommended MDP 6.1 and 6.3 diversions were not implemented *(attached)*. In contrast, Philips EA study of 2003 reports "completed" diversion information in Table 4 stating that 6.1 and 6.3 were diverted to 6.2 as a result of Ministry of Transportation QEW works *(attached)*.

There are various mappings used at PICs for various plans that don't match each other or reality, some of which are as follows:

- **6.0** was diverted to 5.0 at SSR, east of Jones Road at the Flow Monitoring Location

- **6.1** south of Barton was confirmed to us as a ditch per blueprints and inspection letter from the City and HCA, respectively. We have been waiting since May for an updated plan to reflect this correction.

- **6.2** appears, disappears, then reappears in EA studies and plans.

A.J. Clarke's Hydrologic and Hydraulic Analysis for Bridgeport Watercourses (2005, 2006) supports the Bridgeport commercial and residential subdivision within the Trillium Neighbourhood Secondary Plan area. Specifically, *"Construct three new culverts downstream of the QEW on Watercourse 6.2" (Dillon 2007, page 4).* It is reported that the Bridgeport work was approved and underway.

I could not find an explanation given by Dillon for removing 6.2 from their final Hydraulic Assessment of January 2011, while it was included in their draft EA 2007 and Clarke's 2005, 2006 Analysis.

- **6.3** in reality runs <u>*under*</u> Barton at the intersection of Glover, but is not mapped as such in the FWSP Block 2 Strategy or Barton and Fifty EA study. Nor does it show how it runs from the culvert at Christina and

Willow, west along the north side of Willow, then due north on the east side of Glover, *under* Barton to the lake.

A.J. Clarke (2005,2006): *"...higher flows will be directed by an overflow grate into a storm sewer within the watershed of Watercourse 6.3" (Dillon 2007, page 4).*

I could not find an explanation for Amec's sporadic mapping of 6.3, or how it does not match the FWSP Block 2 Strategy.

The Block 2 Strategy SWM plan shows an obligation for water to be drained across Barton at Glover into WC 6.3.

Notwithstanding the above items, while our property was exceedingly flooded on August 1st, which we had predetermined and reported as such to the City in June and July, we did not experience flooding during the major rain event on May 5th which caused persistent flooding over Barton near Glover.

[redacted]

(Please note: attachments may need to be downloaded separately to be printed clearly)

<image002.jpg>

On Sep 22, 2017, at 1:38 PM, [redacted] wrote:

In addition, much more water than previously is moving west along [redacted] to the culvert with much greater velocity.
The larger east-west flow meets the south-north flow at a right angle at the culvert.
I have video if you would like to see.
[redacted]

Sent from my iPhone

On Sep 22, 2017, at 8:26 AM, [redacted] wrote:

> I also recall there being discussion with the adjacent owner/developer about dealing with on-site drainage changes (due to "tilling" or "farming" activities) to address the concerns about more water moving towards the Simone's east property line than in the past.

While the culvert may have caused the water to back up into their property, more water is moving down the mutual property line than previously and that contributed to more water moving into their farm swale than previously (in the past, it was just their own lands draining into the swale – owners copied can correct me if I misunderstood the prior condition).

There's no question the culvert matter was the primary matter reviewed but site grading was the next step and the developer seemed to agree to make some adjustments on site. I'll also offer that in addition to the culvert, the downstream ditch seemed to have filled in and need maintenance. Was that ditch also cleared of silt and sod etc? You and I had a look at that condition as well.

Has there been any significant rainfall events since the work was completed? Perhaps we can answer that ourselves if you can advise when the work was completed? And please confirm if the ditch was cleared/maintained after the culvert was repaired. Thanks! John

[redacted]
Niagara Planning Group (NPG) Inc.
[redacted]

From: "Ammendolia, Carlo" <Carlo.Ammendolia@hamilton.ca>
Date: Friday, September 22, 2017 at 8:05 AM
To: "Johnson, Brenda" <Brenda.Johnson@hamilton.ca>, [redacted]
Cc: "Dinney, Kathy" <Kathy.Dinney@hamilton.ca>, "Demik, Kristen" <Kristen.Demik@hamilton.ca>, "Fazio, Margaret" <Margaret.Fazio@hamilton.ca>, John Henricks [redacted]
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

Good morning Councillor,
At our site meeting we noted a pinched culvert across the street that may have contributed to the flooding, creating a backwater effect on the Simone's property.

We notified our Operations staff and the culvert has since been repaired.
Carlo.

Sent from my Bell Samsung device over Canada's largest network.

-------- Original message --------
From: "Johnson, Brenda" <Brenda.Johnson@hamilton.ca>
Date: 2017-09-21 5:21 PM (GMT-05:00)
To: Maria Simone [redacted]
"Ammendolia, Carlo" <Carlo.Ammendolia@hamilton.ca>
Cc: "Dinney, Kathy" <Kathy.Dinney@hamilton.ca>, "Demik, Kristen" <Kristen.Demik@hamilton.ca>, "Fazio, Margaret" <Margaret.Fazio@hamilton.ca>, "John Henricks, RPP" [redacted],
[redacted]
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

Hello everyone
Can someone give me an update on the flooding conditions?
Many thanks
Brenda

Sent from my BlackBerry — the most secure mobile device — via the Bell Network

From: [redacted]
Sent: August 9, 2017 3:28 PM
To: Carlo.Ammendolia@hamilton.ca
Cc: Brenda.Johnson@hamilton.ca; Kathy.Dinney@hamilton.ca; Kristen.Demik@hamilton.ca; M
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

See you tomorrow, Carlo.

Sent from my iPhone

On Aug 8, 2017, at 1:49 PM, Ammendolia, Carlo <Carlo.Ammendolia@hamilton.ca> wrote:

Hi Maria,
We'll see you on Thursday at 10am.

Carlo Ammendolia
Acting Manager - Construction | **City of Hamilton**
Planning & Economic Development Department | **Growth Management Division**
Phone: 905-546-2424 ext.2155

From: maria simone
[redacted]
Sent: August-03-17 9:33 PM
To: Ammendolia, Carlo
Cc: Johnson, Brenda; Dinney, Kathy; Demik, Kristen; Fazio, Margaret; John Henricks, RPP; Enrico Simone
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

Hi Carlo,
How about Thursday morning, August 10th?

Maria

Sent from my iPad Pro

On Aug 2, 2017, at 9:33 PM, Ammendolia, Carlo <Carlo.Ammendolia@hamilton.ca> wrote:

> Hi [redacted]
> What is your availability for a site meeting next week. I have the afternoon of next Wednesday and Thursday open.

Carlo.

Sent from my Bell Samsung device over Canada's largest network.

-------- Original message --------
From: "Ammendolia, Carlo" <Carlo.Ammendolia@hamilton.ca>
Date: 2017-08-02 9:16 PM (GMT-05:00)
To: [redacted] com>
Cc: "Johnson, Brenda" <Brenda.Johnson@hamilton.ca>, "Dinney, Kathy" <Kathy.Dinney@hamilton.ca>, "Demik, Kristen" <Kristen.Demik@hamilton.ca>, "Fazio, Margaret" <Margaret.Fazio@hamilton.ca>, "John Henricks, RPP" [redacted]
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

I"ve forwarded this on to the adjacent property owner and requested an on site meeting.

I'll reply back immediately as soon as I get a response.

Carlo.

Sent from my Bell Samsung device over Canada's largest network.

-------- Original message --------
From: maria simone
<[redacted]
Date: 2017-08-02 8:58 PM (GMT-05:00)
To: "Ammendolia, Carlo" <Carlo.Ammendolia@hamilton.ca>
Cc: "Johnson, Brenda" <Brenda.Johnson@hamilton.ca>, "Dinney, Kathy" <Kathy.Dinney@hamilton.ca>, "Demik, Kristen" <Kristen.Demik@hamilton.ca>, "Fazio, Margaret" <Margaret.Fazio@hamilton.ca>, "John Henricks, RPP"
[redacted]
En[redacted]
[redacted]
Su[redacted]
Property Damage Flooding Aug 1, 2017

Hello Carlo,

I'm contacting you regarding property damage we sustained yesterday due to flooding and erosion of our front yard from Culvert 6.1 up to our driveway. (Photos 1, 2). It was not quite a one-hour storm. This is a follow-up to Brenda's email to you on July 26, 2017.

It appears that in an effort to remedy lane closures and flooding on May 5, 2017 (east of [redacted] Street), the contouring of the lands at 860 Barton was changed in June which Brenda saw when she visited us on July 25, 2017. This change resulted in re-directing significantly damaging amounts of stormwater from an historical northward flow to a rushing westward flow toward our property yesterday. (Photos 1-5)

While this contouring stopped stormwater from crossing over Barton Street, this water is now redirected to our property resulting in flood damages and erosion to our property.

I've added Margaret's name to this email as

we have already met with her about flooding concerns in June, included these concerns in our comments to the Block 2 Servicing Strategy PIC No. 2, and patiently await her response.

We are deeply concerned that the "Existing Drainage" (Fig-4) does not accurately map the actual historical path of stormwater. Signific ant amounts of water run north at the main entrance of 269 Glover, (but not south of the entrance?), then around the corner west along Barton to Culvert 6.1. We do not understand why the existing Stormwater Management systems are not indicated on the "Existing Drainage" map, nor the Storm Sewer Plans, Minor (Fig-6) or Major (Fig-7).

Finally, whatever happened to Culvert 6.2? And, how does Block 2 water drain to 6.3 at Glover and Barton?

Sincerely,

[redacted]

[redacted]

<image001.jpg>

<image002.jpg>

<image003.jpg>

<image004.jpg>

<image005.jpg>

Attach: Fig-4,6,7

Sent from my iPad Pro

On Jul 26, 2017, at 9:09 AM, Johnson, Brenda <Brenda.Johnson@hamilton.ca> wrote:

> Hello Carlo Hope all is well I understand you visited [redacted] with regards to the grading issue from next door

Can you please approach Losani homes and ask them to re-grade the area that send the drainage to [redacted]?

Historically the drainage went north to Barton and is now going west

Many thanks
Brenda

Sent from my BlackBerry — the

most secure mobile device — via the Bell Network

From: [redacted]
Sent: July 25, 2017 9:36 PM
To: Brenda.Johnson@hamilton.ca
Subject: Photo water [redacted]

Hi Brenda, Here's a photo of water this morning, Tuesday, after big rain on Thursday. It's a "wet sponge" where historically it was dry.

The "Existing Drainage" map at Block Servicing PIC is incorrect as it does not show the water historically draining down Glover Road,

around the corner, under [redacted] drivewa y, to culvert 6.1. (Attach ed below.). We include d this in our comme nts to the June 8, 2017 PIC but have not gotten a respons e.

Thanks for coming to visit. It was nice to see you. [redacted]

Sent from my iPhone

<block-servicing-strategies-gordon-ave-ea-pic2-block2-display-

panels
Storm
water
Servici
ngFig-
4.pdf>

Lloyd, Trish

From: Fazio, Margaret
Sent: April 6, 2018 3:53 PM
To: [redacted]
Cc:
Subject: RE: Arvin Avenue SWM

Hi,

It's located on the west side of Watercouse 7.0, between Arvin Avenue and Barton Street.
https://www.google.ca/maps/place/Arvin+Ave,+Hamilton,+ON/@43.2210306,-79.6835981,310m/data=!3m1!1e3!4m5!3m4!1s0x882ca2468aad98b1:0x7dbf329d17cd97e5!8m2!3d43.2250063!4d-79.6966846

This aerial photo was taken during construction, but the greatest dimple - SMW Pond is in the ground - south west of the Arvin Ave. Cul-de-Sac bulb, is where the pond is located today.

I hope this helps?

Thank you,

Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager, Infrastructure Planning Growth Management, Planning and Economic Development Department City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: Margaret.Fazio@hamilton.ca

-----Original Message-----
From: [redacted]]
Sent: April-06-18 3:41 PM
To: Fazio, Margaret
Cc: [redacted]
Subject: Arvin Avenue SWM

Hi Margaret,

Can you tell us where the Arvin Avenue Stormwater Management Facility is located?

Thank you,

Maria

Hamilton

Mailing Address:
71 Main Street West
Hamilton, Ontario
Canada L8P 4Y5
www.hamilton.ca

Planning and Economic Development Department
Growth Management Division
Physical Address: 71 Main Street West, 6th Floor
Phone: 905-546-2424 Ext. 2218 Fax: 905-540-5611

April 24, 2018

FILE: Block 2 Servicing Strategy – Public Consultation

[redacted]

Dear Mr. Thompson and Friends:

Re: Block 2 Servicing Strategy for Fruitland-Winona Secondary Plan letter of April 15, 2018

Thank you for sending the above letter on behalf of your friends and neighbours from within the Block 2 Servicing area.

We would like to provide some background to this Report, in hopes that we can clarify how this report fits in the planning process, before we address your questions.

The B2SS is a technical exercise only and is not appealable. The B2SS follows the land designations (also referred to as "land use") set out in the Council approved Fruitland-Winona Secondary Plan. The intent of the B2SS is to provide the plan for orderly development within this Block and includes water, wastewater and transportation services, and natural heritage inventory review/update within the study area for *if and when* the land owners wish to have their lands re-developed.

The B2SS Report we present for review now provides background information for and further supports the Concept Plan seen by some of your friends and neighbours, on two occasions at Public Information Centers held on April 4, 2017, and June 8, 2017.

You mention that your friends and neighbours don't have access to Twitter and may not receive the Stoney Creek News. This is not a problem, since the Twitter and Stoney Creek News provided the same Notice that was mailed to all Block 2 SS land owners that you already received. Additional means of reaching land owners is just that – additional, not a different type of information.

In your letter you ask that the review period for the above Block 2 Servicing Strategy (B2SS) Final Draft Report be extended by another 120 days. The study process schedule does *not* allow for an extension of the formal review timelines. We appreciate, however, that some land owners are not technically savvy themselves and may be unsure as to what is meant by different things in the Report and/or how it affects them. We would be happy to meet with them (and you) to discuss any questions you may collectively have

on this matter. Please let us know of a time that would be convenient to you all, so that we can arrange for a meeting within the next week or two. Please contact me via telephone or e-mail to expedite the meeting planning process.

Please note that the hard copies of the above Report can be viewed at the Stoney Creek Municipal Services Centre and City Hall (2 floors) or available online at the following link: Hamilton.ca/blockservicingstrategies

Please let us know if you have further questions, and we look forward to hearing from you at the below phone number, e-mail or address, whichever is the most expeditious and convenient for you.

Yours truly,

Margaret Fazio, B.Sc., ***EP, MCIP, RPP***
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

:mf
Attach (1) – Copy of Original Letter of April 15, 2018 with signatures

cc: [redacted]

Sally Yong-Lee, Manager
Infrastructure Planning
[redacted]

Monir Moniruzzaman, Senior Project Manager
Infrastructure Planning
Alissa Mahood, Senior Project Manager
Community Planning
Melissa Kiddie, Natural Heritage Planner
Community Planning
[redacted]

Dave Maunder, Project Lead
Aquafor Beech Ltd.

[redacted]

April 28, 2018

Margaret Fazio
Senior Project Manager
City of Hamilton
71 Main Street West
Hamilton, Ontario
L8P 4Y6

Dear Ms. Fazio

SUBJECT: Block Servicing Strategy for Block 2-Fruitland-Winona Secondary Plan

We received a Notice of Draft Study Report Completion Block Servicing Strategy from the City of Hamilton by mail on Thursday April 12/18. This notice states that Residents must provide any questions or comments to the City of Hamilton by April 30/18. This does not leave ius much time to form our opinions & present our concerns regarding the use of our lands and any proposed thoughts on its development.

This is our Family home, our first home & most prized possession. It consists of 6.2 perfectly good developable land. Our primary concern is that it be utilized to its maximum development potential.
We do not feel that this current Plan does that on several counts.

The positioning of the Park on a large section on the North East border of our property is the first issue of concern. We were told it was moved there from another original location so we ask also, that it be either moved back or re-located elsewhere. This is perfectly good developable residential space.

Secondly is the ditch (labelled Watercourse 7?} that has been involuntarily placed unto us to divert the drainage situation elsewhere and has been for many years a major issue of concern & dispute This ditch divides our property into two. The majority is on the north side and has limited our accessability , usage and enjoyment of our property. As a result of this ditch, we have been forced to pay full Residential taxes , on a property deemed Agricultural Farm. In the course of over 30 years , as a result of this, it has cost my family dearly in unnecessary & unfair property taxes.

A promise to provide accessibility with the placement of a culvert by the HCA April 2007, or one of several suggestions to move this drainage ditch North to South through one residential property (2009), instead of everybody's backyard, left us all hopeful but nothing was ever done as discussed or promised, now escalating our concern it has devalued our property.

Our questions are these:
Why was this ditch dug up on private property through our back yards?
Why must we have our private property devalued or made inaccessible by having this ditch forced on us?
How could HCA have Jurisdiction over a man made ditch they don' t own, never cleaned, maintained and need permission to set foot on?
The infestation of insects in warm weather is also of great concern as is the safety aspect with children residing & playing along here.

The issues & concerns for my family are multiple . We live here. Whether it is developed now is not of pressing concern as we have not been an active proponent of development.
Although we would like to see all the wonderful plans designed by the City , for a beautiful residential community come to fruition, we have neither the need or motivation to sell at this point, especially, not at our expense

The City of Hamilton & the HCA have major drainage issues stemming from the mountain which directly affects drainage below. We ask that We not be made the scapegoats for poor decisions made regarding these drainage issues. We ask the City to meet with us to discuss our concerns & suggestions & try to resolve this long standing issue with a mutually compatible resolution

These are only several of our questions & concerns about the current Servicing Strategy for Block 2-Fruitland-Winona Secondary Plan.
We are open for discussion & a mutually suitable solution. We ask the City for fairness, consideration & inclusion in this process

Sincerely,

[redacted]

[redacted]

April 28, 2018

Margaret Fazio
Senior Project Manager
City of Hamilton
71 Main Street West
Hamilton ON
L8P 4Y6

Dear Ms. Margaret Fazio,

Regarding: Block 2 Servicing Srategy for Fruitland-Winona Secondary Plan

I, Anthony Nearchou, and my wife, Loredana Nearchou [redacted] one of the properties within the Block 2 Servicing Study, and we have some concerns.

We moved here in 2014. The size of the property (1 acre) was the main draw for us and our three children. Unfortunately, the ditch cutting halfway through our property presents a flooding risk at certain times of the year and makes it difficult to enjoy the use of our property in its entirety. We don't plan on selling the property any time soon so we'd like to have the situation remedied in a manner that does not devalue the property value.

Neither the city nor the Hamilton Conservation Authority have ever maintained the ditch so it's unclear what their role could be in any possible decision concerning this problem.

We welcome any clarification on this issue,

Regards,

[redacted]

April 29, 2018

Margaret Fazio
Senior Project Manager
City of Hamilton
71 Main Street West
Hamilton, Ontario
L8P 4Y6

Dear Ms Margaret Fazio,

SUBJECT Block Servicing Strategy for Block 2-Fruitland-Winona Secondary Plan

My name is Radmilla Curcic and I live a[redacted] with my three sons. My property consists of approx. 2-1/2 acres and is located within the Block 2 Servicing Study. I received a letter on April 12/18 advising me to forward any questions regarding development plans in this area. A deadline of April 30/18 does not leave much time to study these plans or render my thoughts or decisions. I have several questions regarding my particular property & its proposed usage.. I also question & disagree with some of the designations labelled , namely: wetlands, Heritage , & natural Watercourse 7 ? There is nothing natural about any of this as it is a direct result after many years, of the ditch dug on my property to alleviate past flooding issues . with many promises & complaints raised over many years.

These issues have been long standing, documented, & well known.. Wetlands? Sure, Where our beautiful Vegetable garden once existed , we now have All the neighbours on Glover Road whose properties back onto mine draining their rain water, swimming pools etc onto ours. We worry about the insects that amass in both this stagnant ditch water when it is not dry & the side that neighbours drain their water into my lawn. . This ditch also cuts accessibility to the far end of my property and have had to abandon it as a result. It is full of dead trees & thorny shrub.

No one knows our property better than us! We would ask for an opportunity to personally address our issues and concerns as we will not make any hasty irrational decision regarding our property. & its usage.. In order for these plans to go forth, we ask the City of Hamilton, Planning to take our concerns seriously. & fairly.

2[redacted]

[redacted]

April 30, 2018

Growth Management, Planning and Economic Development Department
City of Hamilton
71 Main Street West, 6th Floor
Hamilton, ON L8R 4Y5

Attn: Margaret Fazio, B.Sc., EP, MCIP RPP Margaret.Fazio@hamilton.ca

Hi Margaret,

Please find offered this brief note from the owners of [redacted] (The old Hamilton Machine shop and residence).

We recognise that a development plan is in place and have watched its evolution. Our desire is not to get in the way of future development even though the property has current and ongoing Residential and Commercial value to us. It is available for Developer Purchase when that time arises.

We have concerns about claims in the plan as we do not recognise these attributes based on our being the caretakers of our 3+ acres plus, the property east 2+ acres and west 3 acres of us which we mow to the rear of the property line (respecting the treed portion of course).

As we are "last in" with the 3 block plan we concern ourselves with any intent that might create a lessening in value of Block 2 to accommodate needs of Block 1 and 3 which Hamilton, land owners and "Developers" have "organised". 😊

Regards,

[redacted] [redacted]

[redacted]

Lloyd, Trish

From: [redacted]
Sent: April 30, 2018 1:40 PM
To: Fazio, Margaret
Cc: [redacted]

Subject: Block 2 Servicing Study Draft - Comments
Attachments: BSS 2 Comments_April 30 2018_Final.pdf; Concept Plan Overlay - Block 2 Servicing Strategy.pdf; Drainage Area Sketch.pdf; Existing Mon Well Location 2018-04-19.pdf; Site Plan_27 April2018.pdf

Good Afternoon Margaret,

Please find attached our comments for the Block 2 Servicing Strategy Draft, as it relates to the property owned by Losani, known as [redacted]

Please also find 4 other attachments enclosed including a site plan, an overlay of a concept plan with the BSS concept plan, a drainage area sketch, and a map showing the existing monitoring well location.

Regards,

[redacted]

MHBC **Planning, Urban Design & Landscape Architecture**
540 Bingemans Centre Drive, Suite 200 | Kitchener | ON | N2B 3X9 | [redacted]

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April 30, 2018

Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager
City of Hamilton
71 Main Street West, 6th Floor
Hamilton, ON L8P 4Y5

Dear Ms. Fazio,

RE: Block 2 Servicing Strategy – Comments on Draft
OUR FILE 11172A

On behalf of our client, Losani Homes, we are submitting these comments in response to the Draft Block 2 Servicing Strategy (BSS) for the Fruitland-Winona Secondary Plan Area, prepared by Aquafor Beach Limited, dated April 3, 2018 and released on April 6, 2018. The following comments are specific to the properties municipally known as [redacted]

It is requested that these comments and the attached site plan be considered in preparation of any further drafts of the Block 2 Servicing Strategy. Formal applications for a zoning by-law amendment and site plan control are forthcoming in the near future.

The following is a summary of the concerns:

Planning Comments (prepared by MHBC)

1) **Land Use**
   - The residential land use designations reflect the Fruitland-Winona Secondary Plan, and as this reflects the decision of the OMB that was the result of coordination and settlement with City staff.
   - A site plan has been prepared for the lands (attached). The densities conform to the required densities in the Secondary Plan. The site plan was subject to a pre-application on May 8, 2017; along with review of proposed zoning. Applications are intended to be submitted in the near future based on the pre-application requirements for studies.
   - The Secondary Plan Land Use Schedule identifies a 'Neighbourhood Park' and through previous discussions it was intended the size of the park would be determined at the time of a development application in accordance with the City policies for parkland dedication.

The proposed site plan shows this park in the general location, however, it is slightly further south, and includes the entire width of the property, which allows for more efficient development and does not preclude a small piece of the property from development. The size is based on the City's parkland dedication requirements.

2) **Road Network**
   - We have major concerns with the road network identified in the BSS, as no connection is proposed to Glover Road or Barton Street and connections to the subject lands are shown from other lands. Our site plan proposes a connection to Glover Road.
   - Further to the above comment, our proposed site plan provides for two possible future connections to the lands to the west.

3) **Natural Features**
   - The Secondary Plan and the Official Plan do not identify any natural features or constraints on the lands. We do not agree with the mapping in the Block Servicing Strategy as it is identifies natural feature considerations. Further details are provided in this letter.

The following comments are based on the proposed site plan and development and provide comments to be considered in the Final Block 2 Servicing Strategy.

<u>Engineering Comments (prepared by Scott Llewellyn and Associates)</u>

1) **Section 5.2 – Stormwater Management:**
   - A private Stormwater Management (SWM) Facility is proposed to provide adequate quantity, quality and erosion control for the proposed development, separate from the two proposed SWM facilities in the Block 2 Servicing Report.
   - A Post-Development Drainage Area Plan is attached with this submission, and:
     - Catchment 201 represents the post development drainage from the entire proposed development (SWM facility provides quantity control)
     - Catchment 102 represents the external drainage from the vacant grassed lands to the south (Routed through SWM facility, deemed future development lands per Block 2 Servicing Strategy Report and therefore ultimate quantity control to be provided by future development to the south)
     - Catchment 103 represents the uncontrolled drainage from the Winona Vine Estates development (SWM facility provides quantity control)
     - Catchment 104 is the controlled drainage from the Winona Vine Estates development (Routed through SWM facility, ultimate quantity control measures provided within Winona Vine Estates)
   - The private SWM facility has been designed with similar characteristics as described in the Block 2 Servicing report.

2) **Section 5.5.5 – Culverts:**
   - Table 5.3 provides the upstream and downstream inverts for the existing 600mm dia. CSP culvert of 87.612m and 87.467m respectively. Based on site visits, it is determined that the inverts may potentially be lower than specified in the report. Confirmation of the existing inverts will be completed at a later date.

3) **Section 5.6.1 – Quality Control:**
   - The proposed private SWM facility will be designed to provide Level 1 Enhanced Quality Control for the proposed development.
   - A permanent pool (150m3/ha) and extended detention (40m3/ha) component in correspondence with Table 5.4 of Block 2 Servicing Report will be provided.
   - Additional quality control will be provided within the proposed development as part of the treatment train process.

4) **Section 5.6.2 – Quantity Control:**
   - The proposed private SWM facility will be designed to provide post to pre development quantity control for the 2-year to 100-year storm events.

5) **Section 5.6.3 – Erosion and Sediment:**
   - Erosion control will be provided by the extended detention portion of the proposed SWM facility.
   - A low flow orifice is proposed in the SWM facility to ensure the 25mm storm event has a drawdown time within the 24-48 hour range per MOE guidelines.
   - As per the Block 2 Servicing Strategy report, the erosion control requirements vary between 99 to 106 m3/ha. Based on preliminary calculations, the volume during the 25mm storm event is approximately 1100m3. Based on a drainage area of 10.14 ha (Catchments 201, & 102-104), the erosion control provided is approximately 108.5 m3/ha, and therefore the erosion control requirements are satisfactory.

6) **Section 5.9 – Water Main Servicing:**
   - A private watermain network will be routed through the proposed development and is to be designed to service the proposed development.
   - It is proposed to connect the private watermain system to the existing 400mm dia. watermain on Glover Road.

7) **Section 5.10 – Sanitary Sewer Servicing:**
   - A private sanitary network will be routed through the proposed development and is to be designed to service the proposed development.
   - It is proposed to connect the private sanitary sewer system to the existing 450mm dia. sanitary sewer on Glover Road.
   - The Block 2 Servicing Report has designated the sanitary effluent from the proposed development to outlet to the existing 300mm dia. sanitary sewer on Barton Street.
   - Although specified to outlet to the existing 300mm dia. sanitary sewer on Barton Street, it is more feasible to discharge the sanitary effluent from the proposed development to the existing 450mm dia. sanitary sewer on Glover Road due to the following:
     - The current site plan allows the sanitary sewer to be routed within the private road network, making maintenance easier on-site.
     - The existing 300mm dia. sanitary sewer on Barton Street and existing 450mm dia. sanitary sewer on Glover Road ultimately connect downstream at the intersection of the two roads (immediately northeast of the site). Therefore, since both sewers connect downstream in close proximity to the site, there will be an insignificant difference between draining to Glover Road as opposed to Barton Street.

- Since the watermain is proposed to connect to Glover Road, it is efficient to outlet the proposed sanitary sewer to the existing 450mm dia. sanitary sewer on Glover Road as well. Additionally, this limits the road cuts required for the servicing to Glover Road only.

Environmental Comments (prepared by Colville Consulting)

It is understood that site visits and wildlife surveys conducted from adjacent lands by Aquafor Beech Limited in support of the BSS, in combination with air photo interpretation, resulted in the identification of several natural heritage features on the 860 and 884 Barton Street properties. The extent of these features are illustrated in Figures 3-5 and 4-1, and include a complex of wetlands, an extension of Watercourse 6.1, habitat of Bobolink and Barn Swallow and Significant Wildlife Habitat. Although not located on the property, a woodland has been identified to the south of 884 Barton Street. Comments regarding the delineation of each of these features are provided below.

1) **Wetlands**
   - Figures 3-5 and 4-1 indicate that a series of small wetland pockets (identified as Unevaluated Wetlands on the figures) are present on the [redacted] properties. It is assumed that vegetation community mapping included in Figure 3-3 informed this figure. Since access was not provided to these properties, and many parts of the properties are not observable from adjacent lands, it is unclear how the extent of wetlands were delineated with the precision implied in the above noted figures and how vegetation in each of these identified wetland pockets was verified. It is requested that more details be provided in the BSS report.

2) **Watercourse 6.1**
   - Although we are of the opinion that the extension of Watercourse 6.1 added as part of the BSS should not be mapped as a watercourse feature, we do agree with the comment on page 19 of the BSS that states that Watercourse 6.1 is not required to be retained as an open feature when these lands go forward for development. It is our opinion that any contribution to downstream fish habitat will be maintained through the implementation of the stormwater management system.
   - To reflect the above noted comment, it is recommended that relevant figures in the BSS be updated to reflect that the extension of Watercourse 6.1 is not a watercourse feature and that the illustrated buffers be removed.

3) **Habitat of Endangered and Threatened Species**
   - It is understood that a single male Bobolink was observed on the [redacted] property during breeding bird surveys on June 4 and June 18, 2015, and that the breeding status of this species was designated as Possible. Since no nest was observed and this species was not confirmed as breeding on the property, it is our opinion and experience that it is not appropriate to assume that Bobolink were nesting on the [redacted] property. It is also not appropriate to assume the location of a nest as illustrated in Figures 3-5 and 4-1. It is therefore our opinion that the nest location identified on Figures 3-5 and 4-1 should be removed, along with the 300m buffer area.
   - The BSS also reports that Barn Swallow nesting was confirmed in a building on the [redacted] which is north of Barton Street and outside of the Study Area, however various figures in the BSS illustrate the nest location being south of Barton Street,

within the Study Area. If the nest location was observed on the [redacted] the 200m buffer area illustrated on figures should be redrawn to reflect.

- Despite the above comments, we agree with Section 3.5 of the BSS, which states that it is expected that habitat for Barn Swallow will be compensated for within the Study Area in a natural area adjacent to open parkland, while habitat for bobolink will be compensated for off-site.

4) Significant Wildlife Habitat

- Figures 3-5 and 4-1 indicate that a portion of the [redacted] has been identified as containing Significant Wildlife Habitat, which is reported in the BSS to be habitat of Carex hirsutella. Carex hirsutella was previously documented in isolated locations on the 860 Barton Street property during a June 2012 botanical inventory. This species was again observed in June 2016 as part of the inventory work for the BSS, with observations made from lands adjacent to [redacted]
- Since observations of Carex hirsutella over the entire area designated as Significant Wildlife Habitat would not be possible from lands adjacent to [redacted], more information is required in the BSS to explain how the extent of the area designated as Significant Wildlife Habitat was determined.
- Additionally, Figures 3-5 and 4-1 appear to imply that the Mineral Meadow Marsh communities on [redacted] constitute the habitat for Carex hirsutella on this site, while Carex hirsutella is considered to be an obligate upland species. More information is required in the BSS to adequately justify the area designated as habitat for Carex hirsutella, and ultimately the extent of Significant Wildlife Habitat.

5) Woodlands

- Figure 3-3 indicates that the treed lawn area located on the [redacted] property has been described as a Mineral Cultural Woodland, with a manicured lawn for ground cover and no understory. This treed lawn area/cultural woodland has been designated as a Woodland on Figures 3-5 and 4-1. Further discussion should be included in the BSS as to why this area was described as Mineral Cultural Woodland and not a Parkland ELC community, which may be more appropriate given the site conditions and land use of the property.
- In addition to being mapped as a Woodland, Figures 3-5 and 4-1 illustrate a 10m buffer associated with this treed lawn/cultural woodland area. It is assumed that the 10m buffer illustrated was derived entirely from policies contained in the City of Hamilton Urban Official Plan and not from wildlife observations or documented functions of this area, since no breeding bird or wildlife observations were reported for this vegetation community. The BSS should contain a discussion as to why breeding bird surveys and wildlife observations were not conducted in this vegetation community to support the buffers illustrated.

6) General Comments

a) Table 3-1 on Page 12 of the EIS summarizes the dates of field inventories completed as part of the natural heritage evaluation of lands in the BSS Study Aare. We note that the majority of botanical works were completed on September 30, 2015, with a subsequent scoped site visit completed on June 9, 2016. It is our opinion that the level of effort reported is not sufficient to accurately inventory and characterize the approximately 57ha of lands included in the BSS Study Area.

b) Although breeding bird surveys were conducted on June 4, June 18 and July 8, 2015, it is our opinion that the seven stations surveyed is insufficient effort to characterize avian use of lands in the Study Area. It appears that the majority of survey stations focussed on cultural meadow and cultural thicket communities, while no survey effort was given to the woodland communities on properties where access was granted. Please provide rationale for excluding surveys in these areas within the EIS or BSS.

c) Figures 3-5 and 4-1 attempt to depict limitations and opportunities to development. It is our opinion that these figures were generated using insufficient field observations and does not accurately reflect the current condition of properties in the Study Area. It is recommended that a disclaimer be added to the BSS to reflect possible inaccuracies and help minimize future prejudices during implementation of the BSS.

d) Figures 3-5 and 4-1 also appear to be duplicates and one should be removed from the BSS to avoid potential confusion.

e) Section 4.2.1 states that the NHS in the BSS includes buffers as defined by City and HCA policy. Since field surveys conducted as part of the BSS were not considered in the establishment of buffers depicted in various figures in the BSS, the report should more clearly state that buffer widths are to be determined through site specific EIS's and not presume the buffers illustrated are appropriate.

f) Figure 3-3 in the BSS illustrates the extent of vegetation communities in the Study Area. The legend on this figure indicates that vegetation communities on the 860 and 884 Barton Street properties are a complex of Mineral Cultural Meadow and Mineral Meadow Marsh, however the polygons depicted on the figure are not labeled to allow differentiation between these vegetation communities. Figure 3-3 should be modified to provide clarity.

g) It is our opinion that it is not possible to observe all portions of the property from adjacent lands alone and that the extent of wetland features illustrated in the above noted figures do not accurately reflect vegetation communities on the 860 and 884 Barton Street properties.

<u>Hydrogeological Comments (prepared by Terra-Dynamics Consulting)</u>

1) **Hydrogeologic / Hydrologic Comments**

- *Section 2.2, of the SCUBE West Subwatershed Study* describes the groundwater resources describes the relatively low groundwater recharge potential of the Block 2 area. The reason for this is that the Block 2 area is characterized by a thin layer of the low permeability Halton clay till overlying a thick sequence of low permeability Queenston Shale. *Section 5.3 Block 2 FSR – Low Impact Development Source Controls* (p. 38), states that *"the subject study area has a volumetric infiltration target of 1mm over the drainage area"* and then lists a variety of Low Impact Development (LID) techniques for the Block 2 area to promote infiltration into the subsurface.
- A 1mm infiltration target can be considered an insignificant amount of groundwater recharge and the proposed LID techniques presented in Section 5.3 and Table 5.1 will likely have an insignificant net effect of promoting groundwater recharge. The application of LID techniques in this low permeability hydrogeologic setting could result in ponded, and potentially stagnant water at surface and hence the expenditures for LID-type infrastructure are likely not warranted.

Please find the following documents enclosed in support of our comments:

1) Site Plan prepared by MHBC Planning, dated April 27, 2018
2) Overlay of Concept Plan and Block 2 Servicing Strategy Concept Plan, prepared by MHBC Planning
3) Drainage Area Sketch, prepared by Scott Llewellyn and Associates
4) Existing Monitoring Well Location, prepared by Terra-Dynamics Consulting

We understand that comments are being received until April 30, 2018 and we would be pleased to meet with City staff and our team of consultants to review these comments and work through the details related to servicing the lands such that this information can be included in the final report.

Yours truly,

MHBC

[redacted]

C. [redacted]

Lloyd, Trish

From: [redacted]
Sent: April 30, 2018 6:07 PM
To: Fazio, Margaret
Subject: Re: 412 Final Draft B2SS April 30, 2018

Hi Margaret,

I emailed them to iplanning@hamilton.ca. I'll check and send again.

I'll get back to you asap about meeting, date, time, place.

Thanks,

[redacted]

> On Apr 30, 2018, at 5:06 PM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:
>
[redacted]
> Did you send in the comments via hard copy - regular mail or electronically? I have not seen electronic comments, yet.
>
> We can meet with them - no problem. We should do so, in order to meet project finalization deadlines, within the next two weeks or so, however.
>
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>
> Thank you,
>
> Margaret Fazio, B.Sc., EP, MCIP, RPP
> Senior Project Manager, Infrastructure Planning Growth Management,
> Planning and Economic Development Department City of Hamilton, 71 Main
> Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
> Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail:
> Margaret.Fazio@hamilton.ca
>
>
>
> -----Original Message-----
[redacted]
> Sent: April-30-18 4:27 PM
> To: Fazio, Margaret
> Subject: 412 Final Draft B2SS April 30, 2018
>
> Hello Margaret,
>

> I've sent in our Public Comment to the 412 page Final Draft of the Block 2 Servicing Strategy for the April 30, deadline.
>
> We have been quite overwhelmed with the amount of detailed technical information.
>
> You offered to meet us in March but we thought it best to wait until the Draft came out.
> I'm asking on behalf of my parents if you would consider meeting with them about the watercourse.
>
> Thank you,
>
[redacted]
>

Concept Plan Overlay

Barton St and Glover Rd
Part Lot 11, Conc. 2 Saltfleet
City of Stoney Creek

LEGEND

- Subject Lands
- Servicing Strategy Study Area

Sources: Figure 4.4 - Concept Plan - Block 2 Servicing Strategy for the Fruitland-Winona Secondary Plan Lands Draft Report

DATE: April 12, 2018

SCALE: 1:3,500

FILE: 11172A

DRN: JB

K:\11172A-DAL BELLO_HAMILTON\REPORT\SERVICING OVERLAY.DWG

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
200-540 BINGEMANS CENTRE DR. KITCHENER, ON. N2B 3X9
P: 519.576.3650 F: 519.576.0121 | WWW.MHBCPLAN.COM

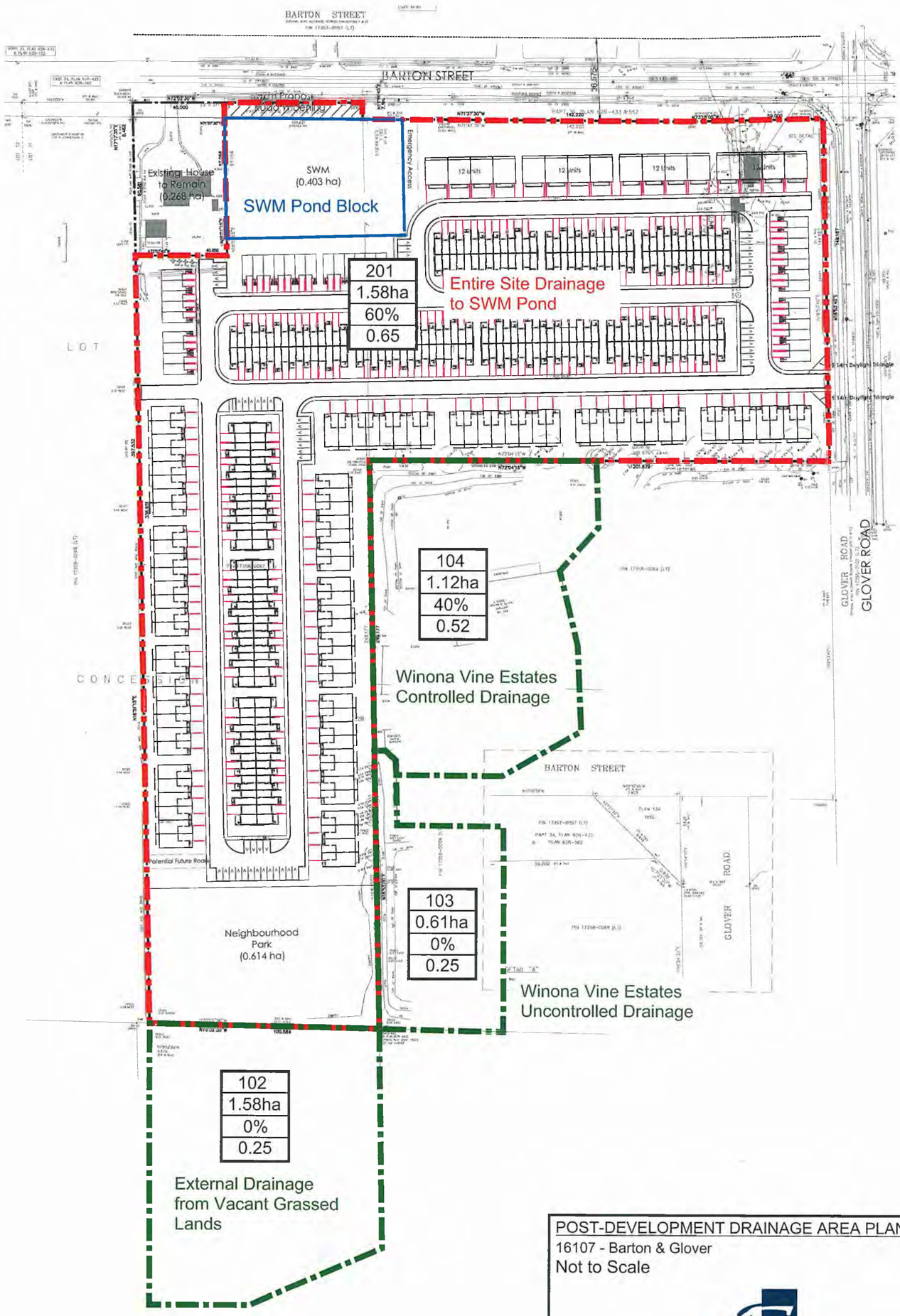
LEGEND

102	Drainage Area ID
1.58ha	Drainage Area (hectares)
0%	Percent Imperviousness
0.25	Runoff Coefficient (C-value)

Proposed Development Drainage Area

External Drainage Area

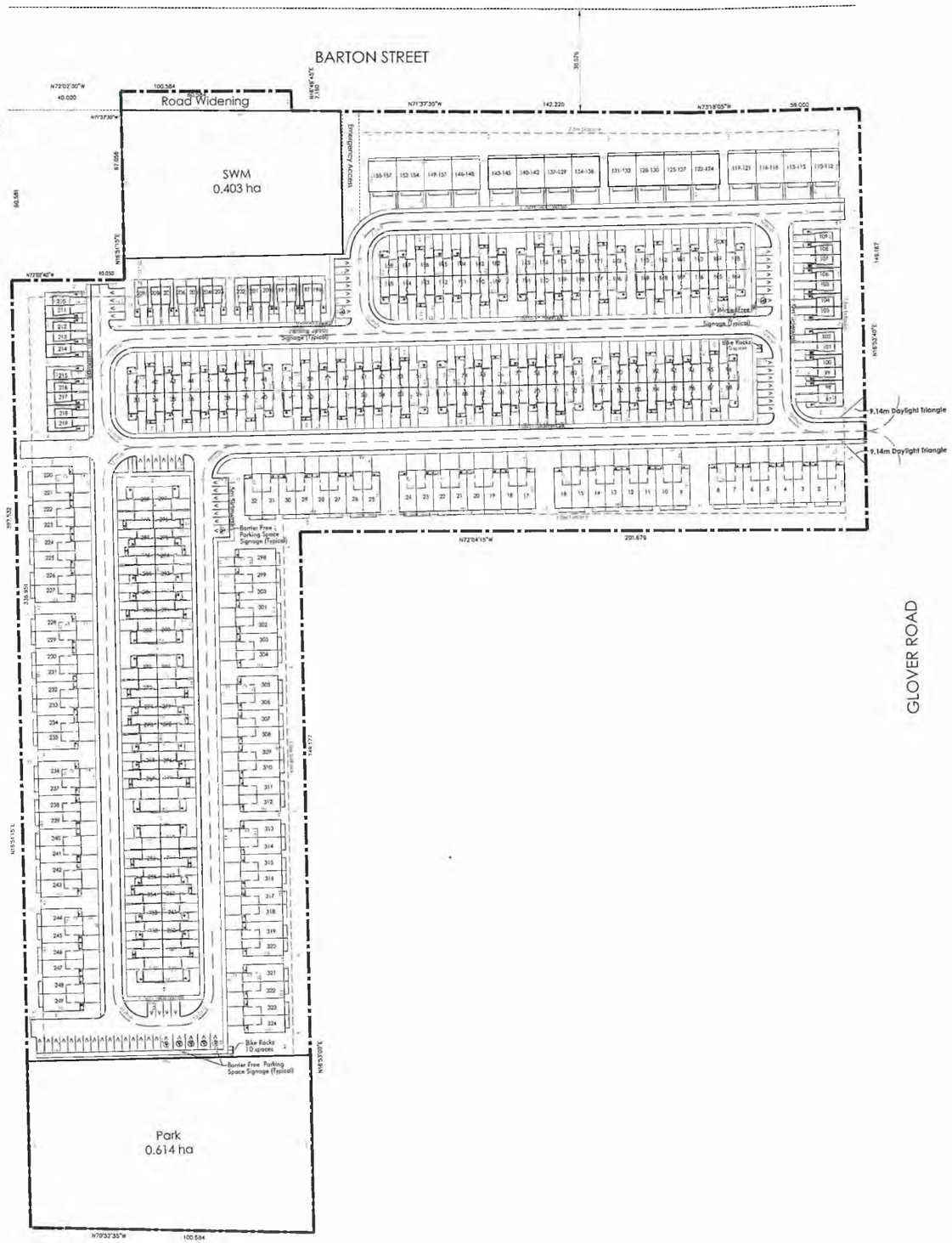
N



POST-DEVELOPMENT DRAINAGE AREA PLAN
16107 - Barton & Glover
Not to Scale

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS

Document Path: H:\TERRA_DYNAMICS\9179 - TD-___ - Losani_Barton-Glover_Dev\gis\mxd\borehole location.mxd



Note:
Reference the fire route and accessible parking signs on the site plan using the following sign design.

LEGAL DESCRIPTION

PART OF LOT 11 CONCESSION 2
GEOGRAPHIC TOWNSHIP OF SALTFLEET
CITY OF HAMILTON

Key Plan

SITE STATISTICS

Zoning Summary *ZONE RM3-XX*		
	Required	Provided
Total Units	n/a	324
Lot Area (min)	4,000m²/ 0.400 ha	57,267.5 m²/ 5.727 ha[1]
Lot Frontage (min)	50m	149.17m
Front Yard (min)	7.5m	7.5m
Rear Yard (min)	6m	6m
Side Yard (min)	6m/ 7.5m Flankage Yard	3.4m/ 7.5 Flankage Yard
Building Height (max)	11m	12m
Lot Coverage (max)	35%	34.2%[2]
Landscaped Open space (min)	50%	37.8%
Parking Spaces	2 spaces/unit	2 spaces/unit
Visitor Parking Spaces	0.5 spaces/unit	0.19 spaces/unit[3]

[1] Based on net area (net of road widening, SWM pond, emergency access, and park
[2] Lot coverage calculation includes covered porches
[3] 63 visitor parking spaces provided including 8 barrier-free spaces

Building Area (19,566.7m²)	34.2%
Landscaped Area (21,654.0m²)	37.8%
Asphalt Area (16,046.8m²)	28.0%
Total (57,267.5m²)	100.0%

NOTES:
- All dimensions are in metres unless otherwise noted.
- Boundary and topographical survey information provided by A.T. McLaren Ltd., Land Surveyor, 2017.
- Driveways and aisles to be defined by 0.20m raised concrete curbing or sidewalks as shown.
- V - Denotes visitor parking

Revision No.	Date	Issued / Revision	By

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
200-540 BINGEMANS CENTRE DR, KITCHENER, ON, N2B 3X9 | P. 519.576.3650 F. 519.576.0121 | WWW.MHBCPLAN.COM

Stamp	
Date	April 27, 2018
Drawn By	JB
Plan Scale	1:800 (Arch D)
File No.	11172A
Checked By	DA
Other	
Project	Barton & Glover, City of Hamilton
File Name	SITE PLAN
Dwg No.	1 of 1
Scale Bar	

K:\11172A-Dal Bello_Hamilton\SP\SP_27April2018.dwg

Lloyd, Trish

From: [redacted]
Sent: May 1, 2018 7:44 AM
To: Fazio, Margaret
Subject: Re: 412 Final Draft B2SS April 30, 2018

Hi Margaret,

Did you get the comments at iplanning?

Will confirm with you asap - I'm checking Tues May 15. Downtown City Hall is good.

What's the latest time of day you can meet?

As of now, I can do 4pm. Too late??? I'm coming after work.

[redacted]

> On Apr 30, 2018, at 5:06 PM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:
>
> Hello [redacted]
>
> Did you send in the comments via hard copy - regular mail or electronically? I have not seen electronic comments, yet.
>
> We can meet with them - no problem. We should do so, in order to meet project finalization deadlines, within the next two weeks or so, however.
>
> Is there a preferred date or time that you had in mind - time of day, etc.? and please let us know preferred location. I can then see who's available when and we can coordinate.
>
> Thank you,
>
> Margaret Fazio, B.Sc., EP, MCIP, RPP
> Senior Project Manager, Infrastructure Planning Growth Management,
> Planning and Economic Development Department City of Hamilton, 71 Main
> Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
> Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail:
> Margaret.Fazio@hamilton.ca
>
>
>
> -----Original Message-----
> From: [redacted]]
> Sent: April-30-18 4:27 PM
> To: Fazio, Margaret
> Subject: 412 Final Draft B2SS April 30, 2018
>

> Hello Margaret,
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> You offered to meet us in March but we thought it best to wait until the Draft came out.
> I'm asking on behalf of my parents if you would consider meeting with them about the watercourse.
>
> Thank you,
>
> [redacted]
>

Lloyd, Trish

From: [redacted]
Sent: May 1, 2018 5:05 PM
To: Fazio, Margaret
Subject: Fwd: 412 Final Draft B2SS April 30, 2018

Hi Margaret,

I can arrange 3pm on Wed May 16.

Hamilton City Hall is closer for me so I can get there sooner.

[redacted]

Begin forwarded message:

From [redacted]
Subject: Re: 412 Final Draft B2SS April 30, 2018
Date: May 1, 2018 at 7:43:49 AM EDT
To: Margaret Fazio <Margaret.Fazio@hamilton.ca>

Hi Margaret,

Did you get the comments at iplanning?

Will confirm with you asap - I'm checking Tues May 15. Downtown City Hall is good.

What's the latest time of day you can meet?

As of now, I can do 4pm. Too late??? I'm coming after work.

[redacted]

On Apr 30, 2018, at 5:06 PM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:

Hello Maria,

Did you send in the comments via hard copy - regular mail or electronically? I have not seen electronic comments, yet.

We can meet with them - no problem. We should do so, in order to meet project finalization deadlines, within the next two weeks or so, however.

Is there a preferred date or time that you had in mind - time of day, etc.? and please let us know preferred location. I can then see who's available when and we can

coordinate.

Thank you,

Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: Margaret.Fazio@hamilton.ca

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From: [redacted] [[redacted]]
Sent: April-30-18 4:27 PM
To: Fazio, Margaret
Subject: 412 Final Draft B2SS April 30, 2018

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Thank you,

[redacted]

Lloyd, Trish

From: [redacted]
Sent: May 1, 2018 5:54 PM
To: Fazio, Margaret
Cc: [redacted]
Subject: Re: 412 Final Draft B2SS April 30, 2018

Hi Margaret,

John and Enrico are available Wed May 16, 3pm.

I can make it in for 3pm at Hamilton City Hall downtown.

My parents would also like to invite Brenda as she was with us last year. If she can't make it, we'd still like to go ahead with this date if it works for you.

Let me know if you haven't received the comments in iplanning. I sent them twice.

Hope everyone's enjoying the beautiful sunshine! Thank you for coordinating.

[redacted]

> On Apr 30, 2018, at 6:07 PM, [redacted] wrote:
>
> Hi Margaret,
>
> I emailed them to iplanning@hamilton.ca. I'll check and send again.
>
> I'll get back to you asap about meeting, date, time, place.
>
> Thanks,
>
> [redacted]
>
>
>> On Apr 30, 2018, at 5:06 PM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:
>>
>> [redacted]
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>> Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
>> Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail:
>> Margaret.Fazio@hamilton.ca
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>> Subject: 412 Final Draft B2SS April 30, 2018
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>>
>> Thank you,
>>
>> [redacted]
>>
>

Lloyd, Trish

From: [redacted]
Sent: May 8, 2018 7:09 AM
To: Fazio, Margaret
Subject: Some general development questions 844

Hi Margaret,

Thank you for putting together the meeting next week. As I continue to read the Draft B2SS, some development questions came up that I'd like ask before the meeting.

1 a) Does an approved Draft and then finalised Plan of Subdivision become a By-law which is then entered into the Urban Plan for Hamilton or FWSP?

b) What is the time limit or expiry for an Application for Draft Plan of Subdivision?
And for an Approved Draft Plan?
Then, for a Final Plan to be executed/completed?

c) How long does it take to get an application approved?

2. My dad would like know at which point in the urbanisation process will our property taxes will go up if we don't develop? If we do develop?

3. We're in Area B for pond. While development to the east and west are eager to start as soon as they get their approvals, and they change their elevations and surface flow directions according to the B2SS, what safeguards are in place to prevent our property from getting flooded while we continue to live there?

4. Which costs must 844 share with the City?
Are there cost sharing obligations (must) for 844 with neighbouring developers?
Which shared costs are voluntarily?

5. Is the Culvert 6.1 size upgrade to 0.6m a "must"? If "may be", then what factors will be considered? How can that construction go forward while we still live there?

6. Similarly, the planned sanitation flow is from 860 to the west to us. How can that development next door go forward if we're still living here?

7. Where along the development process does one apply for density increase? Do you know the limit?

Thank you,

[redacted]

Lloyd, Trish

From: Philip, Mohan
Sent: May 11, 2018 2:52 PM
To: Fazio, Margaret; Dave Maunder ([redacted]); Ash Baron; Mahood, Alissa; Moniruzzaman, Monir
Cc: Yong-Lee, Sally; McArthur, [redacted] Yvette; Kiddie, Melissa
Subject: RE: REQUEST FOR HELP WITH DRAFT RESPONSE TO: Block 2 Servicing Study Draft - Comments from Losani Consultant

Hi Margaret,

I agree on your point under item 2 below regarding no road connection to Barton. I suggest a pedestrian connection/walk way to Barton St. The proposed site plan doesn't seem to match with the road network proposed in the Secondary plan. However, I support a road connection to the north portion of Glover Road, provided it aligns with Willow Lane. I understand that minor modifications are allowed for the local road network. The general compliance of the site plan with the secondary plan should be reviewed by the development review team.

Thanks
Mohan

From: Fazio, Margaret
Sent: May 10, 2018 12:49 PM
To: Dave Maunder ([redacted]>; Ash Baron [redacted]>; Mahood, Alissa <Alissa.Mahood@hamilton.ca>; Philip, Mohan <Mohan.Philip@hamilton.ca>; Moniruzzaman, Monir <Monir.Moniruzzaman@hamilton.ca>
Cc: Yong-Lee, Sally <Sally.Yong-Lee@hamilton.ca>; McArthur, Helen <Helen.McArthur@hamilton.ca>; [redacted] Rybensky, Yvette <Yvette.Rybensky@hamilton.ca>; Kiddie, Melissa <Melissa.Kiddie@hamilton.ca>
Subject: REQUEST FOR HELP WITH DRAFT RESPONSE TO: Block 2 Servicing Study Draft - Comments from Losani Consultant
Importance: High

Hello,

As per the below and attached items:

I have the following items which I would appreciate your collective help with, in the draft response, by **Monday, May 14, 2018, if possible:**

1. **Planning Comments (pg. 1 & 2) – and general**. I intend to respond that the details contained in the Comment sheet pertaining to a specific preliminary development application cannot be vetted through nor direct the Block Servicing Strategy and that there is enough flexibility in the BSS and Fruitland-Winona Secondary Plan to fully address them, when they're ready to submit a formal application. We would not be able to provide nor amend B2SS at this time, based on a future development application. (therefore no detailed response on Engineering Comments nor comments re interpretation of location of Neighbourhood Park, on pg. 2 &3, and 1 respectively). We will however, address their other comments directed at interpretation of the BSS Draft Report.

2. **Road Network – Mohan – Pg. 2 -** The reason for limiting local roads from exiting onto Barton is because we want to limit points of conflict between future Rapid Transit (Bus or Rail), when it comes, on Barton Street. Generally speaking the Local Road network is a concept which reflects the FWSP and is changeable during the formal application process, with input from submitted TIS analyses, etc. Please confirm/amend.

3. **Ash/Dave** – please provide a response to the comments where clarification of NHS, wetland, woodlot field work and written comments, etc. in related section on pages - 2, 4 & 5.

4. **Dave:** Could you please address the comments on Hydrogeological Comments (pg. 6&7).

5. Does **anyone** wish to add any other comments?

Please let me know if you have any questions.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: Fazio, Margaret
Sent: April-30-18 2:51 PM
To: Moniruzzaman, Monir; Yong-Lee, Sally; Dave Maunder ([redacted]; Kiddie, Melissa; Mahood, Alissa; Rybensky, Yvette; [redacted]
Subject: FW: Block 2 Servicing Study Draft - Comments

Hi,

Please see the comments below and attached.

I don't know how a neighbourhood park would be movable at this point of the Secondary Plan process or why they would understand this to be the case previously…Is it possible if they own the entire land for the park? Alissa – could you advise, please?

Please advise if you feel we need to incorporate the current site application comments with Block Servicing strategy as I have not been part of the development review process and don't know what's been promised, discussed, etc.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: [redacted]
Sent: April-30-18 1:40 PM
To: Fazio, Margaret
Cc: [redacted]
Subject: Block 2 Servicing Study Draft - Comments

Good Afternoon Margaret,

Please find attached our comments for the Block 2 Servicing Strategy Draft, as it relates to the property owned by Losani, known as [redacted]

Please also find 4 other attachments enclosed including a site plan, an overlay of a concept plan with the BSS concept plan, a drainage area sketch, and a map showing the existing monitoring well location.

Regards,

[redacted]

MHBC **Planning, Urban Design & Landscape Architecture**
540 Bingemans Centre Drive, Suite 200 | Kitchener | ON | N2B 3X9 | [redacted]

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Lloyd, Trish

From: Moniruzzaman, Monir
Sent: May 14, 2018 8:57 AM
To: Fazio, Margaret; Philip, Mohan; Dave Maunder (m[redacted]); Ash Baron; Mahood, Alissa
Cc: Yong-Lee, [redacted]; Rybensky, Yvette; Kiddie, Melissa
Subject: RE: REQUEST FOR HELP WITH DRAFT RESPONSE TO: Block 2 Servicing Study Draft - Comments from Losani Consultant

Please note SWM facility maintenance access road cannot be used as a regular pedestrian route officially from risk & liability perspective . SWM facility O&M maintenance staff do not maintain the access road for pedestrian.

From: Fazio, Margaret
Sent: May-11-18 3:26 PM
To: Philip, Mohan; Dave Maunder [redacted]; Ash Baron; Mahood, Alissa; Moniruzzaman, Monir
Cc: Yong-Lee, [redacted], Yvette; Kiddie, Melissa
Subject: RE: REQUEST FOR HELP WITH DRAFT RESPONSE TO: Block 2 Servicing Study Draft - Comments from Losani Consultant

Hi Mohan,

Thank you.

RE: Pedestrian connectivity to Barton. We had an earlier version where Aquafor Beech/Dillon wanted to provide servicing access to Barton as an underground facility in a local road, and later an easement. We overturned this due to future RT on Barton. All servicing is now routed differently as a result, so from a servicing perspective no access is necessary and we didn't want to encourage an easement just for surface use, because of two SMW ponds being also close to Barton.
In our discussions with all Blocks we included the request that the maintenance road along the perimeter of each pond be publically accessible, therefore allowing for another active transportation/trail connection to the rest of the neighbourhood along their location. We should make sure that this is included in the wording of the Final Report for B2SS and the other Blocks, as a recommendation/direction to Development. The distance from Glover to Watercourse 6.0 is about 650 m, so if between them we also have two SMW ponds with trails and a Collector Road this should provide sufficient connectivity, yes? Please let me know if you agree.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611: e-mail: *Margaret.Fazio@hamilton.ca*

From: Philip, Mohan
Sent: May-11-18 2:52 PM
To: Fazio, Margaret; Dave Maunder ([redacted]); Ash Baron; Mahood, Alissa; Moniruzzaman, Monir
Cc: Yong-Lee, Sally; [redacted], Yvette; Kiddie, Melissa

Subject: RE: REQUEST FOR HELP WITH DRAFT RESPONSE TO: Block 2 Servicing Study Draft - Comments from Losani Consultant

Hi Margaret,

I agree on your point under item 2 below regarding no road connection to Barton. I suggest a pedestrian connection/walk way to Barton St. The proposed site plan doesn't seem to match with the road network proposed in the Secondary plan. However, I support a road connection to the north portion of Glover Road, provided it aligns with Willow Lane. I understand that minor modifications are allowed for the local road network. The general compliance of the site plan with the secondary plan should be reviewed by the development review team.

Thanks
Mohan

From: Fazio, Margaret
Sent: May 10, 2018 12:49 PM
To: Dave Maunder[redacted] Ash Baron [redacted]; Mahood, Alissa <Alissa.Mahood@hamilton.ca>; Philip, Mohan <Mohan.Philip@hamilton.ca>; Moniruzzaman, Monir <Monir.Moniruzzaman@hamilton.ca>
Cc: Yong-Lee, Sally <Sally.Yong-Lee@hamilton.ca>; [redacted], Yvette <Yvette.Rybensky@hamilton.ca>; Kiddie, Melissa <Melissa.Kiddie@hamilton.ca>
Subject: REQUEST FOR HELP WITH DRAFT RESPONSE TO: Block 2 Servicing Study Draft - Comments from Losani Consultant
Importance: High

Hello,

As per the below and attached items:

I have the following items which I would appreciate your collective help with, in the draft response, by **Monday, May 14, 2018, if possible:**

1. **Planning Comments (pg. 1 & 2) – and general**. I intend to respond that the details contained in the Comment sheet pertaining to a specific preliminary development application cannot be vetted through nor direct the Block Servicing Strategy and that there is enough flexibility in the BSS and Fruitland-Winona Secondary Plan to fully address them, when they're ready to submit a formal application. We would not be able to provide nor amend B2SS at this time, based on a future development application. (therefore no detailed response on Engineering Comments nor comments re interpretation of location of Neighbourhood Park, on pg. 2 &3, and 1 respectively). We will however, address their other comments directed at interpretation of the BSS Draft Report.

2. **Road Network – Mohan – Pg. 2 -** The reason for limiting local roads from exiting onto Barton is because we want to limit points of conflict between future Rapid Transit (Bus or Rail), when it comes, on Barton Street. Generally speaking the Local Road network is a concept which reflects the FWSP and is changeable during the formal application process, with input from submitted TIS analyses, etc. Please confirm/amend.

3. **Ash/Dave** – please provide a response to the comments where clarification of NHS, wetland, woodlot field work and written comments, etc. in related section on pages - 2, 4 & 5.

4. **Dave:** Could you please address the comments on Hydrogeological Comments (pg. 6&7).

5. Does **anyone** wish to add any other comments?

Please let me know if you have any questions.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: Fazio, Margaret
Sent: April-30-18 2:51 PM
To: Moniruzzaman, Monir; Yong-Lee, Sally; Dave Maunder ([redacted]; Kiddie, Melissa; Mahood, Alissa; [redacted]
Subject: FW: Block 2 Servicing Study Draft - Comments

Hi,

Please see the comments below and attached.

I don't know how a neighbourhood park would be movable at this point of the Secondary Plan process or why they would understand this to be the case previously…Is it possible if they own the entire land for the park? Alissa – could you advise, please?

Please advise if you feel we need to incorporate the current site application comments with Block Servicing strategy as I have not been part of the development review process and don't know what's been promised, discussed, etc.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: [redacted]
Sent: April-30-18 1:40 PM
To: Fazio, Margaret
Cc: [redacted]
Subject: Block 2 Servicing Study Draft - Comments

Good Afternoon Margaret,

Please find attached our comments for the Block 2 Servicing Strategy Draft, as it relates to the property owned by Losani, known as [redacted]

Please also find 4 other attachments enclosed including a site plan, an overlay of a concept plan with the BSS concept plan, a drainage area sketch, and a map showing the existing monitoring well location.

Regards,

[redacted]

MHBC Planning, Urban Design & Landscape Architecture
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Hamilton

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Growth Management Division
Physical Address: 71 Main Street West, 6th Floor
Phone: 905-546-2424 Ext. 2218 Fax: 905-540-5611

MEETING MINUTES

FILE: Block 2 SS Final Draft Report Public Consultation

Meeting Purpose:
The Simone Family (844 Barton Street West) Block 2 Servicing Strategy Final Draft Report Comments and Questions.

Meeting Date: May 16, 2018

Attendance:

[redacted]

Margaret Fazio - Senior Project Manager, Infrastructure Planning, Growth Management, COH
Melissa Kiddie - Natural Heritage Planner, Development Planning, Planning, COH
Monir Moniruzzaman– Senior Project Manager, Infrastructure Planning, Growth Management, COH
Yvette Rybensky – Senior Project Manager, Suburban Team, Development Planning, COH
Mike Stone – Manager of Watershed Planning Services, Hamilton Conservation Authority
Sally Yong-Lee – Manager, Infrastructure Planning, Growth Management, COH

Item No.	Discussion	Action by
1.	Introductions.	
2.	**Status of the Block 2 Servicing Strategy Final Draft Report** – is still not finalized. City of Hamilton Staff themselves still have comments and concerns with how various items are treated/communicated and portrayed in this Report. Simone Family members had the same concern regarding the status Watercourse 6.1 and how it's shown in the Report maps. There is wording in the Report which speaks to the fact that Watercourse 6.1 can be developed overall, but this is not reflected in the Report itself. Mike Stone indicated that he is in agreement with the amendment of the mapping to reflect the latest approved status and amend the mapping legends accordingly i.e. **Watercourse 6.1 is not a regulated watercourse.** ***There will be no natural heritage buffer and it can/will be piped.*** COH staff confirmed that this is a change they intend to ask their consultant to make to the report.	**M. Fazio**

3.	**Bobolink** – There were questions regarding the required Environmental Impact Statement (EIS) required of lands which were not previously included in the Natural Heritage surveys, e.g. some include neighbours of the Simone Family property at [redacted] Those lands are indicated as needing an EIS, due to lack of permission to enter to the Block 2 SS consultant team at the time of the B2SS field work timeframe. Some species were indicated/heard/seen from the lands bordering their properties but were not able to be confirmed at that time. This is why now a separate EIS, that would show/ confirm presence or absence of a particular species at those locations, identified as part of the Block 2 SS, will need to be carried out at the development application stage. Habitat mapping which also is shown on bordering properties is not what an EIS is for. The EIS would need to confirm the presence/absence of a particular species on the neighbouring lands – where the species was heard/seen, etc., not the Simone Family lands.	
4.	**Fisheries** – Questions were asked about what is required if a watercourse is deemed to support fisheries, as part of/in preparation for the submission of development application(s). There is a self-assessment tool available from the Ministry of Fisheries and Oceans, which would help a qualified professional to determine if a permit application is required prior to the development of a particular property. For both overall EIS and this permitting process, a consultant can advise and walk through the process with the land owner. It may be worth considering to pool resources together with appropriate neighbours to help pay for the required permitting/EIS requirements, as applicable.	**The Simone Family Consultant Team**
5.	**Grading** – The City Engineers check proposed development applications' drawings, to ensure that the proposed developments don't drain onto adjacent properties, i.e. that their grading does not impact the neighbours in a negative way.	

6.	**The Development Application process** - is a public process that starts when the applicants are ready to develop their lands. It starts with a pre-consultation meeting where the applicants need to already have a realistic concept plan put together and have hopefully hired a Planning consultant and Engineering team to help them navigate what is a fairly complex process. Once the subdivision applications and supporting studies are ready, they are submitted for approval to the City and all Departments and applicable agencies are circulated to ensure that the proposals are acceptable to everyone. Final approval on any Plan of Subdivision, and any associated Official Plan and Zoning By-law amendment applications, is granted by Hamilton Council (with opportunity to comment by members of the public, adjacent land owners, and other developers). Site Plan applications are NOT a public process and are between the land owner and the City and involve a detailed review of all multiple residential, commercial and/or industrial developments. This process must be completed after the Plan of Subdivision is approved and before any building permits are issued.	
7.	**Changes to zoning - during the development application process** Any changes to zoning require that neighbouring properties get notified and that a notice be posted on the subject property for public to see/comment. Yvette Rybensky (present at this meeting) oversees the suburban application approval process. She/her staff circulate appropriate staff, and there is a public meeting required. The final decision of permission to develop or deny is carried out at Council and can be attended by the public and commented on by the interested members of the public.	
8.	**Examples of scenarios of development applications**, for adjacent properties for the Simone Family lands include a subdivision with a temporary Stormwater (SMW) Pond on the neighbour's land. The Block SS designated a final SMW Pond location to service the entire drainage area (there are two planned for this Block). If a proposed temporary SWM Pond can service only a portion of the entire drainage area it can do so, if the permanent pond will be put in place later. If however, the temporary pond itself is to be ultimately permanent; it has to be designed to provide drainage for the entire original drainage area.	
9.	**DRAFT PLAN Timelines** – to be considered when conducting an EIS for study area. An EIS field data becomes out of date in 5 years, due to the fact that plants grow/disappear, animals move and the Species at Risk Act Provincial bodies track when new species are threatened and add them on a list each year. The EIS process may take about 1 year due to multiple seasons required for proper species identification. Staff would recommend that this is to be considered when the Simone Family is ready to submit a planning application. The time from EIS completion to construction may take about 3 years, and the application should have current field data within it, in order to be approved and shortly thereafter constructed.	**The Simone Family Consultant Team**

9.	The attendees agreed that it would be useful if the **B2SS Final Report had a Summary of Recommendations at the end of it**, as an easy overall reference of all recommendations discussed in various preceding portions or the Final Draft Report.	**M. Fazio**

Yours truly, OR Yours sincerely,
Margaret Fazio, Senior Project Manager
mf

Lloyd, Trish

From: [redacted]
Sent: May 16, 2018 7:38 AM
To: Fazio, Margaret
Cc: Mahood, Alissa; Kiddie, Melissa; Moniruzzaman, Monir; Yong-Lee, Sally; Rybensky, [redacted]
Subject: Re: Block 2 SS - Watercourse 6.1 Meeting with the Simone Family

Hi Margaret,

I don't see a picture with the westward extension? Which one is that?
There are a total of 28 pictures in the dropbox link you provided.
Several had the same time stamp. A couple pictures are oddly stitched together.
One of those shows the length of the fence but not the ground.
Perhaps there are more photos somewhere?

https://www.dropbox.com/sh/ieabpkcpqq0e5zk/AADZu_asbqu8Qx-UU-QAKRB5a?dl=0

You can show me this afternoon.

Thanks,

[redacted]

On May 15, 2018, at 4:15 PM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:

Good morning Maria,

The pictures to me show the length of the ditch.
We can certainly discuss and explain the mapping at our meeting tomorrow.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: [redacted]
Sent: May-15-18 7:49 AM
To: Fazio, Margaret
Cc: Mahood, Alissa; Kiddie, Melissa; Moniruzzaman, Monir; Yong-Lee, Sally; Rybensky, Yvette; [redacted]
Subject: Re: Block 2 SS - Watercourse 6.1 Meeting with the Simone Family

Good morning, Margaret.

Thank you for the pictures. What I can see is that they are focussed on the clay pot area and the lands next door. What I don't see, however, is documentation of an ecological investigation for the extension of the ditch south and west.

Can it be explained to my parents (who have provided copies of City blueprints claiming that the ditch is a drainage ditch) how it is now claimed to be an elongated regulated intermittent watercourse, when at our meeting last May we discussed how it's doubtful that the ditch is even ephemeral, we were told that the watercourse would be "erased" and that the BSS would be updated to reflect that change?

Sincerely,
[redacted]

On May 14, 2018, at 9:19 AM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:

Hi [redacted]

I will send the information via FTP -- the information is too large to be sent by e-mail. Will send it asap.
Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: [redacted]
Sent: May-14-18 7:39 AM
To: Fazio, Margaret
Cc: Mahood, Alissa; Kiddie, Melissa; Moniruzzaman, Monir; Yong-Lee, Sally; Rybensky, Yvette; [redacted] Enrico Simone
Subject: Re: Block 2 SS - Watercourse 6.1 Meeting with the Simone Family

Good morning,

It would be very helpful if my parents could be provided with details of the property visits, especially June 9, 2016.

Thank you,
[redacted]

On May 11, 2018, at 4:49 PM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:

Hi,

Please note the meeting room location.

We anticipate discussions about Watercourse 6.1 – and how its represented in the BSS, in maps as well as wording in the report and to explain the legal status of The Servicing Strategies in relation to the Fruitland-Winona Secondary Plan, as per previously forwarded e-mail and my comments.

Thank you,
Margaret

<Mail Attachment.ics>

Lloyd, Trish

From: [redacted]
Sent: May 22, 2018 12:54 PM
To: Fazio, Margaret; Ash Baron; 'Dave Maunder'
Cc: Kiddie, Melissa
Subject: RE: URGENT Q for YOU: Confirm Final Draft Block 2 Servicing Strategy Final Draft Report - Comments re Watercourse 6.1

Good afternoon,

I'm not sure if any further clarification is still required at this point, but I am confirming agreement with Margaret's two bullets below. From our May 16 meeting with City staff, Councillor Johnson, and the Simone family and their agents it was (re)confirmed that watercourse 6.1 is not regulated by HCA. We also advised at this meeting that appropriate wording has been incorporated into the revised draft report (I believe sections 3.3 and 6.5) to reflect HCA's most recent comments/assessment of WC 6.1. I think to some extent the mapping already shows that WC 6.1 can be removed (i.e. concept, grading, servicing, etc. plans all show a SWM pond in location of WC 6.1). This, in conjunction with the wording that has been added may be sufficient, but if you're wanting further clarity on some of the other natural feature/constraint mapping there could be a number of ways to do this as you've noted.

Please let me know if you would like to discuss further.

Kind regards,
Mike

From: Fazio, Margaret
Sent: Thursday, May 17, 2018 12:28 PM
To: Ash Baron [redacted]; 'Dave Maunder[redacted]; [redacted]
Cc: Kiddie, Melissa <Melissa.Kiddie@hamilton.ca>
Subject: RE: URGENT Q for YOU: Confirm Final Draft Block 2 Servicing Strategy Final Draft Report - Comments re Watercourse 6.1
Importance: High

You're welcome. I'm hoping [redacted] can respond soon, so that we can move forward with the Report Update...?

Margaret

From: Ash Baron [redacted]
Sent: May-17-18 12:13 PM
To: Fazio, Margaret; 'Dave Maunder'; Stone, Mike
Cc: Kiddie, Melissa
Subject: RE: URGENT Q for YOU: Confirm Final Draft Block 2 Servicing Strategy Final Draft Report - Comments re Watercourse 6.1

Thank you for the clarification.

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: Thursday, May 17, 2018 10:43 AM
To: Ash Baron [redacted]; 'Dave Maunder' [redacted]; Stone, Mike [redacted]
Cc: Kiddie, Melissa <Melissa.Kiddie@hamilton.ca>
Subject: RE: URGENT Q for YOU: Confirm Final Draft Block 2 Servicing Strategy Final Draft Report - Comments re Watercourse 6.1

Hi Ash,

There can be a different colour/shading used to differentiate Watercourse 6.1 from other Watercourses/natural heritage on various maps. We wanted to clearly show that it is not a regulated watercourse/can be developed, so not to remove it entirely since we need to account for flow within it, but it should be shown differently, with appropriate legend.
I hope this helps?
Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: Ash Baron [redacted]
Sent: May-17-18 9:29 AM
To: Fazio, Margaret; 'Dave Maunder'; [redacted]
Cc: Kiddie, Melissa
Subject: RE: URGENT Q for YOU: Confirm Final Draft Block 2 Servicing Strategy Final Draft Report - Comments re Watercourse 6.1

Hi Margaret,

Can you please explain what is meant by the second bullet point in your email below?

Regards,
Ash

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: Thursday, May 17, 2018 9:07 AM
To: Ash Baron [redacted]; 'Dave Maunder' [redacted]; Stone, Mike [redacted]
Cc: Moniruzzaman, Monir <Monir.Moniruzzaman@hamilton.ca>; Kiddie, Melissa <Melissa.Kiddie@hamilton.ca>; Yong-Lee, Sally <Sally.Yong-Lee@hamilton.ca>; Mahood, Alissa <Alissa.Mahood@hamilton.ca>; Bastien, Jonathan [redacted] Rybensky, Yvette <Yvette.Rybensky@hamilton.ca>
Subject: URGENT Q for YOU: Confirm Final Draft Block 2 Servicing Strategy Final Draft Report - Comments re Watercourse 6.1
Importance: High

[redacted]

I will be sending the minutes of our meeting with the Simone Family separately, but understand from speaking with Dave Maunder today that he's looking for direction in writing, with HCA's staff approval re: how to represent WC 6.1 in our B2SS Report.

In the interest of time, I'd like to ask you to please confirm your agreement with the following direction for the Report:

- The recommendations section strengthened and to reiterate that Watercourse 6.1 can ultimately be developed.
- Mapping in the report should be adjusted to reflect a different status (including removal of buffers on the NHS) on the maps where it is found, both in the EIS and the Body of the Final Report. It can be a different colour or a shading, whichever works to clearly identify that it's not a regulated watercourse.

Please let us know if you have any questions or concerns about this, and/or if you would like to recommend any specific wording that would best represent the above.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: Ash Baron [redacted]
Sent: May-02-18 3:00 PM
To: Fazio, Margaret; 'Dave Maunder'
Cc: Moniruzzaman, Monir; Kiddie, Melissa; Yong-Lee, Sally; Mahood, Alissa
Subject: RE: URGENT Q for YOU: Final Draft Block 2 Servicing Strategy Report - Comments re Watercourse 6.1

Hello Margaret,

Dave and I have discussed your email and offer the following:

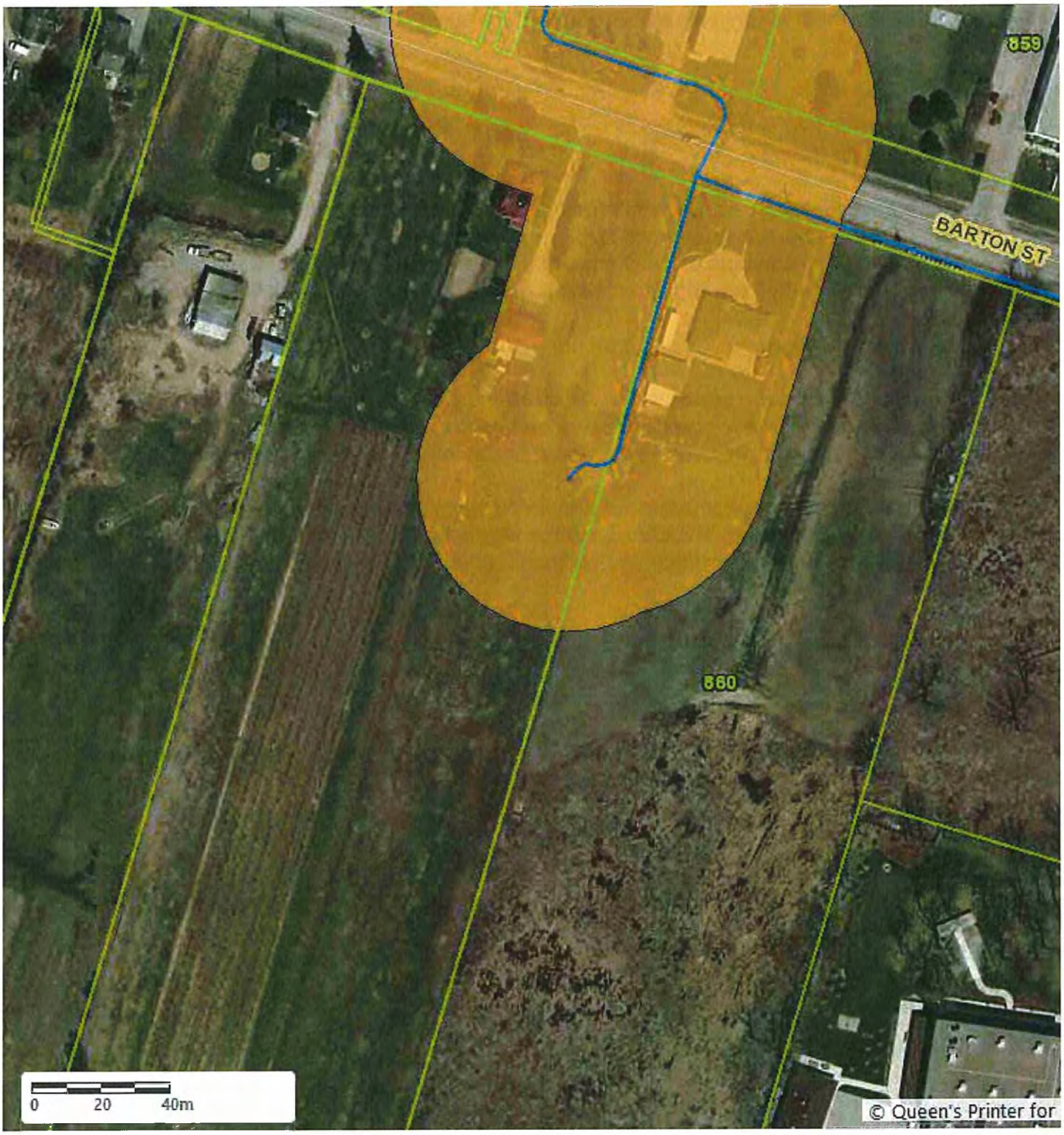
- HCA mapping currently shows that a portion of Watercourse 6.1 is regulated (see map below). Furthermore, Mike's email does not indicate that WC 6.1, wholly or in part, is not regulated. As such, development would require a permit from the HCA.
- WC 6.1 is considered contributing fish habitat. HCA has indicated that WC 6.1 would not have to be maintained as an open feature provided that the appropriate studies were completed at the development phase and the downstream drainage regime was maintained. Per the report, the scope of additional studies is to be confirmed in consultation with the City and HCA. Additional related considerations include the following:
    - Fish habitat and watercourses are considered Core Natural Areas of the City's NHS.
    - A DFO self-assessment in support of the alteration/enclosure of WC 6.1 would need to be completed at the development stage.

Kind regards,
Ash

Ash Baron, B.E.S., C.E.E.R.
Ecology Lead
Botanist, ISA Certified Arborist

Aquafor Beech Ltd.
55 Regal Road, Unit 3
Guelph, Ontario
N1K 1B6

[redacted]



From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: Wednesday, May 2, 2018 9:57 AM
To: Dave Maunder [redacted]; Ash Baron
[redacted]
Cc: Moniruzzaman, Monir <Monir.Moniruzzaman@hamilton.ca>; Kiddie, Melissa <Melissa.Kiddie@hamilton.ca>; Yong-Lee, Sally <Sally.Yong-Lee@hamilton.ca>; Mahood, Alissa <Alissa.Mahood@hamilton.ca>

Subject: URGENT Q for YOU: Final Draft Block 2 Servicing Strategy Report - Comments re Watercourse 6.1
Importance: High

Hi Dave,

FYI below from Maria Simone.

I believe that the whole issue is about Watercourse 6.1 which is perhaps not clear in the drawings, but has been addressed in the written portion.
Please see attached our previous discussions on this matter, with Mike, that the Watercourse 6.1 should be treated differently from regulated watercourses in the Report, which includes mapping.

We can see the Simone's confusion since on page 108 of the Draft Final Report we have the following written:
Approvals by the Hamilton Conservation Authority (HCA) are needed for all the watercourse road crossings and the development of lands at Watercourse 6.1. Any revisions to Watercourse 6.1 from a natural state will also need to be confirmed by the HCA.

The report maps currently don't differentiate between regulated and non-regulated water courses. Can we agree to make this change to the maps, for Watercourse 6.1 or to provide a better explanation wherever they're identified, and for the Concept Plan to explain how it's different from a regulated watercourse?

We have also been asked for a meeting with them as they understandably have concerns.
We need to agree to a course of action to address this – to express in writing and possibly avoid a need for a meeting, and to determine how we will address it in the Final version.

I am available to discuss most of the day today and I'm hoping to resolve this today – let Simones know, and will be away after this until Monday, May 7th.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: iplanning
Sent: May-01-18 9:50 AM
To: Fazio, Margaret
Subject: FW: Final Draft Block 2 Servicing Strategy Report Comments April 30 2018

From: [redacted]
Sent: April-30-18 4:26 PM
To: iplanning
Subject: Final Draft Block 2 Servicing Strategy Report Comments April 30 2018

Hello Margaret,

We've had the opportunity to access the 412 page report at the Library and online. There's much more information in this PIC than we were expecting in comparison to last June. There are several new technical details on which we do not have the expertise to comment.

Watercourse 6.1 has a variety of mappings. We have not seen evidence to support the regulated status and have differing details for site visits. We are concerned with the additional continued and inappropriate identification of an ephemeral farm swale (south and west) as a watercourse and ask that these references be removed from the report.

Sincerely,

Hamilton

Mailing Address:
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Hamilton, Ontario
Canada L8P 4Y5
www.hamilton.ca

Planning and Economic Development Department
Growth Management Division
Physical Address: 71 Main Street West, 6th Floor
Phone: 905-546-2424 Ext. 2218 Fax: 905-540-5611

MEETING MINUTES

FILE: Block 2 SS Final Draft Report Public Consultation

Meeting Purpose:
Block 2 Servicing Strategy Final Draft Report Comments and Questions from the below listed residents and land owners.

Meeting Date: May 24, 2018

Attendance:

[redacted]

Margaret Fazio - Senior Project Manager, Infrastructure Planning, Growth Management, COH
Melissa Kiddie - Natural Heritage Planner, Development Planning, Planning, COH
Monir Moniruzzaman– Senior Project Manager, Infrastructure Planning, Growth Management, COH
Yvette Rybensky – Senior Project Manager, Suburban Team, Development Planning, COH
Mike Stone – Manager of Watershed Planning Services, Hamilton Conservation Authority
Sally Yong-Lee – Manager, Infrastructure Planning, Growth Management, COH

Item No.	Discussion	Action by
1.	Introductions.	
2.	**Background of why we have the Block 2 Servicing Strategy Final Draft Report** was discussed: • The Stoney Creek Urban Boundary Expansion (SCUBE) was approved by City of Stoney Creek Council prior to amalgamation, • SCUBE Transportation Master Plan and SCUBE Subwatershed Studies (East and West) would have been completed and incorporated into the Fruitland-Winona Secondary Plan (FWSP). The FWSP was Council Approved on May 14, 2014. Having said this, it was noted that some items are still under appeal, therefore rendering the entire Plan, not yet enacted. The opportunity to submit new appeals for FWSP is no longer available. Since the document is Council approved, the Block 2 SS and other Block SSs are required to follow the FWSP. • The present land owners stated that they did not know what was taking place around them when opportunities to comment or appeal were previously available. • Staff expressed that this, although regrettable and understandable when folks lead busy lives, is not something that currently can be reversed, or amended within BSSs, i.e. land use designations, location of neighbourhood parks, natural heritage (green spaces) and determination of the significance	**M. Fazio**

	of what species of plants and animals they hold. • The present land owners now have concerns because they are concerned that our plans affect their properties and property values and wanted to ask questions/follow up on their submitted comments to better understand how exactly their properties will be affected, what are their options, etc. • Staff explained that we are now at the Block 2 Servicing Study process stage, where we are trying to make sure that developments within the BSS areas are carried out in an orderly manner. The scope of the BSS includes the incorporation of land use designations, update of natural heritage inventories (in field, via air photos, etc.), topography, and for creeks – review of the meander belt, flood plain and erosion boundaries, as well as tentative location of local roads, and servicing for drinking water, stormwater (conveyance via sewers or ditches and Ponds), as well as sanitary sewers.	
3.	[redacted] **Permission to Enter:** There were questions regarding the determination of what "Natural Heritage" determination requires, and how Mrs. Radmilla's Curcic's property was assessed since she did not give permission to enter onto her property. <u>Staff responded that this will be amended on the study map.</u> Staff responded that for properties where permission was not granted, access to adjacent properties/roads would have helped identify presence or absence of potential natural heritage – species of plants and animals which would have been of interest and significance, such that further Environmental Impact Statement (EIS) and field assessment would be recommended at this location. **Mrs. Curcic feels that most of the woodlot on her property consists of Ash trees.** Staff advised that City of Hamilton or Conservation Authority staff do not work on private properties. For tree removals on private property one must follow the Hamilton Property Standards for rules, and it would be worthwhile to contact that office to find out what those rules are. The general Property Standards Telephone Number is: <u>905-546-2782, option. 2.</u> The person at the number should be able to direct you further. If this fails, please dial 546-CITY and ask about Property Standards contact who can address tree removals. **Wetland**: [redacted] stated that this designated wetland was created when about 10 of the upstream neighbours, as well as the northerly neighbor – Jehovah's Witness Hall, started to empty their pools/drain into the creek/her property. [redacted] has complained about this practice to her neighbours as well as to City by-law enforcement staff to no avail. The last two complaints on this took place in	**M. Fazio – to inform Aquafor Beech to amend permission to enter map.** **Mrs. Curcic**

	May and Fall 2017. By – law staff did not recommend/take any action that was satisfactory and the activities that [redacted] described are continuing. Staff felt that since nothing was done/no charges were laid, and activities did not cease it is possible that the by-law staff felt that this matter was deemed a "neighborly dispute", i.e. best to be handled by the court system, not City By-law process. This portion of her property used to be a nice garden until it became flooded due to the above activities. [redacted] offered that he will review the wetland determination from the B2SS Final Draft Report on Mrs. Curcic' property and through M. Fazio will let Mrs. [redacted] know of the status of both the wetland.	**M. Stone**
4.	**Hamilton Conservation Authority (HCA) Jurisdiction:** The present land owners questioned why the HCA can determine what can and cannot be done on their own properties. [redacted] answered that the HCA does not own or work within private properties. It has a legal jurisdiction to regulate flood zones/areas, and wetland designations. It is the approving authority for permits of any works that are conducted within those areas and water bodies.	
5.	**The History of Watercourse 7.0/Ditch traversing the properties of the present land owners:** [redacted] expressed that she and her family (and that of their neighbours) owned their properties, in some cases, through generations. They don't know how a "ditch" in question appeared. Nobody asked them if they wanted it, and it's limited the use of their property, and taxation issues have ensued as a result. Staff stated that regardless of how the channel appeared, it currently conveys water, offers drainage and support fisheries downstream, and this has to be accounted for in any development in this area. Staff stated that if there is an opportunity to enhance the creek function in consideration with development on adjacent lands, City and HCA are open for discussion. If in the future an interested developer expresses concern over the presence of the above Watercourse to the land owners, staff have offered to speak to that developer to explain the intended flexibility of approach, as expressed in the Block 2SS Report.	
	Neighbourhood Park: [redacted] stated that she was told by a neighbour's consultant that the Neighbourhood Park which is planned to be on the northern portion of her property was originally in a different position in the FWSP. She would like to have it moved	

	back to that, and off of her property. Also, how was it determined that a park was located in part on her property. Staff explained that: 1. The FWSP determined the need to have a neighbourhood park in the location is determined by the densities and lay out of lands in question, to ensure that adequate park space is provided for future residents. 2. During the FWSP process there were three options that the members of public, agencies and staff had a chance to comment on, and work with. It is possible that the park locations were different, but the overall strategy of each option was different and the one chosen has the park at its current location. Moving the part is no longer an option, since this change/park location would have been appealable during the FWSP process. (NOTE: not discussed in the meeting, but worthy of note) : If the park was contained entirely on one owner's property then at the time of submission of a subdivision development application process, staff could assess if moving it would still fulfill its total function – and the same one land owner would be the one affected by it. 3. Property value is not diminished from residential, when a neighbourhood park is designated on it. It is evaluated at the time of the development application process, and fair market value is offered.	
6.	**Next Steps:** **a. Minutes from this meeting will be produced and circulated to all present by M. Fazio.** **b. The B2SS Final Report is anticipated to be presented to Planning Committee of Council with an Information Report, on September 4, 2018.** The Report will also at that time be made available for viewing on the project web page at: **https://www.hamilton.ca/city-planning/master-plans-class-eas/block-servicing-strategies-stoney-creek-and-gordon-dean-class** [redacted]**asked for notification from M. Fazio is the above date is changed.**	**M. Fazio**

Yours truly, OR Yours sincerely,
Margaret Fazio, Senior Project Manager
mf

Lloyd, Trish

From: Fazio, Margaret
Sent: May 28, 2018 10:12 AM
To: [redacted]
Subject: RE: Meeting of May 24/18

[redacted]

It was a pleasure to meet you, too, and staff understand that you all may have concerns. I will be sending the draft minutes end of this week/early next week, for your comments.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: [redacted]
Sent: May-25-18 8:43 AM
To: Fazio, Margaret
Subject: Meeting of May 24/18

Margaret,

Thank you so much for all the work & time you put in to organize our meeting yesterday. It was very informative and gave us a better understanding of things regarding our Properties, City Policies, & Procedures, Block 2 Servicing Study, options etc. Hwy 8 Neighbours consist of a diverse group of people, as you saw, however, we share the same concern to do what is best for all of us , both individually & as a group. Your efforts to connect us with the various Departments & People involved in this planning process, to answer our questions and concerns was truly & very much appreciated. It was very nice to meet you and hope we can keep in touch. Thanks again.

Regards

[redacted]

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Hamilton

FILE #: Block 2 Servicing Strategy - Public Consultation - Notice of Report Completion Comments

June 7, 2018

[redacted]

MHBC Planning, Urban Design and Landscape Architecture
200-540 Bingemans Centre Drive
Kitchener, ON
N2B 3X9

[redacted]

Re: Response to your Block 2 Servicing Strategy – MHBC Comments Letter on Draft Report from April 30, 2018

Thank you for your comments on the Block 2 Servicing Strategy Draft Final Report.

Our Response is organized such that our responses appeal below your original comments, under "Response", as applicable:

On behalf of our client, Losani Homes, we are submitting these comments in response to the Draft Block 2 Servicing Strategy (BSS) for the Fruitland-Winona Secondary Plan Area, prepared by Aquafor Beach Limited, dated April 3, 2018 and released on April 6, 2018. The following comments are specific to the properties municipally known as [redacted].

It is requested that these comments and the attached site plan be considered in preparation of any further drafts of the Block 2 Servicing Strategy. Formal applications for a zoning by-law amendment and site plan control are forthcoming in the near future.

The following is a summary of the concerns:

Planning Comments (prepared by MHBC)

1) Land Use
   - The residential land use designations reflect the Fruitland-Winona Secondary Plan, and as this reflects the decision of the OMB that was the result of coordination and settlement with City staff.

- A site plan has been prepared for the lands (attached). The densities conform to the required densities in the Secondary Plan. The site plan was subject to a pre-application on May 8, 2017; along with review of proposed zoning. Applications are intended to be submitted in the near future based on the pre-application requirements for studies.

Response: The Draft Plan of Subdivision applications are appropriate only once the Block 2 Servicing Strategy has been completed, because they have to generally conform to the Block Servicing Strategy. The Secondary Plan Land Use Schedule identifies a 'Neighbourhood Park' and through previous discussions it was intended the size of the park would be determined at the time of a development application in accordance with the City policies for parkland dedication, not during the Block Servicing Strategy process.

- The Secondary Plan Land Use Schedule identifies a "Neighbourhood Park" and through previous discussions it was intended the size of the park would be determined at the time of a development application in accordance with the City policies for parkland dedication.
  The proposed site plan shows this park in the general location, however, it is slightly further south, and includes the entire width of the property, which allows for more efficient development and does not preclude a small piece of the property from development. The size is based on the City's parkland dedication requirements.

Response: While the Block Servicing Strategy allows for some minor adjustments to the neighbourhood parks, these adjustments are intended to account for changes to density. The location, configuration and amount of land within affected land owners' lands are established through the Fruitland-Winona Secondary Plan.

2) Road Network: You expressed concerns regarding lack of access to Barton Street, and proposed access to Glover.

Response: No new accesses are being contemplated for Barton Street to ensure its viability for future Rapid Transit opportunity. Any accesses proposed on Glover Road would be considered and evaluated in the context of development application process.

3) Natural Features: you expressed that The Secondary Plan and the Official Plan do not identify any natural features or constraints on the lands. We do not agree with the mapping in the Block Servicing Strategy as it is identifies natural feature considerations. Further details are provided in this letter.

Response: It is important to note that telephone discussions occurred between City of Hamilton staff and Colville Consulting March 26, 2018 with regards to the elements that were to be included within an Environmental Impact Statement (EIS). A formal Terms of

Reference has not been submitted to the City of Hamilton to date. Further detailed comments are provided below, in the appropriate section.

Engineering Comments (Prepared by Scott Llewellyn and Associates):

1) **Section 5.2 – Stormwater Management: You have included details of a development application asking for comments.**

- A private Stormwater Management (SWM) Facility is proposed to provide adequate quantity, quality and erosion control for the proposed development, separate from the two proposed SWM facilities in the Block 2 Servicing Report.
- A Post-Development Drainage Area Plan is attached with this submission, and:
  - Catchment 201 represents the post development drainage from the entire proposed development (SWM facility provides quantity control)
  - Catchment 102 represents the external drainage from the vacant grassed lands to the south (Routed through SWM facility, deemed future development lands per Block 2 Servicing Strategy Report and therefore ultimate quantity control to be provided by future development to the south)
  - Catchment 103 represents the uncontrolled drainage from the Winona Vine Estates development (SWM facility provides quantity control)
  - Catchment 104 is the controlled drainage from the Winona Vine Estates development (Routed through SWM facility, ultimate quantity control measures provided within Winona Vine Estates)
- The private SWM facility has been designed with similar characteristics as described in the Block 2 Servicing report.

Response: The approach as shown is not consistent with the SCUBE Subwatershed study or BLOCK plan approach where facilities are shown to service larger areas. The use of a centralized facility will also avoid the SWM facilities from outleting from individual developments in series, through private properties and public drainages to private facilities. In addition, the centralized facility will minimize overall land requirements and operation and maintenance costs.

Based on the above, a centralized SWM facility # 6.1 will be required to accommodate the subject development including potential developments within the post development drainage area limit for the same as shown in the study report.

2) **Section 5.5.5 – Culverts:**

- Table 5.3 provides the upstream and downstream inverts for the existing 600mm dia. CSP culvert of 87.612m and 87.467m respectively. Based on site visits, it is determined that the inverts may potentially be lower than specified

in the report. Confirmation of the existing inverts will be completed at a later date.

Response: Final grades of all servicing elements will be confirmed at the detail design stage.

3) **Section 5.6.1 – Quality Control:**
   - The proposed private SWM facility will be designed to provide Level 1 Enhanced Quality Control for the proposed development.
   - A permanent pool (150m3/ha) and extended detention (40m3/ha) component in correspondence with Table 5.4 of Block 2 Servicing Report will be provided.
   - Additional quality control will be provided within the proposed development as part of the treatment train process.

Response: No comment as long as approach in BLOCK Plan report is followed. Please see response to Engineering comment #1.

4) **Section 5.6.2 – Quantity Control:**
   - The proposed private SWM facility will be designed to provide post to pre development quantity control for the 2-year to 100-year storm events.

Response: No comment as long as approach in BLOCK Plan report is followed. Please see response to Engineering comment #1.

5) **Section 5.6.3 – Erosion and Sediment:**
   - Erosion control will be provided by the extended detention portion of the proposed SWM facility.
   - A low flow orifice is proposed in the SWM facility to ensure the 25mm storm event has a drawdown time within the 24-48 hour range per MOE guidelines.
   - As per the Block 2 Servicing Strategy report, the erosion control requirements vary between 99 to 106 m3/ha. Based on preliminary calculations, the volume during the 25mm storm event is approximately 1100m3. Based on a drainage area of 10.14 ha (Catchments 201, & 102-104), the erosion control provided is approximately 108.5 m3/ha, and therefore the erosion control requirements are satisfactory.

Response: No comment as long as approach in BLOCK Plan report is followed. Please see response to Engineering comment #1.

6) **Section 5.9 – Water Main Servicing:**
   - A private watermain network will be routed through the proposed development and is to be designed to service the proposed development.
   - It is proposed to connect the private watermain system to the existing 400mm dia. watermain on Glover Road.

Response: The watermain layout and connections will be confirmed at the detail design stage, through form 1 approval process.

7) **Section 5.10 – Sanitary Sewer Servicing:**
   - A private sanitary network will be routed through the proposed development and is to be designed to service the proposed development.
   - It is proposed to connect the private sanitary sewer system to the existing 450mm dia. sanitary sewer on Glover Road.
   - The Block 2 Servicing Report has designated the sanitary effluent from the proposed development to outlet to the existing 300mm dia. sanitary sewer on Barton Street.
   - Although specified to outlet to the existing 300mm dia. sanitary sewer on Barton Street, it is more feasible to discharge the sanitary effluent from the proposed development to the existing 450mm dia. sanitary sewer on Glover Road due to the following:
     - The current site plan allows the sanitary sewer to be routed within the private road network, making maintenance easier on-site.
     - The existing 300mm dia. sanitary sewer on Barton Street and existing 450mm dia. sanitary sewer on Glover Road ultimately connect downstream at the intersection of the two roads (immediately northeast of the site). Therefore, since both sewers connect downstream in close proximity to the site, there will be an insignificant difference between draining to Glover Road as opposed to Barton Street.
     - Since the watermain is proposed to connect to Glover Road, it is efficient to outlet the proposed sanitary sewer to the existing 450 mm dia. sanitary sewer on Glover Road as well. Additionally, this limits the road cuts required for the servicing to Glover Road only.

Response: The sanitary layout and connections will be confirmed at the detail design stage.

Environmental Comments (prepared by Colville Consulting)

It is understood that site visits and wildlife surveys conducted from adjacent lands by Aquafor Beech Limited in support of the BSS, in combination with air photo interpretation, resulted in the identification of several natural heritage features on the [redacted] properties. The extent of these features are illustrated in Figures 3-5 and 4-1, and include a complex of wetlands, an extension of Watercourse 6.1, habitat of Bobolink and Barn Swallow and Significant Wildlife Habitat. Although not located on the property, a woodland has been identified to the south of [redacted] Street. Comments regarding the delineation of each of these features are provided below.

1) **Wetlands**

- Figures 3-5 and 4-1 indicate that a series of small wetland pockets (identified as Unevaluated Wetlands on the figures) are present on the [redacted] It is assumed that vegetation community mapping included in Figure 3-3 informed this figure. Since access was not provided to these properties, and many parts of the properties are not observable from adjacent lands, it is unclear how the extent of wetlands were delineated with the precision implied in the above noted figures and how vegetation in each of these identified wetland pockets was verified. It is requested that more details be provided in the BSS report.

Response: As stated in the report, lands not accessed as part of the study were assessed using visual assessments from adjacent lands and air photo interpretation only. Further review and refinements would be anticipated as part of the development application process via an Environmental Impact Study.

2) Watercourse 6.1

- Although we are of the opinion that the extension of Watercourse 6.1 added as part of the BSS should not be mapped as a watercourse feature, we do agree with the comment on page 19 of the BSS that states that Watercourse 6.1 is not required to be retained as an open feature when these lands go forward for development. It is our opinion that any contribution to downstream fish habitat will be maintained through the implementation of the stormwater management system.
- To reflect the above noted comment, it is recommended that relevant figures in the BSS be updated to reflect that the extension of Watercourse 6.1 is not a watercourse feature and that the illustrated buffers be removed.

Response: Agreed. The report and mapping will be updated to reflect this.

3) Habitat of Endangered and Threatened Species

- It is understood that a single male Bobolink was observed on the 860 Barton Street property during breeding bird surveys on June 4 and June 18, 2015, and that the breeding status of this species was designated as Possible. Since no nest was observed and this species was not confirmed as breeding on the property, it is our opinion and experience that it is not appropriate to assume that Bobolink were nesting on the [redacted] It is also not appropriate to assume the location of a nest as illustrated in Figures 3-5 and 4-1. It is therefore our opinion that the nest location identified on Figures 3-5 and 4-1 should be removed, along with the 300m buffer area.
- The BSS also reports that Barn Swallow nesting was confirmed in a building on the [redacted], which is north of Barton Street and outside of the Study Area, however various figures in the BSS illustrate the nest location being south of Barton Street,within the Study Area. If the nest location was observed on the [redacted], the 200m buffer area illustrated on figures should be redrawn to reflect.

- Despite the above comments, we agree with Section 3.5 of the BSS, which states that it is expected that habitat for Barn Swallow will be compensated for within the Study Area in a natural area adjacent to open parkland, while habitat for bobolink will be compensated for off-site.

Response:

a. Species at Risk (SAR) will be addressed at a subsequent planning stage as part of an Environmental Impact Study, which will further refine the presence and appropriate measures in this regard; current mapping will not be changed. The street address of the Barn Swallow (BARS) observation will be corrected in the report.

b. It should also be noted that Species at Risk Act is under the jurisdiction of the Ministry of Natural Resources and Forestry (MNRF).

4) Significant Wildlife Habitat (SWH):

- Figures 3-5 and 4-1 indicate that a portion of the 860 Barton Street property has been identified as containing Significant Wildlife Habitat, which is reported in the BSS to be habitat of Carex hirsutella. Carex hirsutella was previously documented in isolated locations on the 860 Barton Street property during a June 2012 botanical inventory. This species was again observed in June 2016 as part of the inventory work for the BSS, with observations made from lands adjacent to 860 Barton Street.
- Since observations of Carex hirsutella over the entire area designated as Significant Wildlife Habitat would not be possible from lands adjacent to 860 Barton Street, more information is required in the BSS to explain how the extent of the area designated as Significant Wildlife Habitat was determined.
- Additionally, Figures 3-5 and 4-1 appear to imply that the Mineral Meadow Marsh communities on [redacted] constitute the habitat for Carex hirsutella on this site, while Carex hirsutella is considered to be an obligate upland species. More information is required in the BSS to adequately justify the area designated as habitat for Carex hirsutella, and ultimately the extent of Significant Wildlife Habitat.

Response: We note that as the SWH on [redacted] (i.e. habitat of Carex hirsutella) was not mapped as part of previous studies, lands not accessed as part of the study were assessed using visual assessments from adjacent lands and air photo interpretation. We agree that upland areas within [redacted] may provide habitat for C. hirsutella and as such, the SWH mapping will be revised to include uplands areas.

5) Woodlands

- Figure 3-3 indicates that the treed lawn area located on the [redacted] property has been described as a Mineral Cultural Woodland, with a manicured lawn for ground cover and no understory. This treed lawn area/cultural woodland has been designated as Woodland on Figures 3-5 and 4-1. Further discussion should be included in the BSS as to why this area was described as Mineral Cultural Woodland and not a Parkland ELC

community, which may be more appropriate given the site conditions and land use of the property.

- In addition to being mapped as Woodland, Figures 3-5 and 4-1 illustrate a 10m buffer associated with this treed lawn/cultural woodland area. It is assumed that the 10m buffer illustrated was derived entirely from policies contained in the City of Hamilton Urban Official Plan and not from wildlife observations or documented functions of this area, since no breeding bird or wildlife observations were reported for this vegetation community. The BSS should contain a discussion as to why breeding bird surveys and wildlife observations were not conducted in this vegetation community to support the buffers illustrated.

Response: Lee at al. 1998 was used to describe communities surveyed in 2016. The Concept Plan has undergone many iterations and this area is now amended. It is now represented as woodlot as part of the Concept Plan identified on figure 4-4.

6) General Comments

a) Table 3-1 on Page 12 of the EIS summarizes the dates of field inventories completed as part of the natural heritage evaluation of lands in the BSS Study Aare. We note that the majority of botanical works were completed on September 30, 2015, with a subsequent scoped site visit completed on June 9, 2016. It is our opinion that the level of effort reported is not sufficient to accurately inventory and characterize the approximately 57ha of lands included in the BSS Study Area.

b) Although breeding bird surveys were conducted on June 4, June 18 and July 8, 2015, it is our opinion that the seven stations surveyed is insufficient effort to characterize avian use of lands in the Study Area. It appears that the majority of survey stations focused on cultural meadow and cultural thicket communities, while no survey effort was given to the woodland communities on properties where access was granted. Please provide rationale for excluding surveys in these areas within the EIS or BSS.

c) Figures 3-5 and 4-1 attempt to depict limitations and opportunities to development. It is our opinion that these figures were generated using insufficient field observations and does not accurately reflect the current condition of properties in the Study Area. It is recommended that a disclaimer be added to the BSS to reflect possible inaccuracies and help minimize future prejudices during implementation of the BSS.

d) Figures 3-5 and 4-1 also appear to be duplicates and one should be removed from the BSS to avoid potential confusion.

e) Section 4.2.1 states that the NHS in the BSS includes buffers as defined by City and HCA policy. Since field surveys conducted as part of the BSS were not considered in the establishment of buffers depicted in various figures in the BSS, the report should more clearly state that buffer widths are to be determined through site specific EIS's and not presume the buffers illustrated are appropriate.

f) Figure 3-3 in the BSS illustrates the extent of vegetation communities in the Study Area. The legend on this figure indicates that vegetation communities on the [redacted] Street properties are a complex of Mineral Cultural Meadow and Mineral Meadow Marsh, however the polygons depicted on the figure are not labeled to allow differentiation between these vegetation communities. Figure 3-3 should be modified to provide clarity.

g) It is our opinion that it is not possible to observe all portions of the property from adjacent lands alone and that the extent of wetland features illustrated in the above noted figures do not accurately reflect vegetation communities on the [redacted] properties.

Responses: The level of survey effort is still in discussion/in consultation with the City consultant team, City of Hamilton Natural Heritage staff and the Hamilton Conservation Authority (HCA). To address data gaps, further study/studies (e.g. EIS) will be required as part of subsequent planning stages. Minimum Vegetation Protection Zone (VPZ) widths can also be investigated at that time.
Figure 3-3 can be modified to provide clarity on the location of wetlands; refer to Figure 13-1 of the EIS. Again, lands not accessed as part of the study were assessed using visual assessments from adjacent lands and air photo interpretation.

<u>Hydrogeological Comments (prepared by Terra-Dynamics Consulting)</u>

1) Hydrogeological / Hydrologic Comments

- Section 2.2, of the SCUBE West Subwatershed Study describes the groundwater resources describes the relatively low groundwater recharge potential of the Block 2 area. The reason for this is that the Block 2 area is characterized by a thin layer of the low permeability Halton clay till overlying a thick sequence of low permeability Queenston Shale. Section 5.3 Block 2 FSR – Low Impact Development Source Controls (p. 38), states that "the subject study area has a volumetric infiltration target of 1mm over the drainage area" and then lists a variety of Low Impact Development (LID) techniques for the Block 2 area to promote infiltration into the subsurface.
- A 1mm infiltration target can be considered an insignificant amount of groundwater recharge and the proposed LID techniques presented in Section 5.3 and Table 5.1 will likely have an insignificant net effect of promoting groundwater recharge. The application of LID techniques in this low permeability hydrogeological setting could result in ponded and potentially stagnant water at surface and hence the expenditures for LID- type infrastructure are likely not warranted.

Response: As noted in Section 2.2 the Low Impact Development (LID) measures are required to meet water balance requirements. Section 6.3 refers to the Hamilton Comprehensive Development Guidelines and Financial Policies Manual (2016) that outlines a number of LID measures that can be implemented without causing ponding.

Please find the following documents enclosed in support of our comments:

1) Site Plan prepared by MHBC Planning, dated April 27, 2018
2) Overlay of Concept Plan and Block 2 Servicing Strategy Concept Plan, prepared by MHBC Planning
3) Drainage Area Sketch, prepared by Scott Llewellyn and Associates
4) Existing Monitoring Well Location, prepared by Terra-Dynamics Consulting

We understand that comments are being received until April 30, 2018 and we would be pleased to meet with City staff and our team of consultants to review these comments and work through the details related to servicing the lands such that this information can be included in the final report.

Response: All attachments have been received. Please let us know if you have any questions regarding any of the above responses.

Yours truly,

Margaret Fazio, B.Sc., EP, MCIP, RPP
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Dave Maunder,
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Ash Baron,
Ecology Lead, Botanist, ISA Certified Arborist, Aquafor Beech Ltd.

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I15

Notice to Landowners and Residents

May 2015

May 7th, 2015

TO ALL LANDOWNERS AND RESIDENTS:

Re: Block 2 Fruitland-Winona Block Servicing Strategy – Field Work

The City of Hamilton has retained the consulting firm of Aquafor Beech Limited to prepare the Block 2 Fruitland-Winona Block Servicing Strategy. Block 2 refers to the lands bounded by the Barton Street to the North, Glover Road to the east, Highway No 8 to the south and Watercourse No. 6 to the west. Aquafor Beech Limited will be coordinating the work required for the study.

The first phase of the study will finalize the environmental constraints and opportunities of the study area through the completion of biophysical inventories and engineering assessments. This will aid in defining the lands available for urban development.

You are receiving this letter because we have not received a response to the City's initial request sent on April 21st 2015. Staff from Aquafor Beech Limited may need access to your property in order to conduct biophysical surveys. The primary purpose of our on-site visits will be to characterize vegetation communities and document wildlife. Staff will enter the property on foot. It is a very non-invasive assessment and no property alteration shall occur. The field investigations will be conducted periodically from May to November in 2015.

The current study is being financed by the City of Hamilton. If staff are not permitted to access your property as part of this study, the cost of future biophysical studies related to development land use planning on your property will be the responsibility of the landowner, as applicable. It is also possible that delays in study completion could result in delays in the land use planning process.

It would be greatly appreciated if you would permit access to your property by staff from Aquafor Beech Limited. Should you have any questions, feel free to contact the undersigned or City of Hamilton staff at (905) 546-2424 ext. 6412 or by email at Guangli.Zhang@Hamilton.ca.

Sincerely,

AQUAFOR BEECH LIMITED

Ash Baron, B.E.S., C.E.E.R.R.
Ecology Lead
[redacted]

*We kindly request you please sign and return the following form to Aquafor Beech Ltd. by **May 25th, 2015**. However, we will also accept responses via email or telephone*

Thank you for your cooperation.

Sincerely,

AQUAFOR BEECH LIMITED

Ash Baron

Ash Baron, B.E.S., C.E.E.R.R.
Ecology Lead
[redacted]

I, _____ (print name), being the owner(s) of the

land at (Address)_____
hereby grant permission to Aquafor Beech Limited staff and its sub-consultants, as well as the City of Hamilton and Hamilton Conservation Authority representatives, to access my property to conduct biophysical surveys.

_____ _____

Signature Date

I, _____ (print name), being the owner(s) of the

land at (Address)_____
do not grant permission to Aquafor Beech Limited staff and its sub-consultants, as well as the City of Hamilton and Hamilton Conservation Authority representatives, to access my property to conduct biophysical surveys.

_____ _____

Signature Date

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix I16

General Correspondences

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: May-12-17 4:36 PM
To: [redacted]
Subject: Agency mailing list for Combined PIC for Blocks 1, 2 & 3 and Gordon Dean Ave and REQUEST FOR REVIEW and update of FIRST NATIONS INFO
Attachments: PIC no 1 - Block 1and 2 and GD EA - April 4 2017 P.xls
Importance: High

Hi,

As promised, I know only [redacted] asked, but I thought I'd re-send it to all – all of our reports will need this in them.
Please find the agency list attached.

[redacted] – for First Nations, will you be making the follow up calls again – I know we had some updates on the list from Barton Street and Fifty Road EA – some phone numbers didn't work – do you have access to updated information on this so we can update our list?

Could you please share your record from the previous PIC, and after this one as well, for our collective records??

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: Margaret.Fazio@hamilton.ca

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

Last Name	First Name	Title	Job Title	Organization	Street Address	City and Province	Postal Code	Contact Information	Link to Documents/ Webpages	Special Notes and Instructions
City of Hamilton Staff **TO BE SENT ELECTRONIC COPY OF MAILOUT***										

Sir/Madam Consultation Unit Ministry of Indigenous

[redacted]

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From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: March-29-18 4:12 PM
To: [redacted]
Cc: [redacted] Dave Maunder ([redacted]; [redacted] Ash Baron; Yong-Lee, Sally; Lloyd, Trish; Moniruzzaman, Monir
Subject: Block 2 Servicing Strategy FINAL Notice - Submission to newspaper
Attachments: FINAL Notice of Completion of Draft Report for Block 2 SS in FWSP.pdf

[redacted]

Please use the above copy as the notice to be placed with Stoney Creek Community News. Confirming that the date of publication is April 6th. – I have amended the Notice to reflect further received comments.
I will send the Project account information separately.

[redacted]The Notice will be delivered to folks living in the area next week. Could you please place it on the project website on April 5th? Once I receive a copy of the report I will also send it, for placing on April 5th/6th.

[redacted]The Notice is now ready to print. If we can have the letters by April 6th, that would be ideal☺

[redacted]t would be appreciated if you could please place the link from the notice on Twitter so that folks can access the electronic webpage, as well as the Notice – on April 6th.

[redacted]I will be away from the office on April 6th. Could you keep a copy of the above newspaper for me, for when I return – April 9th?
Please and Thank you.

Many Thanks to all for your support!
Margaret

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

a

From: Fazio, Margaret
Sent: March-29-18 1:31 PM
To: [redacted]
Subject: Block 2 Notice - Submission to newspaper

[redacted]

Please find the Notice attached for placement in Stoney Creek News. We will only need to advertise it one time – April 5th, please.

Thank you,

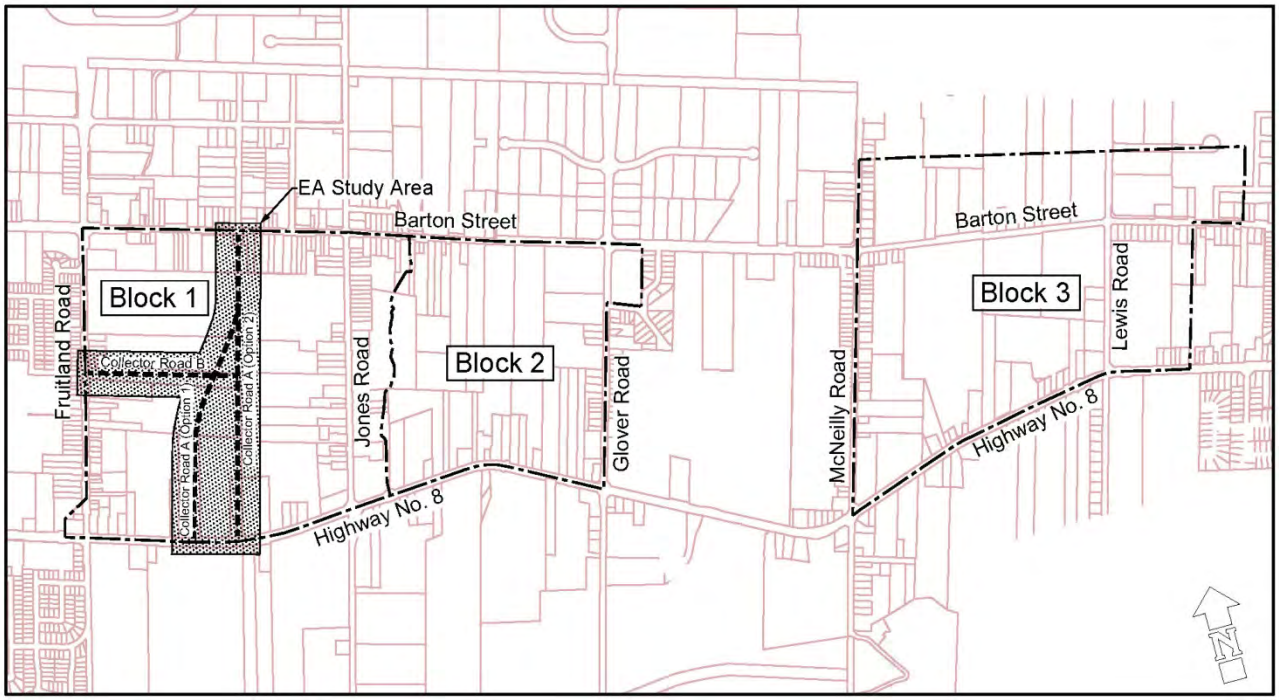
Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: Margaret.Fazio@hamilton.ca

Notice of Draft Study Report Completion
Block 2 Servicing Strategy

THE STUDY

The City of Hamilton has completed the Block Servicing Strategy for **Block 2** outlined in the Fruitland-Winona Secondary Plan map below. The Servicing Strategy includes the following components: layout of stormwater ponds, water and wastewater services and local road networks, and updated natural heritage features. Block 2 Servicing Strategy is led by the City of Hamilton, and Blocks 1 and 3 are led by land owners.

STUDIES' MAP



THE PROCESS

The study follows the general requirements of a Schedule C project as outlined in the Municipal Engineers Association Municipal Class Environmental Assessment (EA) document (2000, as amended in 2007, 2011 & 2015), but does not include a public appeal component.

THE FINAL DRAFT BLOCK 2 SERVICING STRATEGY REPORT is now available for REVIEW and COMMENT.

START DATE: Monday, April 9, 2018 ; END DATE: Monday, April 30, 2018
Location of Hard Copies for viewing:

1. **Stoney Creek Municipal Centre, 777 Highway 8, Stoney Creek Library**
2. **City Hall – City Clerk's Office, 71 Main Street West, City of Hamilton**
3. **City Hall – 6th Flood Front Desk, 71 Main Street West, City of Hamilton**

Location for Electronic Version of the Report will be available via the city's website: *Hamilton.ca/blockservicingstrategies*

If you require special accommodations to view the REPORT, please contact the City's Project Manager below.

PUBLIC COMMENTS INVITED

Please provide any comments or questions to the below study contact **by April 30, 2018**. Comments received after this date will not be considered or incorporated into the FINAL REPORT.

City of Hamilton
Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager
City of Hamilton
71 Main Street West, 6th Floor,
Hamilton, ON L8P 4Y5
Tel: 905.546.2424 Ext.2218
Fax: 905.540.5611
Email: *iplanning@hamilton.ca*

Information will be collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments will become part of the public record.

This notice published in Stoney Creek News on **April 6, 2018** and on the City of Hamilton Twitter account.

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: April-03-18 4:45 PM
To: [redacted]
Cc: Dave Maunder ([redacted]), Moniruzzaman, Monir; Yong-Lee, Sally [redacted]
Subject: Block 2 SS - Notice of Draft Report available for Comment
Attachments: Block 2 SS April 6 Notice of Draft Report Completion.pdf

Hi [redacted]

Please find attached the Notice of the Draft Block 2 SS Report, as discussed.
Not all of COH comments have been accommodated within this version at this time, due to time constraints.

The Notice is being mailed out to all land owners within Block 2, and will be placed in Stoney Creek Community News on April 6th, as well on the City Twitter Account. The report will be uploaded on the City website at the start of the review period.

We look forward to your comments.

Many Thanks,

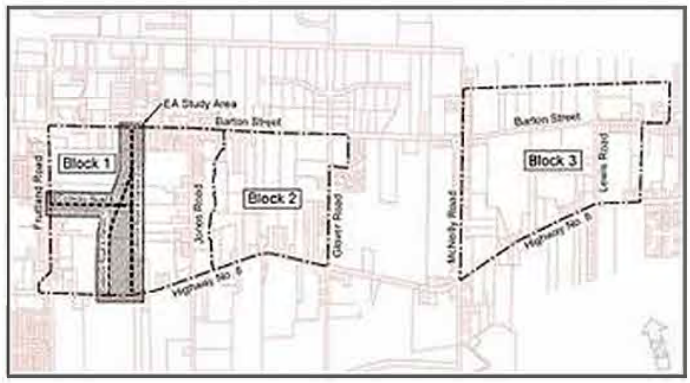
Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

Notice of Draft Study Report Completion
Block 2 Servicing Strategy

THE STUDY

The City of Hamilton has completed the Block Servicing Strategy for **Block 2** outlined in the Fruitland-Winona Secondary Plan map below. The Servicing Strategy includes the following components: layout of stormwater ponds, water and wastewater services and local road networks, and updated natural heritage features. Block 2 Servicing Strategy is led by the City of Hamilton, and Blocks 1 and 3 are led by land owners.

STUDIES' MAP



THE PROCESS

The study follows the general requirements of a Schedule C project as outlined in the Municipal Engineers Association Municipal Class Environmental Assessment (EA) document (2000, as amended in 2007, 2011 & 2015), but does not include a public appeal component.

THE FINAL DRAFT BLOCK 2 SERVICING STRATEGY REPORT is now available for REVIEW and COMMENT.

START DATE: Monday, April 9, 2018; END DATE: Monday, April 30, 2018
Hard Copies of the Report will be available for review at the following locations:

- **Stoney Creek Municipal Service Centre - Library, at 777 Highway 8, Stoney Creek**
- **City Hall - 71 Main Street West - City Clerk's Office - 1st Floor**
- **City Hall - 71 Main Street West - 6th Floor Front Desk.**

The Electronic Version of the Report will be available for review via the City's website: Hamilton.ca/blockservicingstrategies

If you require special accommodations to view the REPORT, please contact the City's Project Manager below.

PUBLIC COMMENTS INVITED

Please provide any comments or questions to the below study contact **by April 30, 2018.** Comments received after this date will not be considered or incorporated into the FINAL REPORT.

City of Hamilton
Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager, Infrastructure Planning
City of Hamilton
71 Main Street West, 6th Floor,
Hamilton, ON L8P 4Y5
Tel: 905.546.2424 Ext.2218
Fax: 905.540.5611
Email: iplanning@hamilton.ca

Information will be collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments will become part of the public record.

This notice published in Stoney Creek News on **April 6, 2018** and on the City of Hamilton Twitter account.

Hamilton

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: May-24-17 10:10 AM
To: [redacted]
Cc: Yong-Lee, Sally; Moniruzzaman, Monir; [redacted] Mahood, Alissa; Kiddie, Melissa; Dave Maunder [redacted]
Subject: Block 1, 2 & 3 Servicing Strategies PIC Notice - June 8, 2017
Attachments: FINAL Notice Block 1 2 3 - Combined PIC June 8 2017 - V 5.pdf

Hello Councillor [redacted]

As promised, please find attached the FINAL notice for the above Public Information Centre for all three Block Servicing Strategies (1, 2 & 3).

The Notice distribution will be as follows:

1. Published in the Stoney Creek News – March 26th and June 2nd, 2017,
2. Placed on project web page (under public consultation tab), and Public Engagement web page, and Tweeted.
3. City staff are mailing out hard copy notices this week to all the Blocks 2 land owners, as well as the appropriate Agencies.
4. Mail outs for Blocks 1 & 3 are being sent out this week by the consulting teams for those studies/areas.

Please note that this is the last notice planned for/required for these studies.
There is also no appeal opportunity to these studies, since they're a technical exercise only, and follows land use plans based on the Fruitland-Winona Secondary Plan.

An Information Report is being scheduled to go to Planning Committee in the Fall of this year when all three studies have been completed (Technical Reports for all three Blocks have been vetted through and met City approval).

Please advise if you have any questions.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

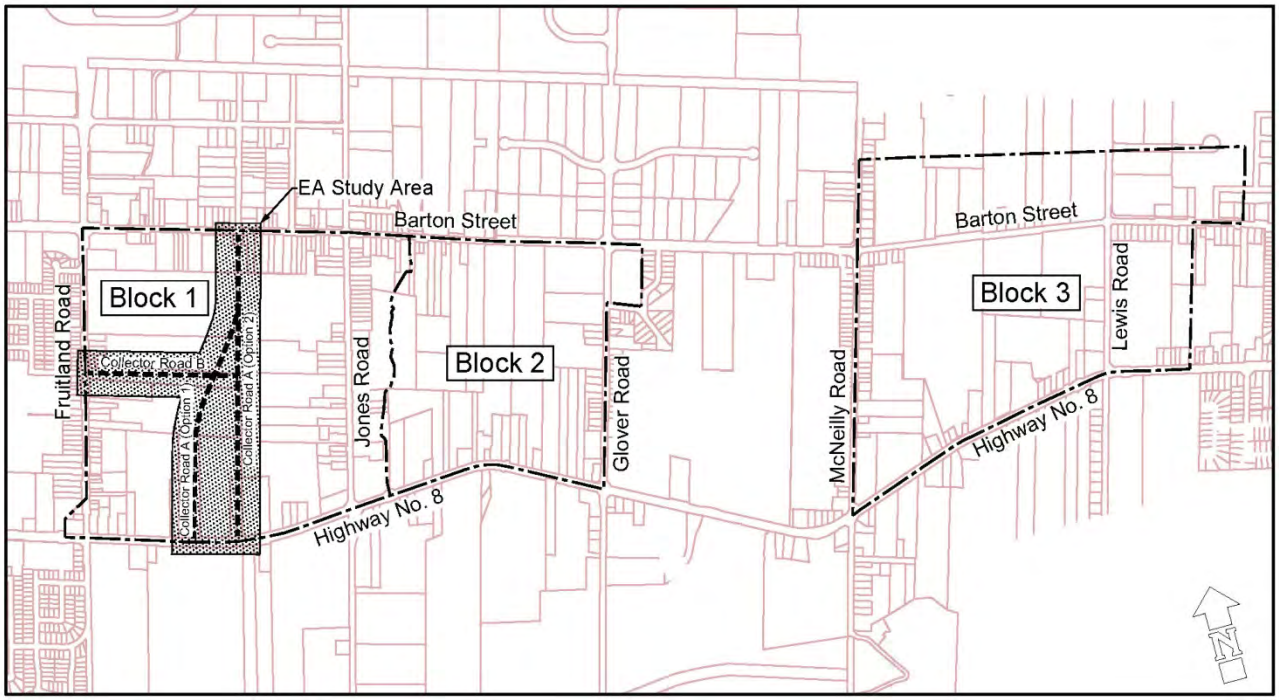
www.hamilton.ca/canada150

Notice of Joint Public Information Centre (PIC)
Block Servicing Strategy Block 1 and 2 (No.2) and Block Servicing Strategy Block 3 (No. 1)

THE STUDIES

The City of Hamilton and various land owners are proceeding with the Block Servicing Strategies for Block 1, 2 and 3 which are within the areas outlined by the Fruitland-Winona Secondary Plan*. The Servicing Studies include the following components: layout of stormwater ponds, water and wastewater services and local road networks, within the updated natural heritage constraints. Block 2 Servicing Strategy is being conducted by the City of Hamilton, and Blocks 1 and 3 are being conducted by land owners. PIC 1 for Block 1 and Block 2 was held on April 4th, 2017.

STUDIES' MAP



THE PROCESS

The Block Servicing Strategies are being carried out in accordance with the requirements of a Schedule C project as outlined in the Municipal Engineers Association Municipal Class Environmental Assessment (EA) document (2000, as amended in 2007, 2011 & 2015). This is an approved process under the Ontario Environmental Assessment Act.

While the Block Servicing Strategies follow the Class EA public consultation process; this process does not include a public appeal option.

PUBLIC INFORMATION CENTRE (PIC) No. 2 for Blocks 1, 2 Servicing Strategies and PIC No. 1 for Block 3.

Public consultation is an important part of the Block Servicing Strategies. This PIC will provide an opportunity for the public to review the Block Servicing DRAFT Concept Plans.

Date: Thursday, June 8, 2017
Time: 3:30PM to 5PM and 6PM to 7:30PM (Open House Format)
Location: Stoney Creek Municipal Centre, 777 Highway 8, Stoney Creek – Main Level

If you require special accommodations to attend this PIC, please contact the City's Project Manager by **June 2, 2017**. If you are unable to attend this PIC, information will be available on the city's website at: *Hamilton.ca/blockservicingstrategies*

PUBLIC COMMENTS INVITED

Please provide any comments or questions to the appropriate study contacts **by June 22, 2017**.

Amec Foster Wheeler (Block 1) Angelo Cutaia, P.Eng. Consultant Project Manager 3215 North Service Road, Burlington, ON L7N 3G2 **Tel:** 905.335.2353 **Fax:** 905.335.1414 **Email:** *Angelo.Cutaia@amecfw.com*
City of Hamilton (Block 2) Margaret Fazio, B.Sc., EP, MCIP, RPP Senior Project Manager City of Hamilton 71 Main Street West, 6th Floor, Hamilton, ON L8P 4Y5 **Tel:** 905.546.2424 Ext.2218 **Fax:** 905.540.5611 **Email:** *iplanning@hamilton.ca*
Urbantech West (Block 3) Rob Merwin, P.Eng. Urbantech® West, A Division of Leighton-Zec West Ltd. 2030 Bristol Circle, Suite 201 Oakville,. ON L6H 0H2 **TEL**: 905-829-8818 Ext.102 **Mob:**416.997.0101 **FAX:** 905.829.4804 **Email**:*rmerwin@urbantech.com*

Information will be collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments will become part of the public record.

This notice published in Stoney Creek News on **May 25, 2017 and June 1, 2017**, and on the City of Hamilton Twitter account.

*****(please see studies map)

Thursday, June 8, 2017

Block Servicing Strategies 1 and 2 PIC No. 2, and Block 3 Servicing Strategy PIC No. 1
Comment Sheet

Please take a moment to provide us with input regarding the three above mentioned projects. This questionnaire is your opportunity to provide your comments on all three. ***Given that your views are important to us, please kindly complete this questionnaire (please print) and deposit it in the "Comment Sheets" box provided or by mail, email/scan or fax to the address provided on the fourth page. Thank you.***

1. My relation to this Project is: (Please check all that apply)

[✓] resident within the project limit

[✓] land or business owner within the project limit

[✓] user of roads or lands within the study areas but not within project limit

[ ] member of an interest group (Please specify) _____

[ ] member of the general public not within the project limit

[ ] other (Please specify) _____

2. My interest is: (Please check all that apply?

[✓] property/land impacts

[✓] stormwater management

[ ] pedestrian / bicycle safety

[✓] traffic volume

[✓] traffic signals

[ ] other:_____

[ ] recreational

[✓] natural environment and creeks

[✓] speed limits

[✓] general interest

3. Please provide your comments as they relate to the Block 1 Concept Plans presented here today.

4. Please provide your comments as they relate to the Block 2 details provided here today.

Personal information collected at public meetings or submitted in writing is collected under the authority of the *Municipal Act, 2001*, and will be used by members of the City of Hamilton. The written submissions including names and contact information and the report of the public meeting will be used for the purposes of assessing number of attendees, areas of interest, and contact information.

5. Please provide your comments as they relate to the Block 3 details provided here today.

CONCERN IS CONTINUAL FLOODING CONDITIONS.

6. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [✓] Notice in the mail [ ] Other: _____

7. Please indicate your satisfaction with the following:

	Satisfied (Y/N)	If not satisfied, please specify your preference below
Location of Meeting	Y	
Time of Meeting	Y	
Day of Week	Y	
Accessibility of the Location	Y	

8. On a scale of 1 to 5, where "1" is "very" and "5" is "not at all", please rate the following by circling the appropriate number:

a) How informative were the display materials? (please circle)

Very		Somewhat		Not at all
1	2	3	4	5

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very		Somewhat		Not at all
1	2	3	4	5

9. Were all your questions answered satisfactorily?

[✓] Yes [ ] No [ ] If No, can someone contact you? _____

10. Please provide any additional comments.

11. Do you require a written response to your comments?

[ ] Yes [✓] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments **(please print clearly):**

Name:	**Telephone:**
Address:	
City/Province/Postal Code:	**Email:**

As noted, please mail, scan/email, or fax your completed questionnaire by June 22, 2017 to:

Amec Foster Wheeler (Block 1) **Angelo Cutaia, P.Eng.** **Consultant Project Manager** **3215 North Service Road,** **Burlington, ON L7N 3G2** **Tel: 905.335.2353** **Fax: 905.335.1414** **Email: *Angelo.Cutaia@amecfw.com***
City of Hamilton (Block 2) **Margaret Fazio, B.Sc., EP, MCIP, RPP** **Senior Project Manager** **City of Hamilton** **71 Main Street West, 6th Floor,** **Hamilton, ON L8P 4Y5** **Tel: 905.546.2424 Ext.2218** **Fax: 905.540.5611** **Email: *iplanning@hamilton.ca***
Urbantech West (Block 3) **Rob Merwin, P.Eng.** **Urbantech® West,** **A Division of Leighton-Zec West Ltd.** **2030 Bristol Circle, Suite 201** **Oakville,. ON L6H 0H2** **TEL: 905-829-8818 Ext.102** **Mob:416.997.0101 FAX: 905.829.4804** **Email:*rmerwin@urbantech.com***

Thank you for your time and participation!

Personal information collected at public meetings or submitted in writing is collected under the authority of the *Municipal Act, 2001*, and will be used by members of the City of Hamilton. The written submissions including names and contact information and the report of the public meeting will be used for the purposes of assessing number of attendees, areas of interest, and contact information.

Hamilton

Thursday, June 8, 2017

Block Servicing Strategies 1 and 2 PIC No. 2, and Block 3 Servicing Strategy PIC No. 1
Comment Sheet

Please take a moment to provide us with input regarding the three above mentioned projects. This questionnaire is your opportunity to provide your comments on all three. ***Given that your views are important to us, please kindly complete this questionnaire (please print) and deposit it in the "Comment Sheets" box provided or by mail, email/scan or fax to the address provided on the fourth page. Thank you.***

1. My relation to this Project is: (Please check all that apply)

[X] resident within the project limit

[ ] land or business owner within the project limit

[ ] user of roads or lands within the study areas but not within project limit

[ ] member of an interest group (Please specify) _____

[ ] member of the general public not within the project limit

[ ] other (Please specify) _____

2. My interest is: (Please check all that apply?

[ ] property/land impacts

[ ] stormwater management

[ ] pedestrian / bicycle safety

[ ] traffic volume

[X] traffic signals

[ ] recreational

[ ] natural environment and creeks

[ ] speed limits

[ ] general interest

[ ] other:_____

3. Please provide your comments as they relate to the Block 1 Concept Plans presented here today. On June 5/17 - at 6^{00}pm (approx). Truck did not stop at stop signs on Barton + McNeilly Corners. I was walking my 160 lb. dog + he + I were already in the intersection walking north. we were almost to the middle line + truck doing about 70 km travelling east on Barton missed us by approx 2 feet. Too often traffic do not stop or barely slow down. + they ignore Stop signs. This type of thing happens at least 2x a week

over

Personal information collected at public meetings or submitted in writing is collected under the authority of the *Municipal Act, 2001*, and will be used by members of the City of Hamilton. The written submissions including names and contact information and the report of the public meeting will be used for the purposes of assessing number of attendees, areas of interest, and contact information.

Please be aware that I do not relish being in hospital with serious injuries due to traffic violators. We need a traffic light at this intersection. There are too many kids/animals/ families that are in this area to cross the road.

4. Please provide your comments as they relate to the Block 2 details provided here today.

5. Please provide your comments as they relate to the Block 3 details provided here today.

6. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [ ] Notice in the mail [ ] Other: _____

7. Please indicate your satisfaction with the following:

	Satisfied (Y/N)	If not satisfied, please specify your preference below
Location of Meeting		
Time of Meeting		
Day of Week		

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Accessibility of the Location

8. On a scale of 1 to 5, where "1" is "very" and "5" is "not at all", please rate the following by circling the appropriate number:

a) How informative were the display materials? (please circle)

Very		Somewhat		Not at all
1	**2**	**3**	**4**	**5**

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very		Somewhat		Not at all
1	**2**	**3**	**4**	**5**

9. Were all your questions answered satisfactorily?

[ ] Yes [ ] No [ ] If No, can someone contact you? _____

10. Please provide any additional comments.

_____

_____

_____

_____

11. Do you require a written response to your comments?

[✓] Yes [ ] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments (please print clearly):

[redacted] **Telephone:**

Personal information collected at public meetings or submitted in writing is collected under the authority of the *Municipal Act, 2001,* and will be used by members of the City of Hamilton. The written submissions including names and contact information and the report of the public meeting will be used for the purposes of assessing number of attendees, areas of interest, and contact information.

Address:	
City/Province/Postal Code:	Email:

As noted, please mail, scan/email, or fax your completed questionnaire by June 22, 2017 to:

Amec Foster Wheeler (Block 1) **Angelo Cutaia, P.Eng.** **Consultant Project Manager** **3215 North Service Road,** **Burlington, ON L7N 3G2** **Tel: 905.335.2353** **Fax: 905.335.1414** **Email: *Angelo.Cutaia@amecfw.com***
City of Hamilton (Block 2) **Margaret Fazio, B.Sc., EP, MCIP, RPP** **Senior Project Manager** **City of Hamilton** **71 Main Street West, 6th Floor,** **Hamilton, ON L8P 4Y5** **Tel: 905.546.2424 Ext.2218** **Fax: 905.540.5611** **Email: *iplanning@hamilton.ca***
Urbantech West (Block 3) **Rob Merwin, P.Eng.** **Urbantech® West,** **A Division of Leighton-Zec West Ltd.** **2030 Bristol Circle, Suite 201** **Oakville,. ON L6H 0H2** **TEL: 905-829-8818 Ext.102** **Mob:416.997.0101 FAX: 905.829.4804** **Email:*rmerwin@urbantech.com***

Thank you for your time and participation!

Personal information collected at public meetings or submitted in writing is collected under the authority of the *Municipal Act, 2001*, and will be used by members of the City of Hamilton. The written submissions including names and contact information and the report of the public meeting will be used for the purposes of assessing number of attendees, areas of interest, and contact information.

Thursday, June 8, 2017

Block Servicing Strategies 1 and 2 PIC No. 2, and Block 3 Servicing Strategy PIC No. 1
Comment Sheet

Please take a moment to provide us with input regarding the three above mentioned projects. This questionnaire is your opportunity to provide your comments on all three. ***Given that your views are important to us, please kindly complete this questionnaire (please print) and deposit it in the "Comment Sheets" box provided or by mail, email/scan or fax to the address provided on the fourth page. Thank you.***

1. My relation to this Project is: (Please check all that apply)

[✓] resident within the project limit

[ ] land or business owner within the project limit

[ ] user of roads or lands within the study areas but not within project limit

[ ] member of an interest group (Please specify) _____

[ ] member of the general public not within the project limit

[ ] other (Please specify) _____

2. My interest is: (Please check all that apply?

[✓] property/land impacts

[ ] stormwater management

[ ] pedestrian / bicycle safety

[✓] traffic volume

[ ] traffic signals

[ ] other:_____

[ ] recreational

[ ] natural environment and creeks

[ ] speed limits

[ ] general interest

3. Please provide your comments as they relate to the Block 1 Concept Plans presented here today.

4. Please provide your comments as they relate to the Block 2 details provided here today.

5. Please provide your comments as they relate to the Block 3 details provided here today.

I am concerned about the amount of housing coming. the properties are so small kids play in front yard and on Road in more danger.

6. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [✓] Notice in the mail [ ] Other: _____

7. Please indicate your satisfaction with the following:

	Satisfied (Y/N)	If not satisfied, please specify your preference below
Location of Meeting	Yes	
Time of Meeting	Yes	
Day of Week	Yes	
Accessibility of the Location	Yes	

8. On a scale of 1 to 5, where "1" is "very" and "5" is "not at all", please rate the following by circling the appropriate number:

a) How informative were the display materials? (please circle)

Very 1 2 Somewhat 3 4 Not at all 5

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very 1 2 Somewhat 3 4 Not at all 5

9. Were all your questions answered satisfactorily?

[✓] Yes [ ] No [ ] If No, can someone contact you? _____

10. Please provide any additional comments.

I think the city need to consider demanding larger lots a little breathing space is good for all.

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11. Do you require a written response to your comments?

[ ] Yes [ ] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments **(please print clearly):**

Name:	**Telephone:**
Address:	
City/Province/Postal Code:	**Email:**

As noted, please mail, scan/email, or fax your completed questionnaire by June 22, 2017 to:

Amec Foster Wheeler (Block 1) **Angelo Cutaia, P.Eng.** **Consultant Project Manager** **3215 North Service Road,** **Burlington, ON L7N 3G2** **Tel: 905.335.2353** **Fax: 905.335.1414** **Email: *Angelo.Cutaia@amecfw.com***
City of Hamilton (Block 2) **Margaret Fazio, B.Sc., EP, MCIP, RPP** **Senior Project Manager** **City of Hamilton** **71 Main Street West, 6th Floor,** **Hamilton, ON L8P 4Y5** **Tel: 905.546.2424 Ext.2218** **Fax: 905.540.5611** **Email: *iplanning@hamilton.ca***
Urbantech West (Block 3) **Rob Merwin, P.Eng.** **Urbantech® West,** **A Division of Leighton-Zec West Ltd.** **2030 Bristol Circle, Suite 201** **Oakville,. ON L6H 0H2** **TEL: 905-829-8818 Ext.102** **Mob:416.997.0101 FAX: 905.829.4804** **Email:*rmerwin@urbantech.com***

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Thursday, June 8, 2017

Block Servicing Strategies 1 and 2 PIC No. 2, and Block 3 Servicing Strategy PIC No. 1
Comment Sheet

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1. My relation to this Project is: (Please check all that apply)

[✓] resident within the project limit

[ ] land or business owner within the project limit

[ ] user of roads or lands within the study areas but not within project limit

[ ] member of an interest group (Please specify) _____

[ ] member of the general public not within the project limit

[ ] other (Please specify) _____

2. My interest is: (Please check all that apply?

[✓] property/land impacts

[ ] stormwater management

[ ] pedestrian / bicycle safety

[✓] traffic volume

[✓] traffic signals

[ ] other:_____

[ ] recreational

[ ] natural environment and creeks

[✓] speed limits

[✓] general interest

3. Please provide your comments as they relate to the Block 1 Concept Plans presented here today.

4. Please provide your comments as they relate to the Block 2 details provided here today.

5. Please provide your comments as they relate to the Block 3 details provided here today.

WASTE Sewage - ? When

6. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [✓] Notice in the mail [ ] Other: _____

7. Please indicate your satisfaction with the following:

	Satisfied (Y/N)	If not satisfied, please specify your preference below
Location of Meeting	Y	
Time of Meeting	Y	
Day of Week	Y	
Accessibility of the Location	Y	

8. On a scale of 1 to 5, where "1" is "very" and "5" is "not at all", please rate the following by circling the appropriate number:

a) How informative were the display materials? (please circle)

Very 1 2 Somewhat 3 4 Not at all 5

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very 1 2 Somewhat 3 4 Not at all 5

9. Were all your questions answered satisfactorily?

[✓] Yes [ ] No [ ] If No, can someone contact you? _____

10. Please provide any additional comments.

GRADING - will new prop. be higher?

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11. Do you require a written response to your comments?

[ ] Yes [✓] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments **(please print clearly):**

[redacted]

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1. My relation to this Project is: (Please check all that apply)

[ ] resident within the project limit

[X] land or business owner within the project limit

[ ] user of roads or lands within the study areas but not within project limit

[ ] member of an interest group (Please specify) _____

[ ] member of the general public not within the project limit

[ ] other (Please specify) _____

2. My interest is: (Please check all that apply?

[X] property/land impacts

[X] stormwater management

[ ] pedestrian / bicycle safety

[ ] traffic volume

[ ] traffic signals

[ ] other:_____

[ ] recreational

[ ] natural environment and creeks

[ ] speed limits

[ ] general interest

3. Please provide your comments as they relate to the Block 1 Concept Plans presented here today.

_____

_____

_____

_____

4. Please provide your comments as they relate to the Block 2 details provided here today.

_____

_____

_____

_____

5. Please provide your comments as they relate to the Block 3 details provided here today.

6. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [X] Notice in the mail [ ] Other: _____

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a) How informative were the display materials? (please circle)

Very		Somewhat		Not at all
1	**2**	**3**	**4**	**5**

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very		Somewhat		Not at all
1	**2**	**3**	**4**	**5**

9. Were all your questions answered satisfactorily?

[ ] Yes [ ] No [ ] If No, can someone contact you? _____

10. Please provide any additional comments.

11. **Do you require a written response to your comments?**

[ ] Yes [ ] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments **(please print clearly):**

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Address:	
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Name	E-mail	Address (Please include Postal Code)
[redacted]		

Name	E-mail	Address (Please include Postal Code)
[redacted]		

Name	E-mail	Address (Please include Postal Code)
[redacted]		

2125

Name	E-mail	Address (Please include Postal Code)
[redacted]		

From: [redacted]
Sent: June-02-17 11:10 AM
To: [redacted]
Cc: Fazio, Margaret
Subject: Aboriginal Consultation Information Response
Attachments: FINAL Notice Block 1 2 3 - Combined PIC June 8 2017 - V 5.pdf

Good Morning,

Please note the attached notice has been circulated to the following First Nations contacts:
Huron-Wendat Nation Council – Ms. Durand, Secretary, Political Sector
Six Nations Eco-Center – Mr. General, Lands & Resources
Six Nations of the Grand River Territory – Mr. Bomberry, Director of Lands & Resources
Haudenosaunee Chiefs Council – Hazel Hill, Executive Director
Mississaugas of New Credit First Nations – Mr. LaFrome, Director, Department of Consolation and Accommodation
Mississaugaus of New Credit First Nation – Fawn Sault, Manager, Department of Consultation and Accommodation

Kind Regards,

Amanda Stringer
Administrative Assistant II
Growth Management Division
Planning and Economic Development, City of Hamilton
6-71 Main Street West, Hamilton, ON L8P 4Y5
T: 905-546-2424 ext. 4468

Thursday, June 8, 2017

Block Servicing Strategies 1 and 2 PIC No. 2, and Block 3 Servicing Strategy PIC No. 1
Comment Sheet

Please take a moment to provide us with input regarding the three above mentioned projects. This questionnaire is your opportunity to provide your comments on all three. ***Given that your views are important to us, please kindly complete this questionnaire (please print) and deposit it in the "Comment Sheets" box provided or by mail, email/scan or fax to the address provided on the fourth page. Thank you.***

1. My relation to this Project is: (Please check all that apply)

[ ] resident within the project limit

[ ] land or business owner within the project limit

[ ] user of roads or lands within the study areas but not within project limit

[ ] member of an interest group (Please specify) _____

[ ] member of the general public not within the project limit

[ ] other (Please specify) _____

2. My interest is: (Please check all that apply?

[ ] property/land impacts

[ ] stormwater management

[ ] pedestrian / bicycle safety

[ ] traffic volume

[ ] traffic signals

[ ] recreational

[ ] natural environment and creeks

[ ] speed limits

[ ] general interest

[ ] other:_____

3. Please provide your comments as they relate to the Block 1 Concept Plans presented here today.

_____

_____

_____

_____

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4. Please provide your comments as they relate to the Block 2 details provided here today.

5. Please provide your comments as they relate to the Block 3 details provided here today.

6. How did you hear about this Public Information Centre (PIC)? (Please checkmark)

[ ] Newspaper [ ] Website [ ] Friend [ ] Notice in the mail [ ] Other: _____

7. Please indicate your satisfaction with the following:

	Satisfied (Y/N)	If not satisfied, please specify your preference below
Location of Meeting		
Time of Meeting		
Day of Week		
Accessibility of the Location		

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a) How informative were the display materials? (please circle)

Very		Somewhat		Not at all
1	**2**	**3**	**4**	**5**

b) How helpful were the Municipal staff and consultants in attendance? (please circle)

Very		Somewhat		Not at all
1	**2**	**3**	**4**	**5**

9. Were all your questions answered satisfactorily?

[ ] Yes [ ] No [ ] If No, can someone contact you? _____

10. Please provide any additional comments.

_____

_____

_____

_____

11. Do you require a written response to your comments?

[ ] Yes [ ] No

If yes, please provide us with your contact information below should you wish to receive a written response to your comments (please print clearly):

Name:	**Telephone:**

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Address:	
City/Province/Postal Code:	**Email:**

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Thank you for your time and participation!

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From: Fazio, Margaret
Sent: March-13-18 4:06 PM
To: [redacted]'
Cc: [redacted]
Subject: RE: 844 Barton Property Damage Flooding Aug 1, 2017 - Response

Hi [redacted]

In answer to your e-mail below, please see our answers as follows:

- We were unable to answer questions we were still working out solutions to, at the time you reference – September 2017.

- We are under the assumption that you are connecting the Aug 1st flooding to the property next door? Staff attended the site and are not able to visually confirm the extent of any and all alleged grading changes or re-direction of drainage that would be contrary to the City's Site Alteration By-Law 03-126 (as amended). We believe that any existing drainage issues should be mitigated during the re-development stage.

- Yes, the status of Watercourse 6.1 on your property is resolved in the Report that is coming for public review in the near future. HCA and City staff agreed that Watercourse 6.1 is not a regulated watercourse, based on the information provided by yourselves at our meetings.

We trust that this answers your questions and look forward to your comments, if any should arise, when the Report is up for public review.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: [redacted]
Sent: February-21-18 7:56 AM
To: Fazio, Margaret
Cc: [redacted]

Hi Margaret,

I think I've got this sorted out.

As you and Monir advised us last year, we communicated to the City through our planner John Hendricks. We are still awaiting a reply to his email of September 22nd, 2017.

On October 5th, 2017, as you emailed me to let me know that answers to flooding questions and others regarding Barton and Fifty Road EA would be forthcoming in separate correspondence, I was expecting this information to be emailed to us. We have not received any correspondence to this effect. It doesn't matter if it's technical; we'll find someone to explain it to us.

We do not require a meeting as you have courteously offered regarding these questions.

What we would meet about is a follow-up to our meeting last May 18, 2017 as to whether actions agreed upon on that date by the City and the HCA have been put into effect. If these actions have been put into effect, just email us, and we don't need to meet.

The week of March 12-16 is better than March 7th if we decide to meet prior to the Report sharing period, which I understand pertains to the Block 2 Draft Study Report ideally to be completed March/April.

The water flows through several portfolios, and we certainly do not want to have multiple meetings about the same issues.

Thank you for your continuing attention to our property concerns as we are significantly affected by several studies and plans.

[redacted]

On Feb 16, 2018, at 2:47 PM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:

[redacted]

Further to the e-mail below, if you wanted to meet prior to the Report sharing period, please note that we can meet on March 7 - 9:30-10:30 a.m. in the Stoney Creek Community Centre (with [redacted] as well).

Please advise of the Agenda Items to be discussed, and if this time would work for you, if still desired.

Thank you,
Margaret

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: Fazio, Margaret
Sent: February-16-18 2:36 PM
To: [redacted]
Cc: [redacted]
Subject: RE: [redacted] Flooding Aug 1, 2017 - Response

Hi [redacted]

Please see my responses below in blue:

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senio[redacted]
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: [redacted]
Sent: February-16-18 1:25 PM
To: Fazio, Margaret; maria simone
Cc: [redacted]

Subject: RE: [redacted] Aug 1, 2017 - Response

Ok, so agenda and questions to be prepared in advance of scheduling a meeting, correct?
Yes.

I will leave the agenda and questions to [redacted] I just want to be clear on what's needed to move this forward.
The original meeting offer came after the e-mail was sent in November – for a January meeting, because we found the e-mail confusing and not entirely sure of the main concern/question. We have advised [redacted] and her parents previously to communicate with us through you/consulting staff because a lot of the issues are technical and we don't have the resources to meet/correspond with every land owner within each study area, about each issue - multiple times.

We do not require this meeting. We originally wanted to be courteous and offer to meet rather than e-mail everybody on the e-mail again in hopes of clearing things up. The response came two months later…

Please note that any neighbour issues that are between private parties need to be dealt with between them, without the City's interference/ influence/ facilitation, etc. So, if the meeting agenda is to deal with any issues between the adjacent lands and flooding that has already been investigated, we consider the issue closed and will not meet/discuss it further.

What's the status of the Secondary Plan and progress on OMB hearings in the area? Just a summary update to bring me up to speed on the basics is fine, not looking for details at this point. I'm primarily concerned with applications that may be ongoing on adjacent lands.

The Secondary Plan OMB hearings - No dates have been set to date.

The Block Servicing Studies – Block 2 will have the Draft Study Report released for public to view/ comment on in a format that staff will deem complete by ideally March/April. We hope to have an e-link to City website, and hard copies available at Stoney Creek Community Centre, City Hall and Clerk's Office, for 3 weeks review. This is a new step in the original process that was just approved, to facilitate public technical review prior to Council meetings.

We hope/plan to go to Planning Committee of Council by June – August 2018.

No applications within the affected lands can move forward until the Fruitland-Winona Secondary Plan is approved and the Block Servicing is finalized and approved by Council. A Formal Consultation was held with the neighbouring land owner, and they are required to wait for the above.

It's likely that not all cc'd need to be on this reply but no idea who stays in so you're all in. Sorry. Thanks! JH

Since [redacted] included the Councillor's office on her original e-mail, our protocol dictates that all staff, above one's position/affected, need to also be aware of the correspondence. We can discuss just between us, if the Councillor's office is not included.

I have excluded everyone except for you and Maria, in this response. It is your/[redacted] prerogative to include the Councillor again (and I'll be required to include all other staff again), if you wish.

I hope this helps?

Thank you,
Margaret

From: Fazio, Margaret [mailto:Margaret.Fazio@hamilton.ca]
Sent: February 16, 2018 1:18 PM
To: [redacted]
Cc: Johnson, Brenda <Brenda.Johnson@hamilton.ca>; [redacted] <Tony.Sergi@hamilton.ca>; Paparella, Guy <Guy.Paparella@hamilton.ca>; Yong-Lee, Sally <Sally.Yong-Lee@hamilton.ca>; Ammendolia, Carlo <Carlo.Ammendolia@hamilton.ca>; Moniruzzaman, Monir <Monir.Moniruzzaman@hamilton.ca>; [redacted] Mahood, Alissa <Alissa.Mahood@hamilton.ca>; Robichaud, Steve <Steve.Robichaud@hamilton.ca>
Subject: RE: 844 Barton Property Damage Flooding Aug 1, 2017 - Response

[redacted]

The original invitation came after the e-mail was sent to us below. Staff found it confusing, and would appreciate having specific Agenda items or specific questions that we can prepare for, so that we can have a fruitful conversation.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: [redacted]
Sent: February-16-18 12:42 PM
To: Fazio, Margaret; maria simone
Cc[redacted]
Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017 - Response

Margaret, do you have some dates in mind?

[redacted]

From: Fazio, Margaret <margaret.fazio@hamilton.ca>
Sent: Friday, February 16, 2018 12:38 PM
Subject: RE: [redacted]
To: [redacted]
Cc: [redacted]
<guy.paparella@hamilton.ca>, Yong-Lee, Sally <sally.yong-lee@hamilton.ca>, Ammendolia, Carlo <carlo.ammendolia@hamilton.ca>, Moniruzzaman, Monir <monir.moniruzzaman@hamilton.ca>, [redacted], Mahood, Alissa <alissa.mahood@hamilton.ca>, Robichaud, Steve <steve.robichaud@hamilton.ca>

Hi [redacted]

The meeting was intended to clarify/answer the issues you posed at the e-mail below. We felt that meeting in person would be more effective than continuing an e-mail conversation. We wanted to suggest that your consultant also be present and glad to see that you have included him in this message.

Thank you,

Margaret Fazio, B.Sc.,*EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail:*Margaret.Fazio@hamilton.ca*

From: [redacted]
Sent: February-08-18 7:59 AM
To: Fazio, Margaret; John Henricks, RPP
Cc[redacted]
Subject: Re: [redacted] Damage Flooding Aug 1, 2017 - Response

Hi Margaret,

Is this meeting about the flooding?

Maria

On Dec 11, 2017, at 12:12 PM, Fazio, Margaret <Margaret.Fazio@hamilton.ca> wrote:

Hello Mrs. [redacted],

We have some information that we will be in a position to share, and would like to invite you, your family, Hamilton Conservation Authority representative, [redacted] and some project staff to a meeting in January 2018 to discuss.

I can send out dates of when other attendees and meeting spaces are available, and you could accept or reject based on your family's availability. Please let us know if this would work for you.

Thank you,
Margaret

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca* *<image001.jpg>*
www.hamilton.ca/canada150

From: [redacted]
Sent: November-28-17 7:49 AM
To: Fazio, Margaret
Cc: [redacted]
Dave Maunder [redacted]
[redacted]
Subject: Re: 844 Barton Property Damage Flooding Aug 1, 2017 - Response

Hello Margaret et al,

Thank you for promptly responding to my October 2nd email and for providing direction. Please note that my parents submitted their public comments on

October 4th before having received your email on October 5th and the printed **Barton and Fifty Road EA PIU** panels (27 pages) in the mail on October 6th. We look forward to having our comments published.

The proper names of the reports from the City website which I referenced in my email as having conflicting mappings of watercourses 6.0-6.3, among other points, are listed below. I was able to find the "**SCUBE West Subwatershed Study, Phase 1 and 2 Final Report; May 15, 2013"** (915 pages) online, not the **Stoney Creek Urban Boundary Expansion (SCUBE) Sub-Watershed Studies (East and West - 2012)** version you referenced as the one currently being used for planning and environmental assessment.

As prefaced in my October 2nd email, I started out trying to find a solution to our flooding event on August 1st which you fairly explained would be forthcoming in separate correspondence. We are still awaiting this response. That search led me to further questions about inconsistencies in the related studies I reviewed. In an attempt to understand the most recent information you have provided, especially about environment assessments, I'll try to clarify what I understand.

We did not know that the SCUBE Subwatershed studies were actual *Environmental Assessment studies*. I recently reviewed the *"Public Information Centre Display Panels" from PIC#1 on June 24, 2010* for the **"SCUBE East and West Sub-watershed Studies Phase 1"** on the City website. The online panels for "Municipal Class Environmental Assessments Studies" pertaining to *SCUBE East* and *SCUBE West* simply say *"See Display"*. However, there aren't any display panels which provide information on project status, summary or follow-up for SCUBE East or West environmental assessments.

The **"SCUBE West Subwatershed Study, Phase 1 and 2 Final Report, May 15, 2013"** document does not contain the term *"environmental assessment"* in the title, nor does it identify itself as such in the introduction of the document. It's on page 628, in the *"Public Information Centre Display Panels"* section from PIC#1 on June 24, 2010 that the environmental assessment process is outlined: *"The Study…is intended to satisfy Phases 1 and 2 of the..(Class EA) process"*. So, June 24, 2010 was actually EA Phase 2. If there is follow-up, I could not find any to Phase 1 or Phase 2 between June 2010 and May 2013.

Are we now in the **"SCUBE Subwatershed Study: Phase 3: Implementation; Aquafor Beech Limited; November 28, 2014"** (424 pages) and if so, is this still part of the EA process? It's in this document that the opening letter details revisions *"to reflect the removal of Woodland 6"*. The four "Future Study Requirements" and statements that pertain to the EA process in Phase 3 are as

follows:

"Refinement and finalization of hydraulic modelling and floodplain mapping for Watercourses 5.0 and 6.0 north of Barton Street to be completed as part of future Environmental Assessment Studies" Page 25.

"The City of Hamilton will complete a Streetscape Master Plan for Barton Street which will include the design and definition of the Barton Street Pedestrian Promenade. The City of Hamilton should also complete an Environmental Impact Statement (EIS) to:...". Pages 28, 43.

"Drainage improvements within this area are expected to be investigated as part of future Environmental Assessment studies. Future refinement to the hydraulic modelling downstream of Barton Street and associated floodline mapping is anticipated to be undertaken as part of these studies." Page 33.

"Per Section F3.3.1.1 of the Urban Official Plan, the Environmentally Significant Area Impact Evaluation Group (ESAIEG) will review all Environmental Impact Statement reports and advise City of Hamilton staff on the impacts of proposed land use changes within or adjacent to natural areas." Page 44.

The **"SCUBE West Subwatershed Study, Phase 1 and 2 Final Report, Aquafor Beech, May 15, 2013"** (915 pages) relies heavily on the **"City of Hamilton; Watercourse 5 & 6 Class Environmental Assessment Study, Draft Report; Dillon, November 2007"** (62 pages) and the **"Watercourse No. 7-Creek System Improvements; Class Environment Assessment; Community of Stoney Creek; City of Hamilton; Philips, September 2003"** (25 pages). As I mentioned in my previous email, the recommendations in these reports appear to be based on certain data which seems missing; certain works which were not completed; and certain changes which were implemented, not implemented, or do not appear to be taken into account.

I understand that you are advising us to contact another City department about the existing culvert blockages at the Arvin Ave WC6.1 crossing. Doing so, however, does not address whether these conditions pre-existed completed EA studies. In addition, why is there a lack of data for WC6.1 crossings in the related and completed EA studies that are the foundation for the current **"Municipal Class Environmental Assessment, Phase 3 & 4 Barton Street and Fifty Road Improvements; Amec, Foster, Wheeler, September 21, 2017"** (29 panels), the Block 2 Servicing Strategy and the Fruitland Winona Secondary Plan?

Our previous questions remain including the following:

- WC 6.3 crosses under Barton at Glover: Why is this culvert not mapped in the Block 2 Servicing Strategy? Why is the mapping of WC 6.3 sporadic? Are there studies completed to support it's location?

- Regarding Stormwater Servicing, Block 2 SS page 6: How can stormwater designated as 6.3 (for 2.2ha) be re-directed elsewhere? How is this justified? *"…higher flows will be directed by an overflow grate into a storm sewer within the watershed of Watercourse 6.3" (Dillon 2007, page 4).*

- Why does WC 6.2 appear, disappear, then reappear in various EA studies and plans?

- Why is data missing for the 6.1 water crossing at Arvin Ave in the EA studies?

- When will the WC 6.1 designation on our property be corrected and reinstated as a drainage ditch per our discussion, the blueprints DeFilippis prepared for the City and the inspection letter from the HCA which we provided to you at our meeting on May 18th, 2017?

"Staff will be in a position to release specific information on all Block 2 SS issues when the Draft Study Report has been finalized and approved by the Project Team and then by Council, by the end of 2017." These decisions by the City greatly affect our property. We are deeply concerned that your latest email states that we will not receive any answers until ***after*** study reports are finalised and approved. We are equally concerned about the effects on our property of the way stormwater will be managed and as been managed to date.

"City of Hamilton; Watercourse 5 & 6 Class Environmental Assessment Study, Draft Report; Dillon, November 2007" reports that the recommended MDP 6.1 and 6.3 diversions were not implemented. In contrast, **Class Environment Assessment; Community of Stoney Creek; City of Hamilton; Philips, September 2003** reports *"completed"* diversion information in Table 4 stating that 6.1 and 6.3 were diverted to 6.2 as a result of Ministry of Transportation QEW works. don't understand why we have to wait for more reports to be finalised to receive an answer about these finalised reports from 2003 and 2007?

Is it not possible that if all the grants, studies and EA recommendations over the last 20 years were applied in earnest, starting with the Master Drainage Plan in 1998 up to SCUBE " unevaluated wetlands", that we would not require a pond on our property? Our property is not the largest or lowest elevation; it is one of several lower elevations in Block 2 including areas north of Barton, where a pond historically existed.

Perhaps these questions on past events can be answered:

- Which OMB appeals to the FWSP are still not addressed?

- Are we now in the **SCUBE Watershed Study Phase 3: Implementation (Nov 28, 2014)**? Is this also an environmental assessment ? Are the recommendations being implemented?

- Have WC 6.2 culvert improvements north of QEW actually been completed? "Construct three new culverts downstream of the QEW on Watercourse 6.2" (Dillon 2007, page 4).

- I could not find an explanation for removing watercourse 6.2 in the **"City of Hamilton; Watercourse 5 & 6 Hydraulic Assessment; Dillon, January 2011"** (160 pages) while it was included in the **"City of Hamilton; Watercourse 5 & 6 Class Environmental Assessment Study, Draft Report; Dillon, November 2007"** (62 pages) and **"Hydrologic and Hydraulic Analysis for Bridgeport Watercourses; May 2005, revised January 2006; per Dillon 2007"** (Dillon 2007, page 4). What was the rationale?

- Where is the Arvin Avenue Stormwater Management Treatment Facility located? What form does it take? What area does it service? That's the one referred to being located west of WC 7.0 on page 17 of **"Watercourse No. 7-Creek System Improvements; Class Environment Assessment; Community of Stoney Creek; City of Hamilton; Philips, September 2003** (25 pages)

We are loo ing for assurances that finalised studies will be completed, reported and implemented accurately, and that plans and changes to plans have a scientific basis.

Upon your suggestion, we look forward to reviewing your responses with our planner and find it more efficient to meet with him once we have some answers.

Sincerely,

[redacted]

On Oct 5, 2017, at 5:03 PM, Fazio, Margaret
<Margaret.Fazio@hamilton.ca> wrote:

Hello Maria et al,

Thank you for your comments below and hard copy comments received from Mr. and Mrs. Simone – post PIU on September 21, 2017.

Our response/comments to your e-mail and hard copy comments and questions, as per our understanding, are as follows:

1. **RE: existing culvert conditions on Arvin Avenue**, we ask that you please call 905-546 – CITY (2489) –the City's Calling Centre, and ask to speak to "*District East Road Operations Group to report poor condition of a cross-road culvert*". They will then record a service request, and schedule an investigator, who will then look after the issue.

2. **RE: previously asked questions about regulatory status of Watercourse 6.1 -** The project study teams have had the pleasure of meeting with your family and consultant about the disposition of/regulatory status of Watercourse 6.1 during the course of the Block 2 Servicing Strategy, and now as part of
the *Introductory* Barton and Fifty Road EA, and have taken all provided information into consideration. The project team continues to be working on the finalization of the Block Servicing Strategy.

   a. **TIMING OF RESPONSE:** Staff will be in a position to release specific information on all Block 2 SS issues when the Draft Study Report has been finalized and approved by the Project Team and then by Council, by the end of 2017. You should also be aware that we cannot fully finalize Block Servicing Strategies until all Ontario Municipal Board (OMB) appeals are addressed/finalized for the Fruitland-Winona Secondary Plan, which may delay the Servicing Studies' completion timeline.

3. **RE: the relatedness of various studies in this area**

- **The Fruitland-Winona Secondary Plan (Secondary Plan)** and the Block Servicing Strategies and are using stormwater inputs from the latest study conducted in this area - **Stoney Creek Urban Boundary Expansion (SCUBE) Sub-Watershed Studies (East and West -2012)**, which followed the Municipal Class Environmental Assessment (EA) public consultation process, based on the EA Act.

- The **Barton and Fifty Road Phases 3 & 4 EA** will incorporate the drainage recommendations provided by the Block Servicing Strategies (and outside of those, the above mentioned SCUBE Sub-Watershed EAs).

- The **Barton and Fifty Road EA PIU panels** show what exists in the study area today. Since Block Servicing Strategies are not yet completed, their recommendations are not yet incorporated into the EA process. It is noted that this could be explained/shown better going forward in the study process.

- The **full scope of the Barton and Fifty Road EA** is shown in the PIU panel No. 8 titled "problem and opportunity statement", and can also be commented on, as part of the comment period ending tomorrow, October 6, 2017.
  If you require a live web link, please follow this hyperlink to the web page directly: https://www.hamilton.ca/city-planning/master-plans-class-eas/barton-street-and-fifty-road-improvements
  The PIU panels can be found under the "Public Consultation" tab.

4. **Regarding other flooding questions and othersregarding Barton and Fifty Road EA they will be forthcoming in separate correspondence. forthcoming in separate correspondence.**

We are not sure if we have understood your comments/questions fully, and would like to take the liberty to encourage you to review our responses with your consultant ([redacted] included on this e-mail). Please let us know if the information provided above is helpful. If we have not addressed all of your concerns, we ask to please clarify what answers you seek.

We would also like to suggest that, in the future, when quoting information from completed City studies it would be helpful for our understanding if you could please refer to the studies' formal titles, rather than by the consultant's name.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*
<image001.jpg>
www.hamilton.ca/canada150

From: [redacted]
Sent: October-02-17 8:36 AM
To: [redacted]
Cc: [redacted] Fazio, Margaret; [redacted]
Subject: Re: [redacted] Aug 1, 2017

Good morning,

In an effort to find a solution to August 1st flooding, I reviewed related items for the Barton and Fifty PIC provided on the City website.

The *(attached)* photo was taken on September 24th of the north-facing outlet of the 6.1 crossing under Arvin Avenue, in accordance with the map provided at the September 21st Barton and Fifty PIC.
There is green standing water and growth almost to the top of the concrete box at the left.
There is a very large semi-submerged metal ring resembling a distorted pipe which has collected crushed stone and dirt.

Have Environmental Assessment studies for SCUBE, Barton and Fifty, etc., by Philips, Dillon, Aquafor and Amec Foster Wheeler (2017) been completed with this crossing in this condition?

The *(attached)* excerpt of preliminary flow is from Dillon's Hydraulic Assessment of Watercourses 5.0 & 6.0 dated January 2011 which supports their draft Class EA Study of same published November 2007. There's no data entered for the 6.1 crossing at Arvin Ave. While a detailed description of the culvert is provided, no photos or flow data for the culvert at Arvin are provided.

I'm unable to locate the Arvin Avenue Stormwater Management Treatment Facility referred to on page 17 *(attached)* in Philips 2003 EA study west of WC 7.0. (form? size? service area?)

Dillon's draft EA Study of November 2007 reports that the recommended MDP 6.1 and 6.3 diversions were not implemented *(attached)*. In contrast, Philips EA study of 2003 reports "completed" diversion information in Table 4 stating that 6.1 and 6.3 were diverted to 6.2 as a result of Ministry of Transportation QEW works *(attached)*.

There are various mappings used at PICs for various plans that don't match each other or reality, some of which are as foll ws:

- **6.0** was diverted to 5.0 at SSR, east of Jones Road at the Flow Monitoring Location

- **6.1** south of Barton was confirmed to us as a ditch per blueprints and inspection letter from the City and HCA, respectively. We have been waiting since May for an updated plan to reflect this correction.

- **6.2** appears, disappears, then reappears in EA studies and plans.

A.J. Clarke's Hydrologic and Hydraulic Analysis for Bridgeport Watercourses (2005, 2006) supports the Bridgeport commercial and residential subdivision within the Trillium Neighbourhood Secondary Plan
area. Specifically, *"Construct three new culverts downstream of the QEW on Watercourse 6.2" (Dillon 2007, page 4)*. It is reported that the Bridgeport work was approved and underway.

I could not find an explanation given by Dillon for removing 6.2 from their final Hydraulic Assessment of January 2011, while it was included in their draft EA 2007 and Clarke's 2005, 2006 Analysis.

- 6.3 in reality runs *under* Barton at the intersection of Glover, but is not mapped as such in the FWSP Block 2 Strategy or Barton and Fifty EA study. Nor does it show how it runs from the culvert at Christina and Willow, west along the north side of Willow, then due north on the east side of Glover, *under* Barton to the lake.

A.J. Clarke (2005,2006): *"…higher flows will be directed by an overflow grate into a storm sewer within the watershed of Watercourse 6.3" (Dillon 2007, page 4).*

I could not find an explanation for Amec's sporadic mapping of 6.3, or how it does not match the FWSP Block 2 Strategy.

The Block 2 Strategy SWM plan shows an obligation for water to be drained across Barton at Glover into WC 6.3.

Notwithstanding the above items, while our property was exceedingly flooded on August 1st, which we had predetermined and reported as such to the City in June and July, we did not experience flooding during the major rain event on May 5th which caused persistent flooding over Barton near Glover.

[redacted]

<image002.jpg>

On Sep 22, 2017, at 1:38 PM[redacted]

In addition, much more water than previously is moving west along Barton Street from Glover Road to the culvert with much greater velocity. The larger east-west flow meets the south-north flow at a right angle at the culvert.
I have video if you would like to see.
Maria

Sent from my iPhone

On Sep 22, 2017, at 8:26 AM[redacted]
wrote:

I also recall there being discussion with the adjacent owner/developer about dealing with on-site drainage changes (due to “tilling” or “farming” activities) to address the concerns about more water moving towards the Simone’s east property line than in the past. While the culvert may have caused the water to back up into their property, more water is moving down the mutual property line than previously and that contributed to more water moving into their farm swale than previously (in the past, it was just their own lands draining into the swale – owners copied can correct me if I misunderstood the prior condition).

There’s no question the culvert matter was the primary matter reviewed but site grading was the next step and the developer seemed to agree to make some adjustments on site. I’ll also offer that in addition to the culvert, the downstream ditch seemed to have filled in and need maintenance. Was that ditch also cleared of silt and sod etc? You and I had a look at that condition as well.

Has there been any significant rainfall events since the work was completed? Perhaps we can answer that ourselves if you can advise when the work was completed? And please confirm if the ditch was cleared/maintained after the culvert was repaired. Thanks! [redacted]

[redacted]

From: "Ammendolia, Carlo"
<Carlo.Ammendolia@hamilton.ca> **Date:** Friday, September 22, 2017 at 8:05 AM
To: "Johnson, Brenda"
<Brenda.Johnson@hamilton.ca>, Maria Simone
[redacted]

Cc: "Dinney, Kathy"
<Kathy.Dinney@hamilton.ca>,
"Demik, Kristen"
<Kristen.Demik@hamilton.ca>,
"Fazio, Margaret"
<Margaret.Fazio@hamilton.ca>, [redacted]
<[redacted], [redacted]
[redacted]**Subject:** Re: [redacted]

Good morning Councillor,
At our site meeting we noted a pinched culvert across the street that may have contributed to the flooding, creating a backwater effect on the Simone's property.

We notified our Operations staff and the culvert has since been repaired. Carlo.

Sent from my Bell Samsung device over Canada's largest network

-------- Original message -------- From: "Johnson, Brenda"
<Brenda.Johnson@hamilton.ca> Date: 2017-09-21 5:21 PM (GMT-05:00)
To: [redacted]
"Ammendolia, Carlo"
<Carlo.Ammendolia@hamilton.ca> Cc: "Dinney, Kathy"
<Kathy.Dinney@hamilton.ca>,
"Demik, Kristen"
<Kristen.Demik@hamilton.ca>,
[redacted]>,
[redacted]>, Enrico Simone
[redacted]

Subject: Re: [redacted]

Hello everyone
Can someone give me an update on the flooding conditions?
Many thanks
[redacted]

Sent from my BlackBerry — the most secure mobile device — via the Bell Network

From: [redacted]
Sent: August 9, 2017 3:28 PM

To: Carlo.Ammendolia@hamilton.ca

Cc: Brenda.Johnson@hamilton.ca; Kathy.Dinney@hamilton.ca; Kristen.Demik@hamilton.

Subject: Re: [redacted]

See you tomorrow, [redacted].

Sent from my iPho

On Aug 8, 2017, at 1:49 PM,
Ammendolia, Carlo
<Carlo.Ammendolia@hamilton.ca> wrote:

[redacted]

We'll see you on Thursday at 10am.

Carlo Ammendolia
Acting Manager - Construction **| City of Hamilton**
Planning & Economic Development Department **| Growth Management Division**
Phone: 905-546-2424 ext.2155

From: [redacted]
Sent: August-03-17 9:33 PM
To: Ammendolia, Carlo **Cc:** [redacted]; Fazio, Margaret; [redacted]
Subject: Re: [redacted]

Hi Carlo,
How about Thursday morning, August 10th?

[redacted]

Sent from my iPad Pro

[redacted]

Hi [redacted] What is your availability for a site meeting next week. I have the afternoon of next Wednesday and Thursday open.

Carlo
Sent from my Bell Samsung device over Canada's largest network

Original message from Carlo Ammendolia
<Carlo Ammendolia@hamilton.ca>
Date: 2017-08-02 9:16 PM (GMT - 05:00)
To: [redacted]
Cc: "Johnson, Brenda" <Brenda.Johnson@hamilton.ca>"Dinney. Kathy"
<Kathy.Dinney@hamlton,ca>. "Fazio , Margaret"
<Margaret.Fazio@hamilton.ca>.[redacted]

Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

I've forwarded this on to the adjacent property owner and requested an on site meeting. I'll reply back immediately as soon as I get a response.

Carlo
Sent from my Bell Samsung device over Canada's largest network

Original message from [redacted]
[redacted]
Date: 2017-08-02 8:58 PM (GMT - 05:00)
To: "Ammendolia, Carlo" <Carlo.Ammendolia@hamilton.ca>
Cc: "Johnson, Brenda" <Brenda.Johnson@hamilton.ca>"Dinney. Kathy" <Kathy.Dinney@hamlton,ca>. [redacted]
<Margaret.Fazio@hamilton.ca>.[redacted]g
[redacted]@gmail.com

Subject: Re: [redacted] Property Damage Flooding Aug 1, 2017

Hello Carlo, I'm contacting yo regarding property damage we sustained yesterday due to flooding and erosion of our front yard from Culvert 6.1 up to our driveway (Photo's 1, 2) It was not quite a one-hor storm. This is a follow-up to Brenda's email to you on July 26, 2017. It appears that in an effort to remedy lane closures and flooding on May 5, 2017 ([redacted]t), the contouring of the lands at [redacted] was changed in June which Brenda saw when she visited us on July 25, 2017. This change resulted in re-directing significantly damaging amounts of stormwater from an historical northward flow toward our property yesterday. (Photos 1-5) While this contouring stopped stormwater from crossing over [redacted], this water is now redirected to our property resulting in flood damages and erosion to our property.

I've added Manager's name to this email as we have already met with her about flooding concerns in June, included these concerns in our comments to the Block 2 Servicing Strategy PIC No. 2, and patiently awaiting her response.

We are deeply concerned that the "Existing Drainage" (Fi-4) does not accurately map the actual historical path of stormwater. Significant amounts of water run north at the main entrance of 269 Glover, (but not south of the entrance?). then around the corner west along Barton to Culvert 6.1. We do not understand why the existing Stormwater Management systems are not indicated on the "Existing Drainage" map, nor the Storm Sewer Plans, Minor (F9g-6) or Major (Fig-7).

Finally, whatever happened to Culvert 6.2? And, how does Block 2 water drain to 6.3 at [redacted]

Sincerely,

[redacted]

<image001.jpg> <image002.jpg><image003.jpg> <image004.jpg> <image005.jpg>
Attach: Fig-4,6,7

Sent from my iPad Pro

On July 26, 2017, at 9:09 AM. Johnson, Brenda <Brenda.Johnson@hamilton.ca
Wrote:

Hello Carlo hope all is well I understand you visited [redacted] with regards to the grading issue from next door.

Can you please approach Losani homes and ask them to re-grade the area thats end he drainage to [redacted]

Historically the drainage went north to Barton and is now going west

Many thanks Brenda
Sent from my Blackberry - the most secure mobile device - via the bell network

From: [redacted]
Sent: July 25, 2017 9:36 PM
To: Brenda.Johnson@hamilton.ca

Subject: Photo Water [redacted]

Hi Brenda, Here 's a photo of water this morning, Tuesday, after big rain on Thursday.

It's a wet sponge where historically it was dry. The Existing Drainage map at Block Servicing PIC is incorrect as it does not show the water historically draining down Glover Road, around the corner, under [redacted], to culvert 6.

I, (Attached below.) We included this in our comments to the June 8, 2017 PIC but have not gotten a response.

Thanks for coming to visit. It was nice to see you.

[redacted]

Sent from my iPhone <block - servicing - strategies - gordon - ave - ea - pic2 - block 2- display - pane - sstormwater servicing Fig 4 - pdf>

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: April-17-18 9:42 AM
To: [redacted]
Cc: [redacted] ave Maunder ([redacted]n); Moniruzzaman, Monir; [redacted]
Subject: FW: 232 Jones Road - Q&A
Attachments: Block 2 SS April 6 Notice of Draft Report Completion.pdf

Hello [redacted]

The stream you refer to is referred to by our study team as Watercourse 6.0 in our Report. As you probably know it is a regulated body of water by Hamilton Conservation Authority (HCA). Overall our recommendations in Block 2 Servicing Strategy (Block 2 SS) for this watercourse are consistent with information based on and consistent with the Council Approved Fruitland-Winona Secondary Plan land uses.

Please also see the Draft Report on the project web page:
https://www.hamilton.ca/city-planning/master-plans-class-eas/block-servicing-strategies-stoney-creek-and-gordon-dean-class

For details on Watercourse 6.0 please check the following pages:

- Page 10 – Figure 2.2 Land Use Map (For the Secondary Plan itself, please follow the link at the bottom of the above web page, that will take you to maps for the Secondary Plan itself.)
- Page 27 – Figure 3.5 and Page 30 – Figure 4.1 – Limitations and Opportunities for Development
- Page 36 – Figure 4.4 – Concept Plan Map
- Page 89 – Section 6.2 – Floodplain Delineation
- Page 102 – 105 – Sections 6.4.2 and 6.5 – please see the overall and specific comments on Watercourse 6.0.
- Page 1.8 – Section 6.6.1 - Concept Plan write up
- Page 112 – 114 – Section 7.0 – Conclusions and Recommendations

You may wish to also review Block 1 Servicing Strategy information to fully understand detailed impacts to your property. I have cc'd Angelo Cutaia, the Project Lead for the Consultant Team for Block 1, to let him know that you would be interested in further details, when/if available.

Please let me know if this helps and if you have further questions.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: [redacted]
Sent: April-17-18 8:14 AM
To: iplanning
Subject: 232 Jones Road

Hi Maragaret,

My name is [redacted] and I live at [redacted] I was picking up my burn permit last week and asked about the plans for block 2 as the edge on my property is in block 2, while the rest is in block 1.

Specifically, I am wondering what the plan is for the stream running thru the back of my property.

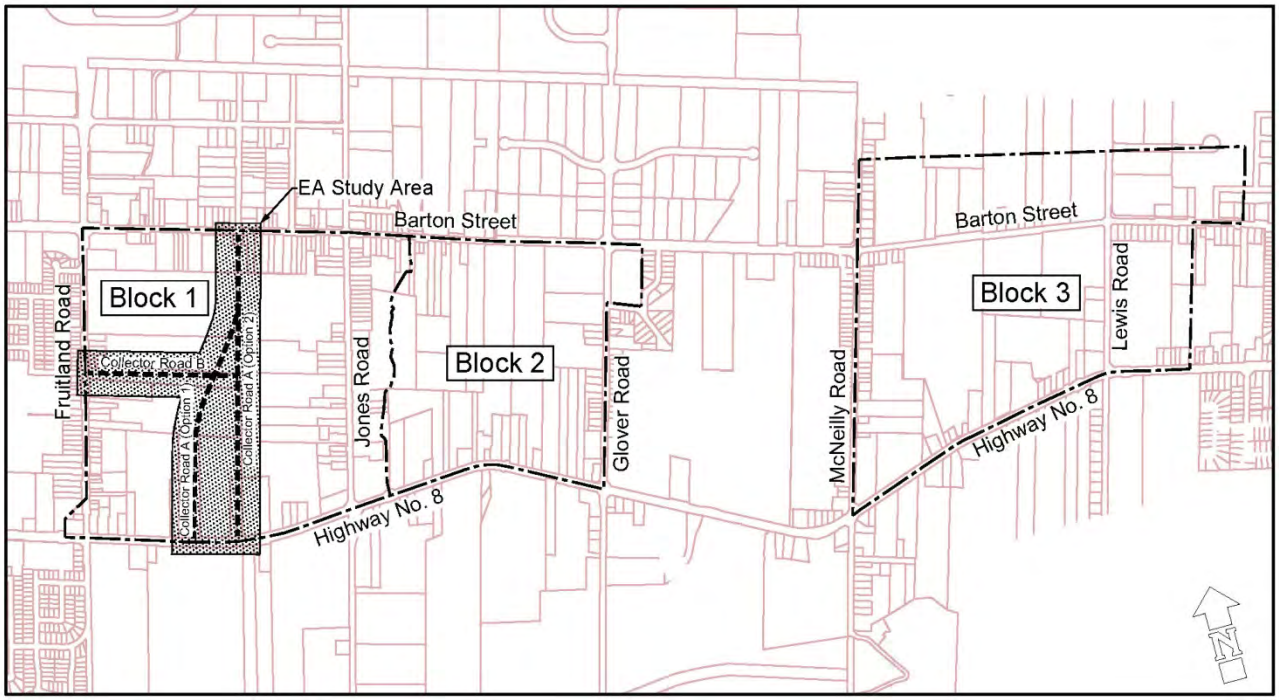
thanks,
[redacted]

Notice of Joint Public Information Centre (PIC)
Block Servicing Strategy Block 1 and 2 (No.2) and Block Servicing Strategy Block 3 (No. 1)

THE STUDIES

The City of Hamilton and various land owners are proceeding with the Block Servicing Strategies for Block 1, 2 and 3 which are within the areas outlined by the Fruitland-Winona Secondary Plan*. The Servicing Studies include the following components: layout of stormwater ponds, water and wastewater services and local road networks, within the updated natural heritage constraints. Block 2 Servicing Strategy is being conducted by the City of Hamilton, and Blocks 1 and 3 are being conducted by land owners. PIC 1 for Block 1 and Block 2 was held on April 4th, 2017.

STUDIES' MAP



THE PROCESS

The Block Servicing Strategies are being carried out in accordance with the requirements of a Schedule C project as outlined in the Municipal Engineers Association Municipal Class Environmental Assessment (EA) document (2000, as amended in 2007, 2011 & 2015). This is an approved process under the Ontario Environmental Assessment Act.

While the Block Servicing Strategies follow the Class EA public consultation process; this process does not include a public appeal option.

PUBLIC INFORMATION CENTRE (PIC) No. 2 for Blocks 1, 2 Servicing Strategies and PIC No. 1 for Block 3.

Public consultation is an important part of the Block Servicing Strategies. This PIC will provide an opportunity for the public to review the Block Servicing DRAFT Concept Plans.

Date: Thursday, June 8, 2017
Time: 3:30PM to 5PM and 6PM to 7:30PM (Open House Format)
Location: Stoney Creek Municipal Centre, 777 Highway 8, Stoney Creek – Main Level

If you require special accommodations to attend this PIC, please contact the City's Project Manager by **June 2, 2017**. If you are unable to attend this PIC, information will be available on the city's website at: *Hamilton.ca/blockservicingstrategies*

PUBLIC COMMENTS INVITED

Please provide any comments or questions to the appropriate study contacts **by June 22, 2017**.

Amec Foster Wheeler (Block 1) Angelo Cutaia, P.Eng. Consultant Project Manager 3215 North Service Road, Burlington, ON L7N 3G2 **Tel:** 905.335.2353 **Fax:** 905.335.1414 **Email:** *Angelo.Cutaia@amecfw.com*
City of Hamilton (Block 2) Margaret Fazio, B.Sc., EP, MCIP, RPP Senior Project Manager City of Hamilton 71 Main Street West, 6th Floor, Hamilton, ON L8P 4Y5 **Tel:** 905.546.2424 Ext.2218 **Fax:** 905.540.5611 **Email:** *iplanning@hamilton.ca*
Urbantech West (Block 3) Rob Merwin, P.Eng. Urbantech® West, A Division of Leighton-Zec West Ltd. 2030 Bristol Circle, Suite 201 Oakville,. ON L6H 0H2 **TEL**: 905-829-8818 Ext.102 **Mob:**416.997.0101 **FAX:** 905.829.4804 **Email**:*rmerwin@urbantech.com*

Information will be collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments will become part of the public record.

This notice published in Stoney Creek News on **May 25, 2017 and June 1, 2017**, and on the City of Hamilton Twitter account.

*****(please see studies map)

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: May-31-17 1:01 PM
To: Yong-Lee, Sally; Moniruzzaman, Monir; [redacted]; Dave Maunder ([redacted]); [redacted]Ash Baron';[redacted]
Subject: Meeting Notes for your Consideration - May 18, 2017 Meeting on Block 2 Servicing Strategy with the Simone Family and Friends
Attachments: FINAL Notice Block 1 2 3 - Combined PIC June 8 2017 - V 5.pdf

Importance: High

Hello Simone Family, Councillor [redacted]

Please see below the Notes from our May 18, 2017 meeting, as promised:

Attendees:

[redacted]

Ash Baron (Aquafor Beech Ltd. – City consultant for Block 2 Servicing Strategy (SS))
Sally Yong-Lee (Infrastructure Planning, City of Hamilton)
Monir Moniruzzaman (Infrastructure Planning, City of Hamilton)
Margaret Fazio (Infrastructure Planning, City of Hamilton)

Matters Discussed:

1. Introductions: The Simone Family invited friends of the family one of whom is a planner and one a developer, to advise them during this meeting. The Simone family's primary concerns are the location of the proposed SWM pond and the identification of Watercourse 6.1

2. Background of the studies and concerns of the Simone Family with proposed Concept Plans for Block 2 SS:

    a. **Stormwater (SMW) Pond location** – [redacted] expressed that the [redacted] Family need not be concerned about the drawing for the B2SS showing a SWM Pond being located on their property. This is the technically low spot in the Block 2 study area, and since we had to look holistically at the area this is where the SWM Pond is being proposed. Construction of a SWM Pond in the location shown would only happen if the developer/land owner east of the [redacted] Family land were to purchase land from the [redacted] Family. The [redacted] Family is in no way obligated to sell their property/house to anyone, move, etc., until and unless they want to. The [redacted] Family therefore has the following choices open to them:
        i. Sell their property
        ii. Co-develop
        iii. Stay where they are, and continue to use the land/house as they wish

    b. If another land owner wishes to develop lands which are within the same drainage area as that which is captured by the proposed SMW Pond, and the [redacted] Family does not

wish to sell/develop their land, the other land owner/developer would need to provide for an alternative/e.g. on developer-owned lands instead.

3. Status of Watercourse 6.1
   a. Past history – north-south linear drainage swales were created by [redacted] and his family in order to provide for good drainage for the grape plants at the time they were planted. The [redacted] Family is of the opinion that the extension of WC6.1, identified during the June 9th 2016 field visit, is one of the aforementioned drainage swales created for agricultural purposes.

   b. HCA staff last updated their mapping in 2006. At that time it was shown that there was a ditch which conveyed water, with had intermittent flow. The "hockey stick" portion of WC6.1 was, in 2006, mapped by HCA as a watercourse.

   c. Knowing this, the **HCA staff** will be looking at their analysis of the entire watercourse based on photographs and other sources, to help determine the status - regulatory or not – of this watercourse, and **get back to the Simone Family and City staff.** This analysis is going on right now, and it is likely that its designation will not be determined by the time the study goes to the next Public Information Centre (PIC) on June 8th, 2017. The drawings therefore will continue to show what has been shown in the past, with the understanding that we're working on resolving this matter in the near future.

4. Site Visit date versus Permission to Enter. Our records indicate that permission to enter was grated to the City staff via telephone, on June 2, 2015, and at the time of trying to meet nature's/biological and geophysical seasonal visit timelines, that was and is considered sufficient permission as long as it's documented. We do not have a written response in our records – i.e. a signed copy of the Permission to Enter to date.

5. Block 2 SS – self organization. A letter was received by The [redacted] Family from other land owners/developers. City staff mentioned that we met with those land owners, and to be alert for any developments through this process.

As a follow up, please find attached the Notice for the coming PIC.

Please let us know if you have any questions, comments or corrections by Friday, June 9, 2017. Lack of comments will constitute agreement.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

May 7th, 2015

TO ALL LANDOWNERS AND RESIDENTS:

Re: Block 2 Fruitland-Winona Block Servicing Strategy – Field Work

The City of Hamilton has retained the consulting firm of Aquafor Beech Limited to prepare the Block 2 Fruitland-Winona Block Servicing Strategy. Block 2 refers to the lands bounded by the Barton Street to the North, Glover Road to the east, Highway No 8 to the south and Watercourse No. 6 to the west. Aquafor Beech Limited will be coordinating the work required for the study.

The first phase of the study will finalize the environmental constraints and opportunities of the study area through the completion of biophysical inventories and engineering assessments. This will aid in defining the lands available for urban development.

You are receiving this letter because we have not received a response to the City's initial request sent on April 21st 2015. Staff from Aquafor Beech Limited may need access to your property in order to conduct biophysical surveys. The primary purpose of our on-site visits will be to characterize vegetation communities and document wildlife. Staff will enter the property on foot. It is a very non-invasive assessment and no property alteration shall occur. The field investigations will be conducted periodically from May to November in 2015.

The current study is being financed by the City of Hamilton. If staff are not permitted to access your property as part of this study, the cost of future biophysical studies related to development land use planning on your property will be the responsibility of the landowner, as applicable. It is also possible that delays in study completion could result in delays in the land use planning process.

It would be greatly appreciated if you would permit access to your property by staff from Aquafor Beech Limited. Should you have any questions, feel free to contact the undersigned or City of Hamilton staff at (905) 546-2424 ext. 6412 or by email at Guangli.Zhang@Hamilton.ca.

Sincerely,

AQUAFOR BEECH LIMITED

Ash Baron, B.E.S., C.E.E.R.R.
Ecology Lead
P: 519.224.3740 ext. 200
E: baron.a@aquaforbeech.com

*We kindly request you please sign and return the following form to Aquafor Beech Ltd. by **May 25th, 2015**. However, we will also accept responses via email or telephone*

Thank you for your cooperation.

Sincerely,

AQUAFOR BEECH LIMITED

Ash Baron

Ash Baron, B.E.S., C.E.E.R.R.
Ecology Lead
[redacted]

I, _____ (print name), being the owner(s) of the

land at (Address)_____
hereby grant permission to Aquafor Beech Limited staff and its sub-consultants, as well as the City of Hamilton and Hamilton Conservation Authority representatives, to access my property to conduct biophysical surveys.

_____ _____

Signature Date

I, _____ (print name), being the owner(s) of the

land at (Address)_____
do not grant permission to Aquafor Beech Limited staff and its sub-consultants, as well as the City of Hamilton and Hamilton Conservation Authority representatives, to access my property to conduct biophysical surveys.

_____ _____

Signature Date

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: April-04-18 11:15 AM
To: Dave Maunder; [redacted]'
Subject: RE: Block 2 Servicing Strategy
Attachments: Block 2 SS April 6 Notice of Draft Report Completion.pdf

Thanks Dave.

[redacted] and I just spoke and she will be looking at the website for the report, and hopefully the land owners also will have the notice in hand this week, to direct her to the hard copy, if needed – at the three locations mentioned in the notice.

[redacted] just so you have the information handy, please find the copy of the notice attached to this message as well. Please note the Report is expected to be placed on the City website on April 6th.

As mentioned, please let us know if you have any questions or comments.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: Dave Maunder [[redacted]]
Sent: April-04-18 10:52 AM
To: [redacted]'
Cc: Fazio, Margaret
Subject: RE: Block 2 Servicing Strategy

Please contact Margaret Fazio for timing

From: [redacted]
Sent: Wednesday, April 4, 2018 10:36 AM
To: [redacted]
Subject: Block 2 Servicing Strategy

Good Morning Dave,

My name is [redacted] and I am with MHBC Planning. Our office is currently working on a project in the Fruitland Winona Area of Stoney Creek. We have been following the Block 2 servicing strategy, to provide information to our engineers, sub consultants etc.

Can you please provide an update on the status of the report, and if possible provide a draft of this report? The City is requesting a detailed EIS, as well as a hydrogeology study, and we are hoping your report will provide some information to help us with these items.

Kind Regards,

[redacted]

MHBC **Planning, Urban Design & Landscape Architecture**
540 Bingemans Centre Drive, Suite 200 | Kitchener | ON | N2B 3X9 | [redacted]

Follow us: Webpage | Linkedin | Facebook | Twitter | Vimeo

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: May-30-17 1:22 PM
To: Ash Baron
Cc: 'Dave Maunder'; McNair, Laurie; Yong-Lee, Sally
Subject: RE: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the Simone Family and Friends
Attachments: Mail Out Letter - 2nd.pdf; Copy of Landowner Permission record.xlsx

Hi Ash,

Attached is the letter – which shown your name and asks that they be returned to you/Aquafor Beech? I know it's been a long while but could you check your hard copy records again, to see if you don't have any returned mail? I understand from that letter that a first request was sent by the City/us, but I have no hard copies (we usually try to keep a separate folder) to prove access was granted to any properties. I will look again for individual letters, if mixed with other folders…

Please and Thanks,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

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From: Ash Baron [[redacted]]
Sent: May-30-17 12:10 PM
To: Fazio, Margaret
Cc: 'Dave Maunder'
Subject: RE: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the Simone Family and Friends

Hi Margaret,

In April 2015, Aquafor provided the City (Guangli Zhang) with wording for the property access letter. The City did the mail outs. I have record of all permission to enter emails, letters, and phone calls the City received; as provided by Guangli. The only record I have for the [redacted] property is the attached email, which states that Mrs. [redacted] provided the City with verbal permission to enter. As permission had been granted, I did not need to call the [redacted] family to request permission for breeding bird surveys. We did not receive a letter from the City on behalf of the [redacted] family.

For your records (and I may have already sent you this), I have attached a copy of the list of landowners that the project team heard back from.

Kind regards,
Ash

From: Fazio, Margaret [mailto:Margaret.Fazio@hamilton.ca]
Sent: Tuesday, May 30, 2017 11:35 AM
To: Ash Baron
Cc: Dave Maunder ([redacted]
Subject: RE: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the [redacted] Family and Friends

Hi Ash,

This takes us back a couple of years but I do recall that we asked Aquafor Beech for help with Permissions to Enter process for this project. I know you did phone call follow ups, and was sure you also did the mail out for us? I cannot find any hard copies of letters received – permissions to enter for this project in our hard copy files. I have a mailing list and a map of what permissions were granted. I recall we were one PM short, and one on mat leave so would have needed your help at that time. Could you check your files please?

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: Ash Baron [[redacted]]
Sent: May-30-17 9:38 AM
To: Fazio, Margaret; Moniruzzaman, Monir; Lloyd, Trish; 'Dave Maunder'; Yong-Lee, Sally; [redacted]
Subject: RE: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the [redacted] Family and Friends

Hello Margaret et al.,

My edits are shown in red, with notes in blue.

Kind regards,
Ash

From: Fazio, Margaret [mailto:Margaret.Fazio@hamilton.ca]
Sent: Monday, May 29, 2017 9:27 AM
To: Moniruzzaman, Monir; [redacted] Dave Maunder ([redacted]); Yong-Lee, Sally; Stone, [redacted] 'Ash Baron'
Subject: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the [redacted] Family and Friends
Importance: High

Hi,

Please see DRAFT NOTES from our meeting on May 18th, with the Simone Family, below. ***Please send comments by Wednesday, May 31, 2017. Lack of comments will constitute agreement.***

Hello,

Please note the following notes from our meeting, below:

[redacted]

Ash Baron (Aquafor Beech Ltd. – City consultant for Block 2 Servicing Strategy (SS)
Monir Moniruzzaman (Infrastructure Planning)
Margaret Fazio (Infrastructure Planning)

Matters Discussed:

1. Introductions: The Simone Family invited friends of the family one of whom is a planner and one a developer, to advise them during this meeting. The [redacted] family's primary concerns are the location of the proposed SWM pond and the identification of Watercourse 6.1

2. Background of the studies and concerns of the Simone Family with proposed Concept Plans for Block 2 SS:

    a. **Stormwater Pond location** – [redacted] expressed that the [redacted] Family need not be concerned about the drawing for the B2SS showing a SWM Pond being located on their property. This is the technically low spot in the Block 2 study area, and since we had to look holistically at the area this is where the SWMF is being proposed. Construction of a SWMF in the location shown would only happen if the developer/land owner east of the Simones were to purchase land from the [redacted] Family. The [redacted] Family is in no way obligated to sell their property/house to anyone, move, etc., until and unless they want to. The [redacted] Family therefore has the following choices open to them:
        i. Sell their property
        ii. Co-develop
        iii. Stay where they are, and continue to use the land/house as they wish

    b. If another land owner wishes to develop lands which are within the same drainage area as that which is captured by the proposed Stormwater Pond, and the [redacted] Family does not wish to sell/develop their land, the other land owner/developer would need to provide for an alternative/e.g. on developer-owned lands instead.

3. **Status of Watercourse 6.1**
    a. Past history – north-south linear drainage swales were created by [redacted] and his family in order to provide for good drainage for the grape plants at the time they were planted. The [redacted] Family is of the opinion that the extension of WC6.1, identified during the June 9th 2016 field visit, is one of the aforementioned drainage swales created for agricultural purposes.

b. HCA staff last updated their mapping in 2006. At that time it was shown that there was a ditch which conveyed water, with had intermittent flow. The "hockey stick" portion of WC6.1 was, in 2006, mapped by HCA as a watercourse. [redacted] – do you want to comment on statements made re: the HCA's HDF assessment, enclosing the WC6.1 extension, regulation of "insignificant watercourses", etc.?

c. Knowing this, the **HCA staff** will be looking at their analysis of the entire watercourse based on photographs and other sources, to help determine the status - regulatory or not – of this watercourse, and **get back to the [redacted] Family and City staff.** This analysis is going on right now, and it is likely that its designation will not be determined by the time the study goes to the next Public Information Centre (PIC) on June 8th, 2017. The drawings therefore will continue to show what has been shown in the past, with the understanding that we're working on resolving this matter in the near future.

4. **Site Visit date versus Permission to Enter.** Our telephone records indicate that permission to enter was grated to the City verbally first, on June 2, 2015. They were then followed up by written permissions, some of which after the first visits already took place. – **Margaret**, Aquafor does not have any record of written correspondence with the [redacted] Family. Please confirm that the preceding sentence is true.

5. **Block 2 SS – self organization matter.** A letter was received by The [redacted] Family from other land owners/developers. City staff mentioned that we met with those land owners, and to be alert for any developments through this process.

Please let me know if you have any questions or comments.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

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Hamilton Block 2 - Record of Landowner permissions

Property Address	Name		Phone number	Email
	First	Last		
[redacted]				

Permission	Date
Yes	April 29 2015
Yes	April 29 2015
Yes	April 29 2015
Yes	May 1 2015
No	April 30 2015
Yes	April 27 2015
Yes	April 27 2015
Yes	May 1 2015
Yes	May 7 2015
Yes	May 8 2015
Yes	May 11 2015
Yes	May 22 2015
Yes	May 25 2015
Yes	May 25 2015
Yes	May 25 2015
Yes, prior notice req'd	May 26 2015
Yes, prior notice req'd	29-May-15
No	29-May-15
No	29-May-15
Yes	01-Jun-15
Yes	25-May-15
Yes	02-Jun-15
No	02-Jun-15
Yes	02-Jun-15
Yes	05-Jun-15
Yes	01-Jun-15
Yes	25-May-15

Notes
Daughter called. Father has passed away, mother ([redacted] now owns the property.
Rec'd via fax. Also rec'd fax for Permission to Enter Slip, dated May 21 2015.
Rec'd via email
Rec'd via email. Fruitland Christian Reformed Church.
Rec'd via letter mail
Rec'd via letter mail
Rec'd via letter mail
Rec'd via letter mail. Stony Creek Welding Ltd.
City rec'd letter.
Rec'd via email.
Rec`d via email from City. Branthaven Fruitland Inc. (Stoney Creek Christian Fellowship property).
Rec'd via email. Kries manufacturing shop.
Rec'd via fax. Spoke to Tony Camply on phone, son Frank left a message on May 22.
Rec'd via email. E & V Precision Grinding
City of Hamilton rec'd phonecall.
City of Hamilton rec'd phonecall. 24-48 hours notice req'd prior to entering the property.
Rec'd via email. Min 24 hrs notice req'd prior to entry.
Woodlot 6 property. Lawyer's letter states that property access is refused. Lawyer is Manfred Rudolf.
Rec'd via email.
Rec'd via fax.
Rec'd via phone.
Access denied until further notice, likley after OMB hearing in October. Landowner is involved in an OMB hearing and has been charged by the CA with tree cutting on his property. Will send access request letter to lawyer (Fred Rudolf), who will send a reply to us and the City.
City of Hamilton rec'd phonecall.
Rec'd via fax. Also sent ATO via letter mail, dated 28 June 2015.
Rec'd via fax on June 7th.
Rec'd via mail.

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: May-23-17 9:01 AM
To: [redacted]h; Dave Maunder ([redacted]; Yong-Lee, Sally
Subject: URGENT REQUEST FOR COMMENT Ad proof Stoney Creek News by 10:30 a.m. Tuesday, May 23, 2017
Attachments: City May 25th Sty Creek Notice.pdf; ATT00001.txt

Importance: High

HI,

Please find the ad attached - it needs to be released this morning, to the newspapers, and my deadline to send it is by 11 a.m. today.
Please advise by 10: 30 a.m. of any changes. Lack of comments will constitute agreement.
Thank you,

Margaret Fazio, B.Sc., EP, MCIP, RPP
Senior Project Manager, Infrastructure Planning Growth Management, Planning and Economic Development Department City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: Margaret.Fazio@hamilton.ca

www.hamilton.ca/canada150

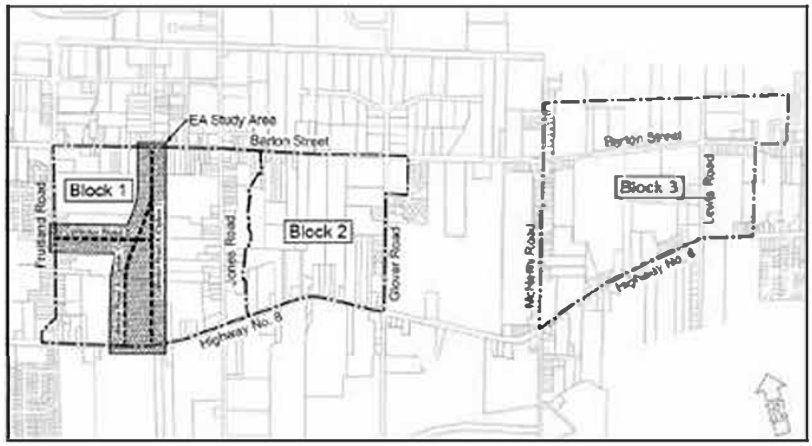
-----Original Message-----
From: Patel, Alipa
Sent: May-19-17 1:05 PM
To: Fazio, Margaret
Subject: Ad proof Stoney Creek News

Notice of Joint Public Information Centre
Block Servicing Strategy Block 1 and 2 (PIC 2)
and Block Servicing Strategy Block 3 (PIC 1)

THE STUDIES

The City of Hamilton and various land owners are proceeding with the Block Servicing Strategies for Block 1, 2 and 3 which are within the areas outlined by the Fruitland-Winona Secondary Plan. The Servicing Studies include the following components: layout of stormwater ponds, water and wastewater services and local road networks, within the updated natural heritage constraints. Block 2 Servicing Strategy is being conducted by the City of Hamilton, and Blocks 1 and 3 are being conducted by land owners. PIC 1 for Block 1 and Block 2 was held on April 4th, 2017.

STUDIES' MAP



THE PROCESS

The Block Servicing Strategies are being carried out in accordance with the requirements of a Schedule C project as outlined in the Municipal Engineers Association Municipal Class EA document. This is an approved process under the Ontario Environmental Assessment Act.

While the Block Servicing Strategies follow the Class EA public consultation process, this process does not include a public appeal option.

PUBLIC INFORMATION CENTRE (PIC) No 2 for Blocks 1, 2 Servicing Strategies and Gordon Dean and PIC No 1 for Block 3.

Public consultation is an important part of the Block Servicing Strategies. This PIC will provide an opportunity for the public to review the Block Servicing DRAFT Concept Plans.

Date: Thursday, June 8, 2017
Time: 3:30PM to 5PM and 6PM to 7:30PM (Open House Format)
Location: Stoney Creek Municipal Centre, 777 Highway 8, Stoney Creek – Main Level

If you require special accommodations to attend this PIC, please contact the City's Project Manager **by June 1, 2017.**

If you are unable to attend this PIC, information will be available on the city's website at: *Hamilton.ca/blockservicingstrategies* the day after the PIC.

PUBLIC COMMENTS INVITED

To share your comments, find out more or be added to the studies mailing lists, please contact the appropriate team members **by June 22, 2017:**

Amec Foster Wheeler (Block 1) Angelo Curaia, P.Eng. Consultant Project Manager 3215 North Service Road, Burlington, ON L7N 3G2 **Tel:** 905.335.2353; **Fax:** 905.335.7414 **Email:** *Angelo.Curaia@amecfw.com*	**City of Hamilton (Block 2)** Margaret Fazio, B.Sc., EP, MCIP, RPP Senior Project Manager City of Hamilton 71 Main Street West, 6th Floor, Hamilton, ON L8P 4Y5 **Tel:** 905.546.2424 ext.2218; **Fax:** 905.540.5511 **Email:** *jobservice@hamilton.ca*
Urbantech West (Block 3) Rob Mervin, P.Eng. Urbantech West A Division of Leighton-Zec West Ltd. 2030 Bristol Circle, Suite 201 Oakville, ON L6H 6H2 **TEL:** 905-829-9818 Ext. 102, **Mob:** 416.397.0101 **FAX:** 905.829.4804 **Email** *mervin@urbantech.com*	

Information will be collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments will become part of the public record.

This notice published in Stoney Creek News on **May 26, 2017 and June 1, 2017**, and Tweeted on City of Hamilton website.

*(please see studies map)

Hamilton

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: February-27-18 2:02 PM
To: [redacted] Chris Denich; Dave Maunder [redacted]); Yong-Lee, Sally; Moniruzzaman, Monir; Mahood, Alissa; Kiddie, [redacted]
Cc:
Subject: Block 2 - Proposed Schedule to Completion (Blocks 1 & 3 invited to join)

Importance: High

Hi,

As requested/discussed at yesterday's meeting please note the schedule for the Block 2 Servicing Strategy going forward:

1. **March 15, 2018** - Comments DUE on the Draft Report (and summary of issues addressed by AquaforBeech hand out)
2. **April 3, 2018** – Amended DRAFT REPORT submitted to the City of Hamilton (e-copy, followed by 5 copies of hard copy – Dave please let's talk about that)
3. **April 5, 2018** – City to send DRAFT Notice of Completion to AquaforBeech (and Block 1 and 3 if ready) for comment.
4. **April 6, 2018 - DRAFT Report Hard Copies available to City staff for** distribution to:
    a. Stoney Creek Community Centre
    b. City Hall – Clerk's Front Desk
    c. City Hall – 6th Floor Front Desk
5. **April 13, 2018 – May 4, 2018** - Notice of Project Completion – DRAFT REPORT for Review for land owners – in the Newspapers
6. **May 7 – 21st, 2018** – City Staff to Draft Information Report to Council – for circulation to staff prior to vacation season.
7. **August 14, 2018** - Anticipated Planning Committee Date

I have included [redacted] (Block 1) and [redacted] (Block 3) – For their information if their reports can be available by the dates above we can go with Report to Council with them together.

If not possible to go together, we can go with them at a later date – separately.

Please let me know if you have any questions of comments about this.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

UrbanSolutions
Planning & Land Development Consultants Inc.

May 10, 2017 186-17

Via Registered Mail

Dear Owner,

Re: BLOCK 2 SERVICING STRATEGY STUDY
FRUITLAND WINONA SECONDARY PLAN AREA
LOWER STONEY CREEK, CITY OF HAMILTON

We are writing to you to inform you that a Block Servicing Study is commencing for an area that encompasses your landholding in Lower Stoney Creek, City of Hamilton.

As background, the City of Hamilton's Fruitland Winona Secondary Plan provides policies and requirements to implement the Secondary Plan. One of the requirements is the completion of a Block Servicing Strategy Study (BSS).

Valery Homes Stoney Creek Limited has retained UrbanSolutions and Urbantech West to manage and complete the BSS for Area 2. This Area is generally bordered by [redacted] Glover Road and Watercourse 6.0 (+/- 150m east of Jones Road) which includes your Lands.

The BSS is a comprehensive study providing technical analysis and design concepts for the BSS area incorporating land use, stream systems, terrestrial and aquatic features, grading, drainage and servicing, stormwater management, hydrology, transportation and air drainage analysis.

The Study is being completed in an open and transparent process which will include Public Open Houses. Input will be welcomed by landowners and residents of the study area and input will be provided by the City of Hamilton and the Hamilton Conservation Authority.

At this time, on behalf of Valery Homes Stoney Creek Limited, we are inquiring if you would like to be an active participant in the BSS study.

If there is interest in participating **please respond before May 26, 2017** to this letter by means of a letter, e-mail or a phone call to the undersigned. You will then be added to the contact list for the Study and be invited to the upcoming public open house for landowners, to be held the week of June 5th.

905.546.1087 • urbansolutions.info
105 Main Street East, Suite 501, Hamilton, ON L8N 1G6

File Name/Number: Block 2 Servicing Study - Fruitland-Winona Secondary Plan

Data Source: Municipal Property Assessment Corporation (MPAC) 2016

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: November-30-17 4:57 PM
To: Dave Maunder ([redacted]
Cc: [redacted]Mahood, Alissa; Kiddie, Melissa; Stone, Mike; Moniruzzaman, Monir; Yong-Lee, Sally; [redacted]
Subject: BLock 2 Draft Report - City of Hamilton and HCA Comments
Attachments: Block 2 Servicing Study Draft Report (95.6 KB); Block 2 Servicing Strategy-Natural Heritage Planning Comments (220 KB); Block 2 City Comments (82.8 KB)

Importance: High

Hi Dave et al,

We have comments focused on various areas of interest, as follows:

1. HCA comments – Attachment No. 1
2. Natural Heritage: Attachment No. 2
3. Engineering/Servicing: Attachment No. 3

Please note that some wording on various comments may be contradictory at this time. We are hoping that we can iron that out at our meeting next week.

Additional detailed comments are as follows:

1. AODA Guidelines for City of Hamilton dictate that a FONT of Verdana or Arial size 12 (with capability for 17) need to be used for all reports. Please amend yours to match this requirement in the next version of the report.
2. Please add the names of the **City Study Team** after the list of Appendices – cc'd staff should be included.
3. Pg. 6,
    a. top paragraph: Watercourse 6.0 and 7.0 mention – representation in the report needs to be discussed.
    b. Block 2 SS to include: #1 - The location of the neighbourhood park – it has already been determined, by the FWSP, not this study. – Please explain.
    c. Paragraph - 3rd FROM BOTTOM: Fruitland-Winona Transportation Classification Plan – is this the correct name? Suggest changing to "Neighbourhood Transportation Plan".
    d. Paragraph – 2nd FROM BOTTOM: SMW facilities…suggest rewording to: "…facilities locations were not finalized as part of the FWSP process". Later in the same paragraph suggest rewording to "...facilities locations will be finalized through the Block Servicing Strategy".
    e. Is "Fruitland-Winona Secondary Plan" identified as "Secondary Plan"? Please ensure that this has been documented prior to using the shorter term.
4. Pg. 7 – OMB date – please state "on December 4, 2015".
5. **Stormwater Management, pg. 9**
    a. Please define water quality "Level 1" and "Level 2" or reference original source
    b. Water balance requirements vary based on soil type. Could you provide more details?
6. **Natural Heritage System pg. 9 & 14:**

    a. Please see attached separate comments from [redacted]nd Servicing staff.
    b. W.C. 6.1 – We need to resolve the wording at our meeting.
    c. W.C. 6.1 – Bottom of page 14 – status of this additional portion of the watercourse is not currently known…please see comment b.
    d. Similarly W.C. 6. 1 0 Table 3.1 – Permanent and Intermittent Watercourses – subject to further discussion.
    e. Etc.
7. **Section 4.0 – Development of Concept Plan**, pg. 22, please add bullet points in the second set, as follows:
    a. Local roads
    b. W & WW servicing needs
    c. Grading
8. **Figure 4.4** –
    a. Study area map does not, nor did we find in writing an acknowledgement that the [redacted] Improvements Phases 3 & 4 EA and Highway 7 Phases 3 & 4 MCEA are ongoing, and that the FWSP has identified a need to widen their ROW widths, with Barton at 40m ROW, offset by 4 m to the south, and Highway 8 urbanization to the north side only.
    b. Please remove the MUP entirely from the map, since the local road is being put in its place.
9. **Table 5.1** on pg. 31
    a. Please provide the long form of "**WNV**".
10. **Figure 5.1** – Is a trail connection possible along the Pond 6.0, that would link to [redacted] etc.? Please increase the font size of labels on the drawing – it's too small to read.
11. **Figure 5.13** – drawing is out of focus – not legible. Please amend.
12. During Barton and Fifty Road EA – culvert sizing will be taken entirely from Block Servicing, so they need to be confirmed now, as per attached comments.
13. **Pg. 69** – Third bullet - please provide the full version of "WS".
14. **Pg. 71** – Please see comments # 13.
15. **Pg. 72** – Second paragraph – HCA Flood Plain Mapping used (last updated?) – we should offer wording that reflects that there is a potential to change, since HCA is currently in review and although they don't anticipate big changes some will have to be accommodated after Block Servicing is completed. Not sure if this would happen on an application basis or if we would need to amend Block Servicing?...Question for Discussion at the meeting.
16. **WC 7.0** restoration is currently under way via Public Works Department, [redacted] City will provide updated wording.
17. 6.4.1 on pg. 76 – 3 & 4 – subject to discussion at our meeting.
18. Page 80 – Concept Plan – **Bike Lanes** – Please see the intended grid pattern density for Bike Lanes in the Cycling Master Plan and Engineering Guidelines, which dictate that all Collector Roads must provide an on-road bike lanes. They should now be included in our Functional Design.
19. Recommendations pg. 84 - #3 – subject to discussions at our meeting.
20. Comprehensive Development Guidelines – pg. 187 – please increase font/page size – the used font is illegible in this format and does not meet AODA requirements.
21. **Field Data notes** – should these be made public?

Please let us know if you have any questions. Otherwise we'll discuss at the meeting next week. Please send any agenda items you wish to discuss.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: [redacted]
Sent: October-06-17 4:34 PM
To: Fazio, Margaret
Cc: [redacted]
Subject: Block 2 Servicing Study Draft Report
Attachments: Block 2 Draft Report_HCA Comments_Oct 2017.doc

Hi Margaret,

Please see attached our comments on the draft block 2 servicing study report.

Kind regards,

[redacted]

Hamilton Conservation Authority
Healthy Streams...Healthy Communities!

BY EMAIL

October 6, 2017

Margaret Fazio, Senior Project Manager
Infrastructure Planning
Growth Management, Planning & Economic Development Department
City of Hamilton
71 Main St. West, 6th Floor
Hamilton, ON L8R 4Y5

Dear Ms. Fazio,

Re: Fruitland-Winona Secondary Plan, Block 2 Servicing Strategy Draft Report, July 26, 2017

Thank you for providing the Hamilton Conservation Authority (HCA) with the *Block 2 Servicing Strategy for the Fruitland – Winona Secondary Plan Lands, Draft Report* (Auqafor Beech Ltd., July 26, 2017). HCA staff have reviewed the report and offer the following comments for consideration.

Development Constraints

1. Natural Heritage Features and Watercourses

Areas not accessed/assessed are shown on Figure 3.3. HCA staff note this includes the lands at 238 Jones Road. While the report in Section 6.4.1 provides a recommendation for further study of lands not assessed, including for natural heritage constraints, HCA suggest it may be useful to specifically identify this property as requiring further study in Section 6.4.1, as has been done for the properties at [redacted]

In reviewing the concept plan presented in Figure 4.4, HCA staff note that while the specific underlying features/constraints are not identified, a line to delineate the outer limit of all aggregated constraints (floodplain, natural heritage, etc.) as shown on Figure 4.1 has been overlaid on the underlying land use designations. However, a constraint area boundary for the properties at [redacted] has not been carried forward from Figure 4.1 to Figure 4.4, and HCA suggests this should be added.

HCA notes that Figure 4.4 is potentially misleading, as some of the natural heritage feature/buffer constraint areas (as shown in Figure 4.1) are assigned a development land use designation. HCA staff suggest it may be helpful to clarify in the description of how the concept plan was developed (Section 4.2.3), or elsewhere in the report, that land use designations/land

uses within the constraint area boundary will be subject to further assessment and review at the time of any proposed development to confirm constraints and development limits.
HCA notes Figure 4.1 identifies ‘new drainage feature’ alignments along watercourses 6 and 7. Staff do not recall these proposed new drainage features from earlier concept plans, and the intent and basis for their identification does not seem to be described in the report. HCA would appreciate the opportunity to review this further with the City and Aquafor Beech Ltd.

With respect to watercourse 6.1, the report indicates in Section 4.3 that it was assumed this feature will be developed. While a seasonally appropriate survey of this feature has not been completed to date, based on the information available and assessment completed through the current study HCA staff note that while the feature does contribute to fish habitat downstream it has limited function overall and would not be required to be retained as an open feature when these lands go forward for development. The drainage contribution of the existing feature to downstream reaches would have to be maintained through the stormwater management design.

HCA has previously indicated that the tributary of watercourse 7 that runs south-north along the west side of Glover Road is a regulated watercourse, and as such development constraints should be identified if re-development is to be considered for the existing residential lots located along the west side of Glover Road to the north of Highway No. 8.

2. Flood Plain Mapping

Information included in the Letter Report: SCUBE Block 2 Draft Development Constraints prepared by Aquafor Beech Limited, dated August 11, 2016 provides additional details as to the estimated Flood Plain Mapping approach undertaken. HCA suggests this information should be included in the draft report for completeness and reproducibility.

Furthermore, HCA staff would like to clarify that the approach undertaken is appropriate for a preliminary determination of development constraints, but is not considered official Flood Plain Mapping and is not in accordance with HCA Flood Plain Mapping standards, as stated in Section 6.2 (p.72). An ongoing HCA study to update official Flood Plain Mapping for this area will eventually supersede findings from the Block 2 Block Servicing Study and may result in some alterations to the development constraints. However, alterations are presently expected to be minor.

3. Erosion Hazard Limit

Information included in the Letter Report: SCUBE Block 2 Draft Development Constraints prepared by Aquafor Beech Limited, dated August 11, 2016 indicated that the erosion hazard limit was calculated from the meander belt allowance and a 6 m erosion access allowance.

Please confirm that the meander belt widths identified in Section 3.2 continue to include the 6m allowance. It is suggested that the report by revised to clarify this.

The meander belt allowance defines the development constraint limit for some areas adjacent to Watercourse 6 where the main channel geometry and creek alignment were previously unverified due to site access limitations. It is requested that confirmation be provided that the additional topographical information provided by HCA was sufficient to adequately define the main channel geometry and creek alignment in these areas, as this information has the potential to alter the meander belt extents and thus the development constraints limits.

HCA staff suggest the meander belt allowance calculation details (Drainage Area and Stream Power) should be included in the draft report for completeness and reproducibility.

Storm Water Management Facility Concept Design

4. Calibration / Validation of the PCSWMM peak flow rates and runoff volumes

As a new model was developed for this study, it is suggested that the calibration / validation process be documented. At a minimum, it is suggested that the peak flow rates and runoff volumes (existing and proposed conditions) be compared as best as possible to SCUBE West SubWatershed Study (Aquafor Beech 2013), which were relied on for the release rate and storage targets. It is suggested that the comparison include locations upstream and downstream of the site.

5. Target Release Rates for Erosion Control and 100-Year Control

It is HCA staff opinion that these target release rates should be based on existing drainage areas and not the slightly higher proposed drainage areas. Although this is not expected to alter the provided concept Storm Water Management (SWM) facility design, it is suggested that corrections be made to ensure that future design revisions rely on the corrected release rate targets. This could be added to Section 6.3/Section 7.0 as work to be completed as part of future detailed stormwater management design.

6. 100 Year Control Release Rate for Pond 6.0

It is HCA staff understanding that the 100-year control release rate for Pond 6.0 is 40.6 L/s/ha, rather than 55.7 L/s/ha, per Table 5.2. Although this is not expected to alter the provided concept SWM design, it is suggested that corrections be made to ensure that future design revisions rely on the corrected release rate targets. This could be added to Section 6.3/Section 7.0 as work to be completed as part of future detailed stormwater management design.

7. Extended Detention Water Level Relative to Outlet Overflow

Based on HCA staff interpretation of the MOECC Storm Water Management guidelines 2003, it had been expected that the reverse slope pipe be used as the sole outlet in the water quality and erosion control portion of the facility, and that the outlet chamber can contain openings for flood control and overflow protection.

As such, it had been expected that the outlet control design would include an extended detention water level at the elevation of the overflow grate, rather than above the grate elevation.

Clarification is requested that this is an intended design aspect that satisfies the erosion control targets, rather than an inconsistency between the provided design figures and the assessed configuration.

8. SWMF Drawdown Time Calculations

It is suggested that the recommended drawdown equation from MOECC Storm Water Management guidelines 2003 be used to verify the calculated drawdown.

In addition, please provide the drawdown calculations as HCA staff were unable to duplicate the stated results.

9. Forebay Conveyance Pipes Design

It is anticipated that at a subsequent development planning stage that refined SWM facility designs and assessments will include suitable forebay conveyance pipes, which were omitted from the current analysis. This could be added to Section 6.3/Section 7.0 as work to be completed as part of future detailed stormwater management design.

10. Drainage Area to Watercourse 7.0 – SWM Strategy

HCA staff would appreciate further clarification on the rationale for the proposed SWM strategy for the watercourse 7.0 drainage area. It is recommended that other source control (quality and quantity) options, including the use of Low Impact Development (LID), also be assessed in addition to the suggested use of a proposed ditch system as quality and quantity control.

Assessment of Potential Downstream Impacts

11. Confirmation of No Negative Impacts on Flows and Flood Levels Downstream of Block 2

It is acknowledged that proposed peak discharges from Block 2 will be below peak flow rates expected under existing conditions, as a result of the proposed SWM facilities control. However, resultant flows and flood levels downstream of Block 2 are a result of the combined effects of the flow contributions from the various tributaries and drainage areas, including runoff hydrographs, total runoff volumes and peak flowrates (timing and magnitude). As such, it is requested that an unsteady state hydraulic analysis be undertaken to confirm that the proposed Block 2 development with proposed onsite runoff controls results in no negative impacts on downstream flows and flood levels (compared to existing conditions).

HCA staff note this could be undertaken at a subsequent development planning stage, and recommend this be added in Section 6 and/or 7 as a future work commitment.

12. Erosion Threshold Analysis

The SCUBE West SubWatershed Study (Aquafor Beech 2013) indicated controlling outflows for the 2 year storm event to pre-development rates and outflows less than the 2 year storm were to be over-controlled to minimize potential in-stream erosion from the most frequent storm events.

As per the Block Servicing Strategy Terms of Reference, it is requested that an erosion threshold analysis be undertaken, to confirm that the erosion control release rate targets are appropriate given existing channel erosion potential of downstream reaches.

13. Impacts on Downstream Baseflow and Fish Habitat

HCA staff suggest the report should consider and comment on the potential impacts of the proposed over-control of flows for the 2 and 5 year design storms (as per Tables 5.9 and 5.10) on downstream baseflows and aquatic habitat.

Storm Sewer Servicing

14. Pond 6.0 Inlet Pipe Design

HCA staff suggest the sizing and alignment of the inlet pipe to the proposed Pond 6.0 should be clarified. Figure 5.1 / 5.2 shows 1 x 1350 mm diameter inlet pipe at 0.8% located adjacent to MH22A. In contrast, Figure 5.6 shows two inlets with differing diameters, slopes and locations. Figure 5.6 also shows the majority of the inflows discharging to Pond 6.0 near the

downstream end of the forebay and at an inflow angle which may increase potential for scour within the SWM facility.

Hydrology and Hydraulics Models

15. Hydrology and Hydraulics Modeling Files

HCA would appreciate receiving a copy of all modelling files, including output files, for review.

Future Study Recommendations

16. HCA Assessments

It is recommended in Section 6.4.1 and Section 7.0 that HCA assess whether there is a surface water connection between the identified wetland complex at Barton Street and Glover Road to determine if this feature is regulated. HCA notes this assessment (confirmation) would be based on ecological inventory/assessment work completed by the any future proponent of development at this location. It might be helpful to clarify this in the recommendations.

17. Review and Consolidation of Recommendations

Both Sections 6.0 and 7.0 contain a number of recommendations for additional assessment and design work at the time of future development. Additional recommendations have been provided in the comments above. HCA suggests that in finalizing the report it may be helpful to review these sections to ensure all recommendations and future work requirements are adequately captured and summarized.

Thank you for the opportunity to review and comment on the draft report. HCA staff are available to meet to discuss these comments in more detail if that would be helpful.

Kind regards,

[redacted]

From: Kiddie, Melissa <Melissa.Kiddie@hamilton.ca>
Sent: September-08-17 10:37 AM
To: Fazio, Margaret
Subject: Block 2 Servicing Strategy-Natural Heritage Planning Comments
Attachments: Block 2 Servicing Strategy.doc

Hi Margaret,

Please find attached my comments on the Block 2 Servicing Strategy.

Thanks,

Melissa

Melissa Kiddie M.E.S (PI), ERPG
Natural Heritage Planner
Development Planning, Heritage and Design (Suburban Team)
Planning and Economic Development Department
71 Main Street West, 5th Floor
Hamilton, ON L8P 4Y5
Phone: (905) 546-2424 ext. 1290
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Hamilton

Planning and Economic
Development Department

Memorandum

To:	Margaret Fazio Senior Project Manager, Infrastructure Planning Growth Management		
From:	Melissa Kiddie Natural Heritage Planner Development Planning, Heritage and Design, Suburban Team		
Phone:	905-546-2424 Ext. 1290	**Fax:**	905-546-4202
Date:	September 8, 2017	**File:**	N/A
Subject:	**Block 2 Servicing Strategy-Draft Natural Heritage Planning Comments**		

Introduction/Background:
Natural Heritage Planning staff has reviewed the Draft Block 2 Servicing Strategy that has been prepared by Aquafor Beech Ltd. (July 26, 2017) and provides the following comments.

Comments:

	Section	Page	Comments
Section 1.0-Introduction	1.2 Study Purpose	1	A Terms of Reference was prepared for this project by the City. This should be referenced within this section.
Section 2.0-Existing Studies	2.2 SCUBE West Subwatershed Study	9	Within the section entitled "Natural Heritage System" it is stated "*As detailed in the EIS completed in support of the Block 2 Servicing Strategy, (the NHS is comprised of Core Areas (comprised of Key Natural Heritage Features, Key Hydrologic Features and Local Natural Areas and their associated Vegetation Protection Zones (VPZs)) collectively with Linkages comprise the Natural Heritage System (NHS)*." This should be revised to "*As detailed in the EIS completed in support of the Block 2 Servicing Strategy, (the NHS is comprised of Core Areas (Key Natural Heritage Features, Key Hydrologic Features and Local Natural Areas and their associated Vegetation Protection Zones (VPZs)) collectively with Linkages".* In addition it is noted that hazards such as floodplain and erosion hazard lands, constitutes constraints to development. It is the opinion of Natural Heritage Planning staff that the word "constraint" provides a negative connotation.
Section 3.0-Development of Existing Conditions		13	It is the opinion of Natural Heritage Planning staff that the title of this section should be revised to "Existing Conditions Methodology".
Section 3.0-Development of Existing Conditions	3.3 Aquatic Resources	14-15	a) On page 14, a figure (3.1) identifying fish habitat classification has been provided. Natural Heritage Planning staff is concerned that this figure has not been clearly labelled. In addition, Watercourse 6.1 has not been labelled on this figure. As a result, this figure should be updated. b) On page 14, it has been identified that a portion of Watercourse 6.1 was added to the watercourse mapping following a site visit. The date of the site visit should be

	Section	Page	Comments
			provided. c) On page 14, as an editorial note, this figure should be moved below “Figure 3.1, below” d) On page 15, Figure 3.1 has been duplicated. This should be removed.
Section 3.0- Development of Existing Conditions	3.4 Natural Heritage System	15-19	a) As an editorial note, a large space is located on page 15 under the section title. The information should be re-organized to fill up this space. b) On page 16, it has been identified that the City of Hamilton has taken a “nested” approach to natural heritage system planning. As a point of clarification, the City has taken a “systems” based approach to natural heritage planning, which is the same approach undertaken by the province. Both features and their functions need to be taken into consideration. c) On page 16 it has been identified that Linkages are “defined as landscape areas that connect Core Areas”. As a point of clarification, Linkages are natural areas within the landscape that ecologically connect Core Areas. This statement should be revised. d) On page 16 it has been stated that “the intent of the City’s natural heritage policies is to “preserve and enhance Core Areas and to ensure that any development or site alteration within them shall not negatively impact their natural features or their ecological functions”. Natural Heritage Planning staff is concerned that the policy number has not been referenced. This is policy C.2.3 within Volume 1 of the Urban Hamilton Official Plan (UHOP). This policy number should be referenced. e) On page 16 Policy 2.3.3 has been referenced. It is important to note that this is policy C.2.3.3 within Volume 1 of the UHOP. This statement should be revised with the

	Section	Page	Comments
			appropriate policy reference. f) On page 17, it has been identified that biophysical studies were completed in 2015. The timing of these studies should be provided. Further clarification is required on how these studies compare with the Terms of Reference. g) On page 17, it has been stated that “Core Areas of the Natural Heritage System consist of wetlands, significant woodlands, significant wildlife habitat and watercourses”. As a point of clarification, Core Areas are comprised of more than just these features. Is this supposed to be specific to the study area? Further clarification is required. In addition, it is important to note that significant habitat for threatened and endangered species has been identified as a Core Area within the UHOP. h) On page 17, it has been identified that “constraints and opportunities to development, which includes the NHS”. Natural Heritage Planning staff is concerned with the use of the word “constraint”. This provides a negative connotation. i) On page 18, Table 3.1 (Summary of Core Areas and Linkages within the Natural Heritage System) has been provided. Natural Heritage Planning staff is concerned that Species at Risk is missing from this list. In addition, Natural Heritage Planning staff is concerned with the discussion that has been provided for permanent and intermittent watercourses “Watercourses 6.0 and 7.0 are permanent watercourses as identified in Schedule B8 of the City of Hamilton’s Official Plan (2013)”. As a point of clarification, it is important to note that all types of watercourses (permanent and intermittent) are identified on Schedule B-8. j) On page 19, Figure 3.3 (Vegetation Community Map) the

	Section	Page	Comments
			vegetation communities have been identified. Natural Heritage Planning staff is concerned that the ELC community descriptions have not been provided. In addition, only 1 area has been identified as "not assessed". Natural Heritage Planning staff is concerned that this is not quite accurate since the property at the corner of Barton and Glover was not accessed as part of this study. Further clarification is required. The air photo that has been provided is not representative of the most-up-to-date information (church on east side of Glover Road has been removed). The City has 2015 air photos available. It is the opinion of Natural Heritage Planning staff that all figures using air photos should use the 2015 information.
Section 3.0-Development of Existing Conditions	3.5 Establishment of the Natural Hazards and Environmental Constraints Map	20	It has been stated "*as detailed in the EIS, nesting and foraging habitat for both barn swallow and bobolink is present within the study area. Following talks with the City of Hamilton, it is expected that habitat for barn swallow will be compensated for within the study area in a natural state adjacent to open parkland and wetland; habitat for bobolink will be compensated off-site*". Natural Heritage Planning staff is concerned with this statement. Since Species at Risk are under the jurisdiction of the Ministry of Natural Resources and Forestry (MNRF), any removal of habitat would need to be discussed with this agency. This statement should be revised. In addition, it has been stated that habitat for Barn Swallow and Bobolink habitat for these species is not shown as a constraint to development. Natural Heritage Planning staff is concerned that this statement does not match Figure 3.4 (Constraints and Opportunities to Development).

	Section	Page	Comments
Section 4.0-Development Plan	4.2.3 Concept Plan	26	It has been identified that "the location of these local road connections within the watercourse floodplain areas will be confirmed through an environmental impact review and HCA approvals during the development process that will follow the completion of the Block Servicing Strategy". It should be clarified that an "environmental impact statement" would be required and that the review of this report would be to the satisfaction of the City and HCA.
Section 6.0-Implementation	6.4.1 Recommendations for Further Study	76-80	a) On page 76 it has been identified that Watercourses 6.0 and 7.0 are candidates for restoration and re-vegetation. Since this will aid in future development applications, it is the opinion of Natural Heritage Planning staff that a high level discussion on the location and type of species should be discussed. Further discussion is required. b) On page 79, it has been identified that the woodland known as Woodland 6 in the SCUBE report was removed. As a point of clarification, this woodland was removed legally. c) On page 79, it has been identified that the completion of an EIS may be required for the properties that were not assessed. On page 80, specific inventories have been identified. It is the opinion of Natural Heritage Planning staff that this should be more general to provide more flexibility. The recommendation should be left general "the EIS should be prepared in accordance with the City's EIS Guidelines". d) On page 80, for the property located at the southeast corner of Barton Street and Glover Road, it is "recommended that the natural heritage designations and their accompanying designations and protections under the City of Hamilton's Official Plan and the policies of the HCA as detailed in this report remain". It is important to note that there are no Natural Heritage designations on this property as per the Fruitland-Winona Secondary Plan mapping (B.7.4-2) or the

	Section	Page	Comments
			UHOP Volume 1 Schedule B (Natural Heritage System). Further clarification is required.
Appendix E-Environmental Impact Study		6	a) It has been stated that "the NHS approach is a useful method for the protection of natural features and areas…" As a point of clarification, the "systems" approach has been identified in provincial policy for several years. b) It has been identified that the City of Hamilton has taken a "nested" approach to natural heritage system planning. As a point of clarification, the City has taken a "systems" based approach to natural heritage planning, which is the same approach undertaken by the province.
		7	a) There are several locations within the EIS where reference has been made to the City's Rural Official Plan (RHOP) (e.g. pages 7, 28, 30, 31). The study area is located within the Urban Hamilton Official Plan (UHOP). All references to the RHOP should be revised. b) In the second last paragraph ("connections between natural areas…"), it has been identified that Linkages are discussed in Section 0. This section does not exist. This reference should be changed. c) Policies within the UHOP have been quoted ("to preserve and enhance Core Areas…". Natural Heritage Planning staff is concerned that the appropriate policy reference has not been provided. The reference is UHOP Volume 1 policy C.2.3.
		8	a) Policy 2.3.3 has been referenced. It is important to note that the appropriate reference for this policy is UHOP Volume 1 policy C.2.3.3. In addition, other policies have been quoted. Natural Heritage Planning staff is concerned that appropriate policy reference has not been provided.

	Section	Page	Comments
			• New development and site alteration shall not be permitted within fish habitat, except in accordance with provincial and federal requirements (UHOP Volume 1 policy C.2.5.3). • New development and site alteration shall not be permitted within significant woodlands, significant valleylands, significant wildlife habitat and significant areas of natural and scientific interest unless it has been demonstrated that there shall be no negative impacts on the natural features or on their ecological functions (UHOP Volume 1 policy C.2.5.4). • New development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in Section C.2.5.2 to C.2.5.4 unless the ecological functions of the adjacent lands has been evaluated and it has been demonstrated that there shall be no negative impacts on the natural features or on their ecological functions (UHOP Volume 1 policy C.2.5.5). b) Within Section 2.2.1 Greenbelt Plan, it has been identified that the current version of the Greenbelt Plan is 2005. It is important to note that the Greenbelt Plan has been updated and came into effect July 1, 2017.
		10	a) Field inventory methodologies have been outlined within Section 3. A table should be provided outlining the field surveys completed and the dates they were completed. This aids in understanding if the surveys were completed during appropriate timeframes. b) Botanical Survey: It has been identified that only a fall survey was completed. How does this compare with the Terms of Reference? Generally a two season survey (spring and late summer/early fall) is to be undertaken.

	Section	Page	Comments
			c) Breeding Bird Surveys: It has been identified that breeding bird surveys were undertaken on June 4, 2015, June 18, 2015 and July 8, 2015. Generally two inventories are to be completed as part of this survey (1st between May 24 and June 15 and 2nd between June 16 and July 10th). Were two surveys completed at each location? Further clarification is required. d) Amphibian Calling Surveys: Although the dates have been included in Table 3.1 (Amphibian Survey Metadata), it is important to ensure that the timing for the studies was appropriate. The dates should be clearly identified. In addition, survey locations have been identified on Figure 3.2. It appears that the majority of the stations were completed at the roadside. Were appropriate locations not available on the properties where access was granted? Further clarification is required.
		15	It has been identified that DECW is located approximately 60 m east of the terminus of McDonald Lane. This has not been identified within Table 4.1 (Vegetation Communities identified within Block 2 Study Area) and Figure 4.1 (Vegetation Communities). Further clarification is required.
		18	Natural Heritage Planning staff has concerns with the information provided on Figure 4.1 (Vegetation Communities). As a result of these concerns, this figure needs to be revised. a) A description of the vegetation communities have not been provided for the ELC code (e.g. MAM2-Mineral Meadow Marsh) b) There are polygon numbers (1A, 10A, 10B) missing from the legend. c) As mentioned above, DECW is missing from the figure.

	Section	Page	Comments
			d) Only 1 area has been shaded as “area not assessed”. This is not quite accurate since the property at the corner of Barton and Glover was not accessed. e) There are areas that were assessed as part of SCUBE and not visited as part of the Block Servicing Study. As part of SCUBE were these sites ground truthed or were they identified through air photo interpretation? Has there been a change from the SCUBE study?
		21	Table 4.2 provides the results of the breeding bird survey. While the point locations have been provided, the connections to ELC communities are missing. As a result, the table should be updated.
		24	As an editorial comment, the pages appear to be mislabelled (23 is missing).
		26	a) Watercourse 6.1: it has been identified that this watercourse is characterized as indirect/supporting fish habitat until a “determination has been made by the Conservation Authority”. It should be clarified that this determination will be included as part of future development applications. b) Figure 5.2 (Fish Habitat Classification) identifies the watercourses within the study area. The label for Watercourse 6.1 is missing.
		27	It has been identified that a list of Species at Risk (SAR) was compiled from a variety of sources. One of these sources was the MNRF SAR list for Grimsby. It is important to note that the study area is within the limits of Hamilton. As a result, the list for Hamilton should be reviewed.
		29	As an editorial comment, it has been identified “in sum, though the monarch is present within the study area, there are no features of significance to the species”. This should be revised to “in summary, though the monarch is present within the study area, there are no features of significance to the species”.
		32	Within sections titled “Specialized Habitat for Wildlife: Special

	Section	Page	Comments
			Concern and Rare Wildlife Species" and "Seasonal Concentrations of Animals: Bat Maternity Colonies" it has been identified that details are provided in Section O. This section does not exist. Further clarification is required.
		35	Linkages have been identified as part of this study. How do these linkages compare to those identified within the Fruitland-Winona Secondary Plan? Further clarification is required.
		37	It has been stated that "*following talks with the City of Hamilton, it is expected that habitat for barn swallow will be compensated for within the study area in a natural state adjacent to open parkland and wetland; habitat for bobolink will be compensated off-site*". Natural Heritage Planning staff is concerned with this statement. Since Species at Risk are under the jurisdiction of the Ministry of Natural Resources and Forestry (MNRF), any removal of habitat and compensation would need to be discussed with this agency. This statement should be revised.
		37	a) As an editorial note, there are two pages identified as 37. b) Table 11.1 (Summary of Core Areas and Linkages within the Natural Heritage System) identifies Linkages. How do these Linkages compare to those identified within the Fruitland-Winona Secondary Plan? Further clarification is required. c) It has been noted that Watercourses 6.0 and 7.0 are permanent watercourse identified in Schedule B-8 of the UHOP. As a point of clarification, watercourses have not been denoted as intermittent or permanent on this schedule.
		41	It has been stated that habitats of barn swallow and bobolink are "expected to be compensated under the Endangered Species Act permitting process". Natural Heritage Planning staff is concerned with this statement. The MNRF implements the permitting process. Further discussions will need to occur with this agency.
		42	Figure 13.1 (Constraints and Opportunities to Development)

	Section	Page	Comments
			identifies the Core Areas. It is unclear if Linkages have been included within this mapping? Further clarification is required.
		44	It has been identified that restoration downstream of Watercourse 6.0 and all of Watercourse 7.0. Natural Heritage Planning staff is concerned that a high level discussion on the location and type of restoration has not been provided. Further clarification is required.
		45	Within the Recommendations, it has been identified that HCA will determine the status of Watercourse 6.1 and assess whether there is a surface water connection between the wetland complex at the corner of Barton Street and Glover Road. It is important to note that this should be completed at the development application stage.

Recommendations:
Based on the above comments, it is the opinion of Natural Heritage Planning staff that the Draft Block 2 Servicing Strategy should be revised.

If you have any questions, please contact me at (905) 546-2424 ext. 1290.

[redacted]

From: [redacted]
Sent: November-30-17 4:49 PM
To: Fazio, Margaret
Cc: Moniruzzaman, Monir
Subject: Block 2 City Comments
Attachments: Block 2 City Comments_Nov 2017.docx

Hamilton

Planning & Economic Development

Memorandum

Date: November 27, 2017

To: Margaret Fazio, Senior Project Manager
Infrastructure Planning

From: Monir Moniruzzaman, Senior Project Manager
[redacted]
Infrastructure Planning

Re: Block 2 Servicing Strategy- Fruitland Winona Secondary Plan Lands

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Infrastructure Planning Staff have reviewed the Block 2 Servicing Strategy for the Fruitland Winona Secondary Plan Lands, prepared by Aquafor Beech Ltd., dated July 26th, 2017. We wish to provide the following comments.

BLOCK 2 SERVICING STRATEGY

The study report should be signed and stamped by a Qualified Professional Engineer.

FLOODPLAIN MANAGEMENT

1. It is our understanding that the floodplain management for WC 6.0 between HWY8 and Barton Street is subject to other infrastructure improvements such as removal of two houses from the existing floodplain, the installation of a new culvert on Barton Street and channel improvements works north of Barton St. As such, these areas should be marked as "further assessment required".

2. The required culverts on Barton Street across WC 6.0 should be designed to convey 100 year existing condition flows, as post development flow with SWM controls should be equal to or less than the existing condition flows. Please note that these upgraded culverts should not be required to facilitate the developments as mentioned in SCUBE Ph 3 implementation report.

3. Please demonstrate that the existing WC 6.1 culvert at Barton street can convey the controlled flows and emergency overflow from SWM facility 6.1, meeting the City standards.

4. What about WC 7.0 between Glover Road and HWY #8?

5. Functional design should be provided for all future creek crossing structures on the proposed roads, as per City standards.

6. The report noted inconsistent type of WC6 culverts at Barton street. It is our understanding that the existing culverts are 1.9m×1.3m CSP and 1.25m circular concrete pipe. Please verify and confirm the culvert characteristics.

7. Figure 3.1 is repeated in pg 14 and 15. One of them can be removed.

NATURAL HERITGAE SYSTEM (NHS)

8. **Figure 3.3**: we note that the areas that are not assessed during this block servicing study, will be further studied at draft plan application stage.

9. The woodlot at [redacted] are already removed by the owners. But all the constraint maps in the report are still showing the woodland and unevaluated wetland on these properties. The constraint map and the recommendations for future assessment should be updated to reflect the current conditions.

ROADS/GRADING

10. Functional design (plan and profile) of Glover Road and North-south collector road should show the existing/proposed services (storm, sanitary and water). Adequate vertical clearance (as per City standards) between municipal services should be confirmed and any potential conflict should be identified.

11. Block servicing study should demonstrate interim design details for all proposed intersections at the existing roads to facilitate orderly development.

12. Functional design should be provided at the proposed round-about of North-south collector and East-west connection, demonstrating a suitable overland flow route to the proposed SWM facilities.

13. We note that minimum 0.6m cover is proposed for local road watercourse crossings. Please demonstrate that the pavement structure can be accommodated, with necessary backfill (if required).

14. **Glover Road**:

- **a)** It is our understanding that Glover Road will have roadside ditches, instead of storm sewer. Please clarify why DCBs/CBs/proposed storm manhole are shown all drawings, while no storm sewer is shown.
- **b)** As per City official plan, Glover Road should be a 26m ROW from QEW to HWY8.
- **c)** The sidewalk should be at the opposite side of the roadside ditch.
- **d)** 2:1 slope in the roadside ditches cannot be supported. Maximum 3:1 slope should be provided.
- **e)** Sheet 3: please clarify why a 23m road allowance is shown. It should be 26m.

15. **North-south collector road**: the multiuse pathway from Jones Road to the neighbourhood park cannot fit within the local road. Sidewalks on both sides should be adequate to provide pedestrian connectivity to the park.

16. Figure 5.8 and 5.10-Grading Plans:

- **a)** The grading plans should include all existing road grades (Barton street, Glover Road and HWY8); grades along the NHS, grades of 269 Glover Road and existing properties fronting HWY8.
- **b)** Pond grades should also be included and any berm requirements along Barton street should be identified.
- **c)** The proposed grades for the lots/blocks are back to front, which requires minimum 2m separation between the foundation walls, as per City standards. This strategy with no rear lot catchbasin will direct lots of flows over sidewalks. It may not be acceptable and consistent with zoning. Please evaluate the option of providing split drainage.

STORM SERVICING AND STORMWATER MANAGEMENT

17. Minor and Major Storm Servicing (Figures 5.7 and 5.9):

- **a)** Please justify why ditches are proposed along local road 11 (MH7B to MH6B), local road 8 (MH 3B to 1B) and local road 13 (MH 22A to 1A, 2A to 1A). Ditches will not fit in the local road. The minor system should consist of storm sewers.
- **b)** For some catchments within Pond 6.1 drainage area, major flows are directed to WC 7.0. Please consider total capture catchbasins (TCBs) to pick up the major flows into the minor system. If uncontrolled flows are sent to WC 7.0, then hydrologic assessment of this watercourse will be required to demonstrate that the existing flows can be met.
- **c)** Major flows from the intersection of local roads 9 and 8 are currently bypassing Pond 6.1 and draining to the creek. TCBs should be considered at this intersection to direct flows to the pond.
- **d)** Hydraulic grade line assessment should be provided for storm sewer system.
- **e)** Generally pond design governs the depth of cover. For all SWM facilities, the upstream storm sewer inverts should be set higher than the 100-year pond operating level. An exception may be considered for few runs connecting into the pond, depending on the site constraints. Otherwise, 5-yr HGL should be within the obvert of the pipes. 100-year HGL should be 0.3m below RLCB top and the road grade.
- **f)** Please confirm the number of storm sewer inlets to Pond 6. Figures 5.6 and 5.9 are showing 2 inlets, while figures 5.1, 5.2 showed one inlet.
- **g)** Figure 5.9 is inconsistent (ditch, sewers) with figure 5.6.
- **h)** With minimum 1.2m cover on storm sewers (noted in pg 56), there is a potential for conflict with watermain. Please verify.

18. Strom Sewer Design Sheet:

- **a)** Please verify the title of area B and area C design sheet. Rymal Road is noted.
- **b)** Please clarify why a design sheet using storm sewers is prepared for Area C. Roadside ditches are proposed for Area C local streets and a ditch cross-section should be developed to demonstrate adequate capacity.
- **c)** Please verify area of subcatchment A22 and ensure consistency with storm drainage plan.

19. Figure 5.5 and 5.6 (Storm Drainage Plan):

- **a)** Please provide full size pre- and post-development drainage area plans, showing the existing and proposed drainage outlet of all existing roads. The plans should show drainage from south of HWY8 to WC 6.0.
- **b)** Please clarify the storm servicing strategy for future urbanized Barton street. Currently the pond design did not consider any drainage from Barton street. If Barton street

cannon drain to the proposed ponds due to grading constraints, then alternative servicing strategy (conveyance, quality and quantity control) should be established.

c) Please justify why 884 Barton street, development lands immediately east and west of North-south collector roads are not accommodated within the proposed SWM facilities. A suitable outlet should be established for these lands.

d) Winona Vine Estates (269 Glover Road) is a recent development and is not likely to develop in the short or long term (noted in pg 66). If so, then local roads 10 and 11 west of Glover Road will not be feasible. An interim drainage outlet should be established for this parcel of land.

e) Please clarify the drainage outlet of 795 and 805 HWY 8 (John Knox Christian school and Fruitland Christian reformed church).

f) For Area C (to WC 7.0), onsite Stormwater management is proposed with outlet to roadside ditches along future local streets. Please provide a cross-section of the local streets to demonstrate that the roadside ditch can be accommodated within the street. Recommendations should be provided for quality and quantity control of this area.

g) Please quantify drainage from east of Glover Road to the roadside ditch (MH 9C).

h) **Fig 5.6**: Please use a legible and differentiable legend for subcatchment boundary. The individual subcatchment boundaries are hard to read at some places. Catchment area and runoff co-efficients are also not legible.

20. SWM Facility Design Criteria:

a) The SWM ponds should be designed for a higher imperviousness, 52% is too low. As per City standards, even for single houses 60-65% imperviousness are suggested. We note that Block 2 will have single and medium density residential development. In addition, the storm sewer design sheet in Appendix A used a runoff co-efficient of 0.75 for the developed areas. Therefore ponds should be designed for 75% imperviousness to ensure consistency. Please provide imperviousness calculations.

b) The SWM ponds should be designed to provide Level 2 (Normal) quality control for contributing drainage, as per SCUBE study recommendations.

c) SCUBE ponds 3 and 4 were designed for average 50% imperviousness, while the current proposed ponds will have higher imperviousness. Therefore, SCUBE storage requirements will not be applicable for ponds 6 and 6.1. Pond rating curves (i.e. stage-storage-discharge curves) should be verified by the SCUBE West baseline hydrologic model (Visual Otthymo model) to identify/verify the storage requirements and demonstrate that the existing flow targets at Barton street can be met.

- The future condition hydrologic assessment of WC6 should consider development in both Blocks 1 and 2. Co-ordination with AMEC will be required, who is the engineer for Block 1 servicing study.
- A comparison of existing and future flows at various nodes of WC 6 and WC 6.1 should be provided.

d) We note that Pond 6 erosion control target flow is set same as SCUBE Pond 3, which was proposed west of Watercourse 6. However, the flood control target flow is set same as Pond 6.1/SCUBE Pond 4, which outlets to watercourse 6.1. Please justify why instead of 40.6 l/s/ha, 55.7 l/s/ha is used as the 100-year target flow rate for Pond 6.

e) Please clarify the Erosion control requirement for the ponds. Current report identified 5-year event for erosion control, which is not consistent with SCUBE study.

21. Pond 6 and 6.1 Design (General Comments):

- **a)** Full size drawings should be provided for both SWM facilities showing pond grading, the adjacent existing/proposed grades, channel grades, Barton street ROW limits, etc.
- **b)** Pond cross-sections should show pond geometry (i.e. depth, side slope, etc.) and the channel cross-section demonstrating the 2-year, 5-year and 100-year creek water levels. Relevant HEC-RAS cross-section ID should be labelled.
- **c)** Pond cross-sections should show the Barton Street future ROW limit and a 5m buffer should be provided from the ROW limit.
- **d)** Overall, proposed SWM facilities in SCUBE area will be very flat, resulting in huge permanent pool volumes, which will eventually become an operational and maintenance burden for the City. Pond design should be optimized to avoid the additional permanent pool volume. Please evaluate different options, such as raising the pond bottom close to permanent pool elevation, staging of pond bottom, etc.
- **e)** Permanent pool elevation for both ponds should be set above the 100-year creek operating level (i.e. WC 6 for Pond 6 and WC 6.1 for Pond 6.1).
- **f)** Pond outlet should be set at 2-year creek operating level, as a minimum (i.e. WC 6 for Pond 6 and WC 6.1 for Pond 6.1).
- **g)** For both ponds, please provide the following calculations:
  - Stage-storage-discharge calculations, considering static conditions;
  - Drawdown time calculations based on MOE equation;
  - Forebay settlement length calculations;
  - Decanting area sizing calculations and cleaning frequency.
- **h)** Please clarify the configuration of the extended detention and flood control outlet structure.
- **i)** Please clarify how major flows will be diverted to the pond main cell. Will there be a major overland flow route to the main cell, or a flow splitter manhole will be required?
- **j)** Ponds should be designed with a minimum 0.10m freeboard from the 100-year water level to the invert of emergency spillway; and 0.30m freeboard between the high water level within the spillway and top of pond.
- **k)** Decanting area should be sloped at min 2% to the forebay. Please verify the decanting area configuration for pond 6.1.
- **l)** Tables 5.11 and 5.12 should include a column for pond active storage. Table title should be revised as “Stage-Area-Storage Relationship”.
- **m)** Tables 5.9 and 5.10: please clarify what is meant by pre-development volume. The 2-year release rates appear to be TYPO.
- **n)** Section 5.7.4 to 5.7.9:
  - The 5-year inlet flow rates for forebay dispersion length calculation are not consistent with tables 5.9 and 5.10.
  - Please optimize forebay length to width ratio to provide min 2:1.
  - Table 5.13: there appears to be ta typo for Pond 6 length and width. The ratio seems to be only 1.2.

22. Pond 6 Design (Figures 5.1, 5.2):

- **a)** As per section 5.5.3, 100-year flood elevation within watercourse 6.0 in the vicinity of the pond ranges from 87.27m to 87.31m. But figure 5.2 is showing a different 100-year WL. Please verify and confirm.
- **b)** Please clarify why an outlet channel is proposed, instead of a direct outlet to WC 6.0.
- **c)** Maintenance access should be provided from Barton street. Access road on the creek side is not a preferred option.

23. Pond 6.1 Design (Figure 5.3):

- **a)** Pond inlets and outlets are very close, which may lead to short circuiting. Pond configuration should be revised to avoid short circuiting and maximize the usage of longer flow path to ensure a minimum 3:1 length-width ratio for the pond (length should be measured along flow length).
- **b)** Please clarify why an outlet channel is proposed, instead of a direct outlet to WC 6.1.
- **c)** Please clarify whether a berm is required at Barton street side, to accommodate the emergency spillway.

24. Hydrologic Model: it is our understanding that the PCSWMM model is used to verify pond performance only and pond design target flows will be based on SCUBE study. Please clarify why existing condition is modelled. Digital PCSWMM model files should be included with the report.

HYDROGEOLOGICAL ASSESSMENT

25. A Hydrogeological Assessment Study should be provided for Block 2, as per terms of reference.

SANITARY SEWER SERVICING

26. Figure 5.12-Sanitary Drainage Area Plan:

- **a)** Please clarify the sanitary outlet of [redacted] There are no sanitary sewers along HWY8.
- **b)** Please confirm the sanitary outlet for potential development at [redacted] the parcel of lands immediately east and west of North-south collector road.
- **c)** The proposed sanitary sewer along HWY8 should be extended westerly upto Block 2 limit, to ensure sanitary outlet for potential developable lands fronting HWY8.
- **d)** As per City standards, for last run a 200mm sanitary sewer can be provided at a minimum 0.75% slope. The proposed 200mm sanitary sewer at 0.1% slope along local road 8 (from MHA 12 to MHA 11), is in contrary to City standards. Please revise.
- **e)** The 250mm sewers from MHA 27 to MHA 4, MHA 40 to MHA 8, MHA 29 to MHA5 are extremely flat (0.1 to 0.2% slope). These pipes will not meet the City standards for minimum cleansing velocity requirement (0.75 m/s). Please revise.
- **f)** Please indicate the external area south of HWY8 that is included in the Glover road sanitary catchment area (noted in section 5.10.2, pg 65).
- **g)** 288 Glover Road proposed connection to the existing sewer along Barton street, which outlets to Glover road sewer system. Therefore this area should be added for Glover road sanitary sewer assessment.
- **h)** Pond 6.1 location is not consistent with other figures. Please revise.
- **i)** Please use a legible and differentiable legend for subcatchment boundary. The individual subcatchment boundaries are hard to read at some places.

27. Please clarify what sanitary sewer upgrades (lowering and/or upsizing) are required along Barton street and Glover Road, as noted in the report.

28. Sanitary Sewer Design Sheet (Appendix A2):

- **a)** Barton street sanitary sewer assessment should be extended to Jones Road, to identify any necessary upgrade requirements.
- **b)** Glover Road sanitary sewer assessment should be extended upto the 525mm sewer north of Barton street at a minimum (and further as required), to identify the necessary upgrade requirements. This system is receiving flows from area C, area B, 288 Glover Road and additional areas fronting on Barton street.
- **c)** Please verify the sanitary peak flow calculation for area A32. The peak flows are over estimated. With a peaking factor of 5 and average flow of 0.37 m^3/s, the peak flow should be 1.9 m^3/s. The design sheet noted 4.6 m^3/s.
- **d)** Please verify the flow calculation for area A4. The cumulative area and population seem to be over estimated.
- **e)** Please verify the slope of existing 375mm sewer from manhole CEXT1 to C2, 1.6% slope is used which is not consistent with City records.
- **f)** MHA2 will receive additional drainage from east. It should be added.
- **g)** There are multiple inconsistencies between the design sheet and the sanitary drainage area plan, especially for sewer slopes. Based on drainage plan, 250mm sewers from MHA 27 to MHA 4, MHA 40 to MHA 8, MHA 29 to MHA5 are extremely flat (0.1 to 0.2% slope); and 200mm sewer from MHA12 to MHA11 is 0.1%. However, design sheet used more than 1% slope for all these sewers. Please ensure consistency and revise the pipes (as required) to meet City standards.
- **h)** Population density should be rounded number.

WATERMAIN DESIGN

29. Watermain Hydraulic Report:

- **a)** The report should be signed and stamped by a Qualified Professional Engineer.
- **b)** Digital model files should be provided.
- **c)** Please provide a larger/expanded diagram for the model study area, shown in Figure 2. Hard copies of model output files should be provided, with results at different nodes.
- **d)** Please clarify how the demand population of 3900 is calculated.

30. Figure 5.11-Watermain Plan: adequate watermain looping should be provided to ensure sufficient redundancy. We note that the following locations do not have looping:

- Area C, east of WC 7.0;
- Cul-de-sacs at local road 1 and 11.

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: December-15-17 2:31 PM
To: Mahood, Alissa
Cc: Dave Maunder [redacted]; Moniruzzaman, Monir; Yong-Lee, Sally
Subject: Block 2 Requested PIC information for June 5, 2018 OMB hearing

Importance: High

Hi Alissa,

As requested, the following Public Consultation efforts took place for Block 2 SS:

1. **PIC#1 - APRIL 4, 2017**

- Coordinated for Blocks 1 and 2, and Gordon Dean EA within Block 1.
- PIC #1 Notices were online, Tweeted, published in Stoney Creek News – 1 and 2 weeks prior to PIC, and mailed out to all Block 1 and 2 Land owners. City staff only contacted land owners within their area, Block 1 land owners were notified by their consultant team (Wood. – previously known as Amecfw).
- Block 2 land owner mailing list includes all land owners, and together with sign in sheets & comments they can be found via the following link:

S:_Temporary Folder\BLock 2 SS - OMB - June 5 2018\PIC#1

2. **PIC#2 – June 8, 2017**

- Coordinated for Blocks 1, 2 & 3
- PIC Notices were provided online, Tweeted, published in Stoney Creek News – 1 and 2 weeks prior to PIC and mailed out to all blocks' land owners, with each Block being responsible for their own mail outs. City staff, therefore, only contacted Block 2 land owners, Block 1 was notified by Amecfw, and Block 3 by Urbantech staff.

- Block 2 land owner mailing list for this mail out, sign in sheets, etc., can be found via the following link:

S:_Temporary Folder\BLock 2 SS - OMB - June 5 2018\PIC#2

All notices and PIC panels were and are still available since the day after each PIC, on the project webpage, via the following url:
https://www.hamilton.ca/city-planning/master-plans-class-eas/block-servicing-strategies-stoney-creek-and-gordon-dean-class

3. **Additional Information:**

It is my understanding that Paul Brown was working for the Block 2 land owners from the start – i.e. from prior to PIC#1, although I he is no longer working for the same company – Urbantech, through which he was originally hired. He was signed in and present at both PICs, and was present there, on behalf of his clients in Block 2.

There was also a meeting which took place at a request of Block 2 Land Owners, arranged via [redacted], after PIC#2. The result of this was first a letter from [redacted] to City staff, dated June 22, 2017, when information was requested prior to OMB hearings taking place, and a response was sent from [redacted] and [redacted] on July 28, 2017.

If further questions arise in my absence please contact Sally since both Monir and I are away from Dec 18 until New years'. Monir will return on January 2, 2018 and I'll return on January 8th, 2018.

I hope this helps?

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: April-28-17 10:46 AM
To: [redacted]; Dave Maunder ([redacted]); Yong-Lee, Sally; Moniruzzaman, Monir; [redacted]; Mahood, Alissa; Kiddie, Melissa; [redacted]
Subject: COMBINED Block Servicing Strategies 1, 2 & 3 PIC No 2 Dates and Overall Schedule - BLock 2 Q&A - Comment from COH

[redacted]

What is your ideal timeline for submission of the report – in support of PIC materials?

The tertiary plan/community structure plan to PIC should be dependable from all servicing (transportation , grading ,storm & sanitary, watermain and SWM) and air drainage perspectives, so defendable at the PIC.

In order for us to support your PIC materials we would need to review supportive documents outlining at least key issues and constraints, prior to PIC – and provide us some time to do that (2 weeks).

The tertiary plan/community structure plan to PIC should be derived from all servicing (transportation , grading ,storm & sanitary, watermain and SWM) and air drainage perspectives.

Please let us know if you are still OK to proceed with the proposed schedule.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: [redacted]
Sent: April-27-17 3:25 PM
To: Fazio, Margaret; Dave Maunder (maunder.d@aquaforbeech.com); Yong-Lee, Sally; Moniruzzaman, Monir; [redacted]; Mahood, Alissa; Kiddie, Melissa; Ng, J[redacted]
Subject: RE: REQUEST FOR COMMENTS: COMBINED Block Servicing Strategies 1, 2 & 3 PIC No 2 Dates and Overall Schedule

Good afternoon Margaret,
I wanted to clarify one thing with you. Are you saying per item 3 below that the draft BSS' have to be submitted by May 26 in order to make the combined PIC in June? If this is the case then we cannot make this timeframe work for Block 3. Please clarify.

Thanks,
Rob

[redacted]

Urbantech® West, A Division of Leighton-Zec West Ltd.
2030 Bristol Circle, Suite 201 • Oakville• ON • L6H 0H2
[redacted]

From: Fazio, Margaret [mailto:Margaret.Fazio@hamilton.ca]
Sent: April 25, 2017 12:08 PM
To: Dave Maunder[redacted] Yong-Lee, Sally <Sally.Yong-Lee@hamilton.ca>; Moniruzzaman, Monir <Monir.Moniruzzaman@hamilton.ca>; [redacted]; [redacted] Mahood, Alissa <Alissa.Mahood@hamilton.ca>; Kiddie, Melissa <Melissa.Kiddie@hamilton.ca>; Ng, Jeffrey <Jeffrey.Ng@hamilton.ca>; [redacted] Lorissa [redacted] Ann <Ann.Lamanes@hamilton.ca>
Subject: REQUEST FOR COMMENTS: COMBINED Block Servicing Strategies 1, 2 & 3 PIC No 2 Dates and Overall Schedule
Importance: High

Hallo!

Thank you keeping in touch post PIC#1 – you know who you are☺
We now have a combined PIC No 2 to plan for June of this year.

The dates are starting to get taken up by other projects, so to make sure we settle on a date that works for all of us we need to pick a date ASAP.

(The dates cannot be on days of Planning Committee meetings, or Council Meetings, the Ward Councillor needs to be present (available), and they cannot conflict with other PICs.)

Proposed/Tentative for our Combined PIC are as follows:

1. Friday: **June 9, 2017** – BOTH - 3:30 – 5:00, and 6:00 – 7:30 p.m.
2. Friday: **June 16, 2017** – BOTH - 3:30 – 5:00, and 6:00 – 7:30 p.m.

(June 8th or 15th may free up – we will know by Monday – please advise if one of those would work better than a Friday).
I can forward a Doodle Poll to ascertain specific availability once the general timeline is agreed upon –

Please advise by Friday, April 28, 2017, or sooner if possible.

Working backwards from June 9:

1. Notice for the earlier PIC would need to be finalized by May 17, 2017, and we want to advertise only once the PIC panels have been finalized. (Draft notice to be circulated by City to Blocks by May 9, 2017, and feedback from Blocks by May 15th)

2. PIC panel drafts – to be sent for comment to City staff by May 8, 2017. (Staff to comment back by May 15th, 2018)

3. The Draft Reports to be submitted for City's review by – May 26, 2017.

4. City's review of Draft Reports – by June 16, 2017 (PIC public comments to be included in later submissions).

5. Re-submission of 2nd Draft of Reports – July 17, 2017 (Gordon Dean EA – ESR ?)

6. City's Comments on 2nd Draft of Reports – July 31, 2017

7. Submission of Final Draft – August 7, 2017

8. Staff writing Information Report to Council, based on all three Block SS Plans based on all FINAL REPORTS, and submit to approval cycle before Planning Committee, by August 25, 2017, to meet the Planning Committee date of October 31, 2017.

Dave, please forward your amended Microsoft Project Gantt chart, to reflect the above schedule by **Friday, May 5, 2017**.
We anticipate we'll need a meeting with HCA – will set something up shortly.

[redacted] We understand that HCA is still waiting for some information from your team, in order to reconcile the model, as of yesterday. [redacted] will take a look and let us know by the end of this week if well is well. I will send a meeting invitation for a meeting for Blocks 1 & 2 in relation to WC 6.0, with HCA – tentatively, to use if needed in May 2017, in order to accommodate any differences' resolution in a timely manner. – Could you also forward an amended a Microsoft Project Gantt chart – if available?
[redacted] - Please advise.

[redacted]– our meetings have been set for May 8 & 9, for Table of Contents and Water Resources, respectively.

Please let us know your thoughts on this/propose alternatives, etc., as soon as you can, so we can align/re-align where necessary.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: November-22-17 9:36 AM
To: Dave Maunder ([redacted]; Ash Baron
Subject: Development of government response statements in relation to final recovery strategies for six speciesa at risk

Hi,

FYI below. Just wanted to confirm that this notice will not affect our Block 2 natural heritage findings?

Thank you,
Margaret

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

www.hamilton.ca/canada150

From: [redacted]
Sent: November-21-17 8:19 PM
To: Fazio, Margaret
Subject: "planning" in New Policy Proposal Notice: Title: Development of government response statements in relation to final recovery strategies for six specie...

"planning" in New Policy Proposal Notice: Title: Development of government response statements in relation to final recovery strategies for six species at risk pu

Title:	Development of government response statements in relation to final recovery strategies for six species at risk published on June 15, 2017 in accordance with the Endangered Species Act, 2007
Ministry:	Ministry of Natural Resources and Forestry
Date Proposed:	2017-11-21
Comment Period:	45 days: submissions may be made between November 21, 2017 and January 05, 2018.
Comment Deadline:	2018-01-05 (please check the registry to confirm deadline)

URL: http://www.ebr.gov.on.ca/ERS-WEB-External/...

Registry #: 013-0751

1 Excerpt Mentions "planning":

"...age 1 posting and the recommendations contained within the recovery strategies were considered in the development of the proposed government response statements.

The public is invited to provide feedback and submit comments on the draft government response statements for Blunt-lobed Woodsia, Colicroot, Eastern Small-footed Myotis, False Hop Sedge, Lowland Toothcup and Scarlet Ammannia.

Comments must be submitted by January 5, 2018:

• By email at recovery.planning@ontario.ca

• By fax at 705-755-2901

• By mail at:
Recovery Planning
[redacted]
Senior Policy Advisor
Species Conservation Policy Branch
Ontario Ministry of Natural Resources and Forestry
300 Water Street, 5N
Peterborough ON K9J 8M5

The following web-links provide additional information about this notice:

• Draft government response statements for review:
Blunt-lobed Woodsia https://apps.mnr.gov.on.ca/ebr/docs/draft-grs-blunt-lobed-woodsia.pdf
Colicroot https://apps.mnr.g..."

Dear [redacted],

We will answer the questions, as below, and follow with the attached comments' responses, where new questions have been raised, as follows:

1. The designation of Watercourse 6.1: Has been determined by the Hamilton Conservation Authority in the field as a potentially connected feature to the wetland in the [redacted], to the east of your property, at the time of the last field visit – June 2016. Due to lack of permission to enter to that property by its previous owner, the confirmation of whether the wetland needs to be protected remains unresolved now, until an Environmental Impact Assessment can be provided by the current owner, at the time of any development applications, since the time for site visits has now passed in our study period. This confirmation needs to be conducted during the highest water flows – Spring rains, which is why we and the Hamilton Conservation Authority staff were pursuing that permission with you now as well. To date, the new permission to enter has been ignored by the new land owner, and yourselves.

2. The original site visits have indicated a drainage connection as well as ecological identification of rare species, the precise location and name of which cannot be released to anyone outside of the study team, for their protection and preservation.

3. The length of the Watercouse 6.1 has been confirmed based on observed site visit, and topography of the area in June 2016. _Dave – please confirm.

4. New items shown on property – New Stormwater Pond and Bird Buffer Zone.

    a. The Stormwater Pond's location was determined based on drainage patterns of the entire area, delineated on one of the panels at the PIC. The Fruitland-Winona Secondary Plan's Stormwater Master Plan determined the general needs for the area, and at the time did not specify their location. The policies in the Secondary Plan determined that it would be necessary for the Block Servicing Strategies to make that determination, based on drainage needs, other servicing needs, including local road locations, general topography of the area, among others, as which we are doing now.
    b. Bird Buffer Zone – was determined previously, and it serves to protect a certain habitat to species at risk.

5. Barton and Fifty Road Improvements Phases 3 & 4 EA – you ask why the Focus Group was not mentioned at this PIC. The Barton and Fifty Road Improvements EA is being coordinated with Block Servicing, but they are independent studies, and Block Servicing would feed information into Barton and Fifty Road EA.

6. Property lines – Dave?

7. "H" designation not clear – Alissa?

8. Your cooperation in the past is most appreciated. As explained above, some information cannot be released with regard of species at risk at this time. Other technical studies are developing/ongoing throughout the study process, so technical information will become available later this year – anticipated by the next PIC in June.

Please let me know if you wish to add anything else.

From: [redacted]
Sent: Monday, April 10, 2017 8:09 AM
To: [redacted]
Cc: Fazio, Margaret; [redacted]
Subject: Block 2 Servicing Strategy Fruitland-Winona Secondary Plan

Good morning Mr. Maunder,

We spoke at the Public Information Centre in Stoney Creek last Tuesday, April 4th in regards to the second Block 2 Servicing Strategy map. We received Map No. 1 at the second session of Public Meeting No. 1 on December 7th, 2016. My parents attended the first meeting on December 2nd as well, but there wasn't a sufficient map available. In speaking with my brother, [redacted] last Tuesday you mentioned that I had not contacted you although I informed you that I had done so. You also stated that we had refused property visits, although I informed you that Aquafor had already visited our property on more than one occasion (June, August 2016 and maybe more), and we have not been able to get reports or information resulting from those visits.

On January 12th, 2017, I spoke with [redacted] of Dillon Consulting Limited regarding watercourse 6.1 on Map No. 1. He informed me that he created Map No. 1 in November 2016 with the data provided to him by Aquafor Beech Ltd.

I telephoned you that same afternoon, Thursday, January 12th, 2017, and left two messages asking for you to call me back. The number I phoned, 905-629-0099, was provided on the comment sheet by the City of Hamilton at the first public meeting on December 2nd. I also telephoned and left a message for Ms. Ash Baron in Guelph, at 519-224-3733, to call me back. I was not contacted by either Ms. Baron or yourself.

The email below, although showing was sent from my iPhone on January 21th, 2017, does not appear to have actually been sent. As per my phone messages in January, and my verbal requests at the PIC meeting last Tuesday, April 4th, it still remains that we would like the information pertaining to Aquafor Beech Ltd.'s visits to [redacted] in Stoney Creek. We are questioning the determination of the watercourse which is a man-made ditch that my brother and father created. We would like to review the scientific data which changed a ditch to a watercourse and its subsequent extension south and west. We would also like to know how it was scientifically determined that two more swm ponds be located in Block 2 on this April 4th map,

specifically the one on our property, when there was only one pond shown at the far west on Map No. 1 in December 2016.

We would like to meet with you, Ms. Margaret Fazio and Ms. [redacted] our Ward 11 Councillor, on these matters.

Sincerely,

[redacted]
On behalf of Quinto, Giovanna and Enrico Simone

Hello Ms. Ash Baron, B.E.S.,

I'm writing in regards to the Block 2 Servicing Strategy for the Fruitland-Winona Secondary Plan Lands Public Meeting No. 1 map which was created by Dillon Consulting Limited in November 2016.

On June 9, 2016 you visited [redacted] on behalf of the City of Hamilton. Aquafor Beech forwarded information to Dillon Consulting in order to create this map.

I'm looking for a copy of your report as a result of your visit to [redacted]t, Stoney Creek.

Also, I would like the interpretation of your findings in determining the waterways for the Block 2 Servicing Strategy, specifically Watercourse No. 6.1.

Sincerely,

[redacted]

Sent from my iPhone

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: March-14-18 9:26 AM
To: Ash Baron; Dave Maunder [redacted])
Subject: FW: Block 2 Servicing Strategy Consolidated Comment Response-Natural Heritage Planning Comments
Attachments: Block 2 Servicing Strategy Comment Table Review.doc

Hi,

Aside from the Table of Comments that we are finalizing, Melissa sent her comments separately - earlier - attached.
Perhaps sending them as such will expedite the finalization process?

P.S. There were no comments in the Table for Watermain related portion. I have called [redacted] and he'll get back to me. We'll keep you posted.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: Kiddie, Melissa
Sent: March-05-18 3:22 PM
To: Fazio, Margaret
Subject: Block 2 Servicing Strategy Consolidated Comment Response-Natural Heritage Planning Comments

Hi Margaret,

Please find below my comments on the Block 2 Servicing Strategy Consolidated Comments prepared by Aquafor Beech. If the original comment has not been referenced, Natural Heritage Planning staff is satisfied with the response that has been provided.

Thanks,

Melissa

Melissa Kiddie M.E.S (PI), ERPG
Natural Heritage Planner
Development Planning, Heritage and Design (Suburban Team)
Planning and Economic Development Department
71 Main Street West, 5th Floor
Hamilton, ON L8P 4Y5
Phone: (905) 546-2424 ext. 1290
Fax: 905-540-5611
E-mail: Melissa.Kiddie@hamilton.ca

Hamilton

Planning and Economic
Development Department

Memorandum

To: Margaret Fazio
Senior Project Manager
Infrastructure Planning
Growth Management

From: Melissa Kiddie
Natural Heritage Planner
Development Planning, Heritage and Design, Suburban Team

Phone: 905-546-2424 Ext. 1290 **Fax:** 905-546-4202

Date: March 5, 2018 **File:** N/A

Subject: **Block 2 Servicing Strategy**
Consolidated Comment Response
Natural Heritage Planning Comments

A consolidated Comment Response has been provided by Aquafor Beech January 2018 with regards to the Draft Block 2 Servicing Strategy. Natural Heritage Planning staff has reviewed this information and provides the following comments. It is important to note that if the original comment has not been referenced, Natural Heritage Planning staff is satisfied with the response provided.

If you have any questions, please contact me at (905) 546-2424 ext. 1290.

Melissa

MK:mk

Comments:

City Comment (Sept. 2017)	Aquafor Beech Comment (Jan. 2018)	City Response (March 2018)
1. 1.2 Study Purpose: A Terms of Reference was prepared for this project by the City. This should be referenced within this section.	*Tasks within the RFP and proposal have changed following multiple discussions with the City, in part due to land access and changes on the landscape. As such, the TOR in the RFP is not wholly relevant.*	*Natural Heritage Planning staff is concerned with this response. If there are changes to the scope of work, it should be clearly identified what has changed. Even if there was access issue, the timing of the fieldwork would not have changed. The ToR represents the work plan and aids in review. In addition, the work identified should be same for the other blocks (provide a level of consistency). Information on the changes should be provided.*
5. e) On page 16 Policy 2.3.3 has been referenced. it is important to note that this is policy C.2.3.3 within Volume 1 of the UHOP. This statement should be revised with the appropriate policy reference.	*The sentence in which the reference is included read as follows: "According to the City of Hamilton's Urban Official Plan (policy C.2.3.3), "The natural features and ecological functions of Core Areas shall be protected and where possible and deemed feasible to the satisfaction of the City, enhanced". The sentence now reads: "According to the City of Hamilton's Urban Hamilton Official Plan Policy 2.3.3, "The natural features and ecological functions of Core Areas shall be protected and where possible and deemed feasible to the satisfaction of the City, enhanced".*	*Natural Heritage Planning staff is concerned that this comment has not been addressed. Since the Urban Hamilton Official Plan contains three volumes and many sections, the intent of the comment was to ensure to note which section this policy was referenced from (Volume 1 policy C.2.3.3). The sentence should be revised to include the reference of Volume 1 policy C.2.3.3.*
5. i) On page 18, Table 3.1 (Summary of Core Areas and Linkages within the	*Watercourse 6.1 is not shown on OP Schedule B-8. Table 3.1 provides an*	*Natural Heritage Planning staff is concerned with the response that has*

City Comment (Sept. 2017)	Aquafor Beech Comment (Jan. 2018)	City Response (March 2018)
Natural Heritage System) has been provided. Natural Heritage Planning staff is concerned that Species at Risk is missing from this list. *In addition, Natural Heritage Planning staff is concerned with the discussion that has been provided for permanent and intermittent watercourses "Watercourses 6.0 and 7.0 are permanent watercourses as identified on Schedule B8 of the City of Hamilton's Official Plan (2013)" As a point of clarification, it is important to note that all types of watercourses (permanent and intermittent) are identified on Schedule B-8.*	*overview of the features within the study area and their corresponding NHS designations. Under the subheading "permanent and intermittent watercourses, the text reads: "Watercourses 6.0 and 7.0 are permanent watercourses and are shown Schedule B-8 of the City of Hamilton's Urban Official Plan (2013). Based upon observations made in the field and information contained within the SCUBE Phase 1 &2 report, Watercourse 6.1 and Watercourse 7.0 are considered intermittent watercourses. Watercourse 6.0 is considered an intermittent watercourse, with the exception of the lower reach that is located between residential properties fronting on Barton Street. This latter area is considered a permanent watercourse". Furthermore, SAR have been included in the list.*	*been provided. Within Table 3.1 provided on page 18, SAR has not been included in the list (the list includes fish habitat, wetlands including unevaluated wetlands, significant woodlands, significant wildlife habitat, permanent and intermittent watercourses and linkages). SAR is identified as a Core Area (key natural heritage feature). As a result, SAR should be included within this list.* *With regards to watercourses The intent of the comment is that the watercourses that have not been characterized as permanent or intermittent on Schedule B-8.*
5. j) On page 19, Figure 3.3 (Vegetation Community Map) the vegetation communities have been identified. Natural Heritage Planning staff is concerned that the ELC community description have not been provided. *In addition, only 1 area has been identified as "not assessed". Natural Heritage Planning staff is concerned that this is not quite accurate since the property at the corner of Barton and*	*Vegetation community types can be included adjacent to the community codes. The property near WC 6 is labelled as "not assessed" because during the time of vegetation community evaluations, the lands were in the process of being cleared/had recently been cleared and as such could not be assessed. Figure 3.3 will be updated to read "Areas not subject to vegetation community assessment". The EIS and EA no contain a map illustrating property access. Lastly, the aerial photo used in the*	*Natural Heritage Planning staff is concerned that this comment has not been addressed. While the community types have been identified, descriptions of the vegetation communities should be provided (e.g. what was the species composition, dominant species).* *Although Figure 3.3 will be updated to "Areas not subject to vegetation community assessment", these areas*

City Comment (Sept. 2017)	Aquafor Beech Comment (Jan. 2018)	City Response (March 2018)
Glover was not accessed as part of this study. Further clarification is required. *The air photo that has been provided is not representative of the most up-to-date information (church on east side of Glover Road has been removed). The City has 2015 air photos available. It is the opinion of Natural Heritage Planning staff that all figures using air photos should use the 2015 information.*	*report was provided by the City of Hamilton.*	*were also not subject to other studies. It is the opinion of Natural Heritage Planning staff that it should be clearly identified that property access was not granted to complete any natural heritage surveys.* *While the City may have provided the air photos, it is the opinion of Natural Heritage Planning staff that the most up-to-date information should be used. Currently the City has 2017 air photos.*
6. 3.5 Establishment of the Natural hazards and Environmental Constraints Map: It has been stated "*as detailed in the EIS, nesting and foraging habitat for both barn swallow and bobolink is present within the study area. Following talks with the City of Hamilton, it is expected that habitat for barn swallow will be compensated for within the study area in a natural state adjacent to open parkland and wetland; habitat for bobolink will be compensated off-site*". Natural Heritage Planning staff is concerned with this statement. Since Species at Risk are under the jurisdiction of the Ministry of Natural Resources and Forestry (MNRF), any removal of habitat would need to be discussed with this agency. This statement should be revised.		*Natural Heritage Planning staff is concerned that this comment has not been addressed.*

City Comment (Sept. 2017)	Aquafor Beech Comment (Jan. 2018)	City Response (March 2018)
In addition, it has been stated that habitat for Barn Swallow and Bobolink habitat for these species is not shown as a constraint to development. Natural Heritage Planning staff is concerned that this statement does not match Figure 3.4 (Constraints and Opportunities to Development).		
7. 4.2.3 Concept Plan: It has been identified that "the location of these local road connections within the watercourse floodplain areas will be confirmed through an environmental impact review and HCA approvals during the development process that will follow the completion of the Block Servicing Strategy". It should be clarified that an "environmental impact statement" would be required and that the review of this report would be to the satisfaction of the City and HCA.		*Natural Heritage Planning staff is concerned that this comment has not been addressed.*
8.a) On page 76 it has been identified that Watercourses 6.0 and 7.0 are candidates for restoration and re-vegetation. Since this will aid in future development applications, it is the opinion of Natural Heritage Planning staff that a high level discussion on the location and type of species should be discussed. Further discussion is required.	*It is understood that the City and HCA are currently working with one of the landowners near WC 6.0 on restoration of forest and wetland habitats that were cleared. Further information has been provided in Section 6.5.*	*Natural Heritage Planning staff is concerned that this comment has not been adequately addressed. If Aquafor Beech is referencing to 238 Jones Road, this is not accurate. There may have been discussions about restoration in during preliminary OMB discussions, however nothing has been finalized. As a result, a high level discussion on the location and*

City Comment (Sept. 2017)	Aquafor Beech Comment (Jan. 2018)	City Response (March 2018)
		species for restoration should be identified.
8. b) On page 79, it has been identified that the woodland known as Woodland 6 in the SCUBE report was removed. As a point of clarification, this woodland was removed legally.	*It is understood that the woodland was cut in accordance with the current tree by-law at the time. Please confirm if the removal of Significant Wildlife Habitat and wetlands (SWD2-2) was approved/completed legally.*	*The current zoning on this property is Agricultural Specialty Zone (AS) as per the Stoney Creek Zoning By-law 3692-92. Agricultural uses are permitted in this zone.*
8. c) On page 79, it has been identified that the completion of an EIS may be required for the properties that were not assessed. On page 80, specific inventories have been identified. It is the opinion of Natural Heritage Planning staff that this should be more general to provide more flexibility. The recommendation should be left general "the EIS should be prepared in accordance with the City's EIS Guidelines"	*The City had requested that the report include a list of specific studies to be included in an EIS. The report states that the listed studies are considered minimum requirements, and that studies are to be completed in accordance with the City's EIS Guidelines. We have added wording which states that the EIS is to be prepared in consultation with the City & HCA.*	*Further clarification is required on who requested the specific information. Since Natural Heritage Planning staff review these reports, it would be best to allow for flexibility and be more general.*
12 a) Field inventory methodologies have been outlined within Section 3. A table should be provided outlining the field surveys completed and the sates they were completed. This aids in understanding if the surveys were completed during appropriate timeframes.	*Survey dates were provided in each of the subsections.*	*It is the opinion of Natural Heritage Planning staff that this comment has not been addressed. A summary table of the field inventories needs to be provided. This provides a quick understanding of when the surveys were undertaken.*
12 b) Botanical Survey: It has been identified that only a fall survey was completed. How does this compare with the Terms of Reference? Generally, a two season survey (spring and late/early	*The EIS states that botanical surveys were conducted in September 2015, with additional species observation from the June 2016 site visit incorporated into the overall species list. As stated on pg. 10,*	*Natural Heritage Planning staff is concerned that this comment has not been addressed. How does the botanical surveys compare to the Terms of Reference? Further*

City Comment (Sept. 2017)	Aquafor Beech Comment (Jan. 2018)	City Response (March 2018)
fall) is to be undertaken.	*"Spring surveys for ephemerals were not completed given the lack of potentially suitable habitat within the study area (i.e. mature upland forest) to which the study team had access".*	*clarification is required.*
12 c)Breeding Bird Surveys: It has been identified that breeding bird surveys were undertaken June 4, 2015, June 18, 2015 and July 8, 2015. Generally, two inventories are to be completed as part of this survey (1st between May 24 and June 15 and 2nd between June 16 and July 10th). Were two surveys completed at each location? Further clarification is required.	*An additional survey was undertaken to confirm the ID of a species the project ornithologist was unsure of.*	*Natural Heritage Planning staff is concerned that this comment has not been adequately addressed. Were the inventories completed in the appropriate timeframe for all survey locations? Further clarification is required.*
12 d) Amphibian Call Surveys: Although the dates have been included in Table 3.1 (Amphibian Survey Metadata), it is important to ensure that the timing for the studies was appropriate. The dates should be clearly identified. *In addition, survey locations have been identified on Figure 3.2. It appears that the majority of the stations were completed at the roadside. Were appropriate locations not available on the properties where access was granted? Further clarification is required.*	*Staff is unsure what is missing from the table, as times and dates are both provided. Please note that land access was not fully secured ahead of the anuran calling survey timing window. We feel that the locations selected provided adequate coverage.*	*Aquafor Beech can disregard the first part of this comment since appropriate information has been provided.* *Natural Heritage Planning staff is concerned that the second part of this comment has not been addressed. Even if land access was not obtained in the first year (2015) of the field surveys, onsite visits could have been completed in 2016. It should be clearly identified why roadside surveys were appropriate.*
14 c) As mentioned above, DECW is missing from the figure.	*As detailed on pg 15 of the report, DECW was reclassified as CUT.*	*In order to make it very clear that previous areas identified within SCUBE that have not been visited as*

City Comment (Sept. 2017)	Aquafor Beech Comment (Jan. 2018)	City Response (March 2018)
		part of the Block Servicing Strategy have been identified as CUT, reference should be provided on Figure 4.1.
15 Table 4.2 provides the results of the breeding bird survey. While the point count locations have been provided, the connections to ELC communities are missing. As a result, this table should be updated.	*Please note that not all of the point count survey locations correspond with an assessed vegetation community. We suggest comparing the NHS and/or ELC maps with the map showing point count locations. Point count locations 5 and 7 correspond to ELC polygons 7 and 6, respectively.*	*Natural Heritage Planning staff is concerned that this comment has not been addressed. Since the point counts have been identified within the table and there are not a lot of ELC communities associated with these areas, the table should be revised.*
18. It has been identified that a list of Species at Risk (SAR) was compiled from a variety of sources. One of these sources was the MNRF SAR list for Grimsby. It is important to note that the study area is within the limits of Hamilton. As a result, the list for Hamilton should be reviewed.	*Following Aquafor's information request, the MNRF provided the study team with the list of species from Grimsby. As such, that was the list that was used for the SAR assessment.*	*Natural Heritage Planning staff is concerned that this comment has not been addressed. If the wrong list had been provided from the MNRF, the appropriate one should have been obtained.*
21Linkages have been identified as part of this study. How do these linkages compare to those identified within the Fruitland-Winona Secondary Plan? Further clarification is required.	*Please see Figure 13.2: SCUBE Natural Heritage System.*	*Natural Heritage Planning staff is concerned that this comment has not been addressed. Within the report provided to Natural Heritage Planning staff, Figure 13.2 has not been included. Further clarification is required.*
23 c) It has been noted that Watercourse 6.0 and 7.0 are permanent watercourse identified in Schedule B-8 of the UHOP. As a point of clarification, watercourses have not been denoted as intermittent or	*The table provides an overview of the features within the study area and their corresponding NHS designations. Under the subheading "permanent and intermittent watercourses, the text reads: "Watercourses*	*Natural Heritage Planning staff is concerned with the response that has been provided. The intent of the comment is that the watercourses that have not been characterized as*

City Comment (Sept. 2017)	Aquafor Beech Comment (Jan. 2018)	City Response (March 2018)
permanent on this schedule.	*6.0 and 7.0 are permanent watercourses and are shown in Schedule B-8 of the City of Hamilton's urban Official Plan (2013). based upon observations made in the field and information contained within the SCUBE Phase 1 & 2 report, Watercourse 6.1 and Watercourse 7.0 are considered intermittent watercourses. Watercourse 6.0 is considered an intermittent watercourse, with the exception of the lower reach that is located between residential properties fronting on Barton Street. This latter area is considered a permanent watercourse."*	*permanent or intermittent on Schedule B-8.*
26. It has been identified that restoration downstream of Watercourse 6.0 and all of Watercourse 7.0. Natural Heritage Planning staff is concerned that a high level discussion on the location and type of restoration has not been provided. Further clarification is required.	*See Section 14.3.*	*Natural Heritage Planning staff is concerned that this comment has not been adequately addressed. If Aquafor Beech is referencing to 238 Jones Road, this is not accurate. There may have been discussions about restoration during preliminary OMB discussions, however nothing has been finalized. As a result, a high level discussion on the location and species for restoration should be identified.*

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: April-30-18 2:51 PM
To: Moniruzzaman, Monir; Yong-Lee, Sally; Dave Maunder ([redacted]; Kiddie, Melissa; [redacted]
Subject: FW: Block 2 Servicing Study Draft - Comments
Attachments: BSS 2 Comments_April 30 2018_Final.pdf; Concept Plan Overlay - Block 2 Servicing Strategy.pdf; Drainage Area Sketch.pdf; Existing Mon Well Location 2018-04-19.pdf; Site Plan_27 April2018.pdf

Hi,

Please see the comments below and attached.

I don't know how a neighbourhood park would be movable at this point of the Secondary Plan process or why they would understand this to be the case previously…Is it possible if they own the entire land for the park? Alissa – could you advise, please?

Please advise if you feel we need to incorporate the current site application comments with Block Servicing strategy as I have not been part of the development review process and don't know what's been promised, discussed, etc.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: [redacted] [redacted]
Sent: April-30-18 1:40 PM
To: Fazio, Margaret
Cc: [redacted]
Subject: Block 2 Servicing Study Draft - Comments

Good Afternoon Margaret,

Please find attached our comments for the Block 2 Servicing Strategy Draft, as it relates to the property owned by Losani, known as [redacted]

Please also find 4 other attachments enclosed including a site plan, an overlay of a concept plan with the BSS concept plan, a drainage area sketch, and a map showing the existing monitoring well location.

Regards,

[redacted]

MHBC **Planning, Urban Design & Landscape Architecture**

540 Bingemans Centre Drive, Suite 200 | Kitchener | ON | N2B 3X9 | T[redacted] | F[redacted]

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LEGEND

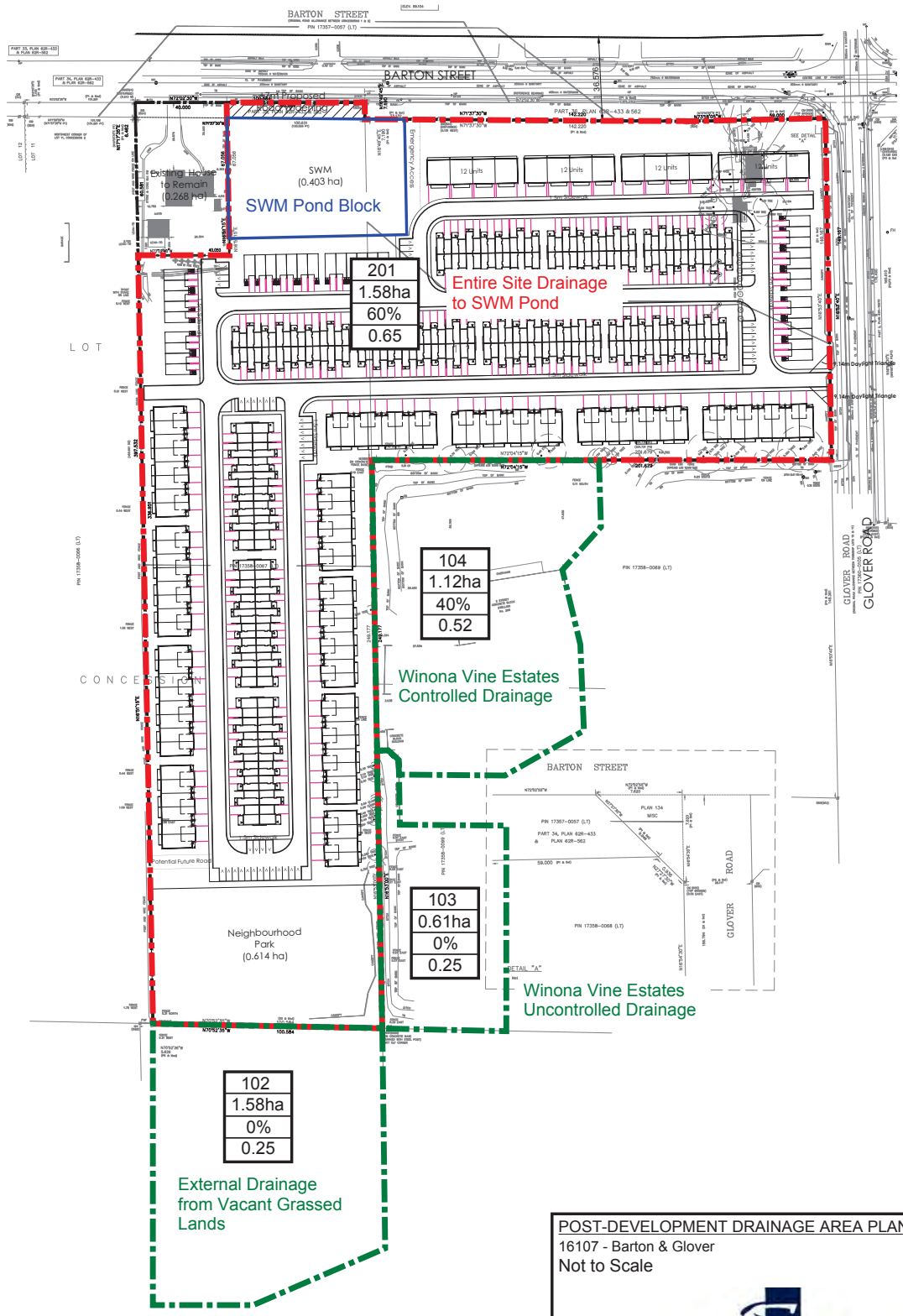
102
1.58ha
0%
0.25

Drainage Area ID
Drainage Area (hectares)
Percent Imperviousness
Runoff Coefficient (C-value)

N

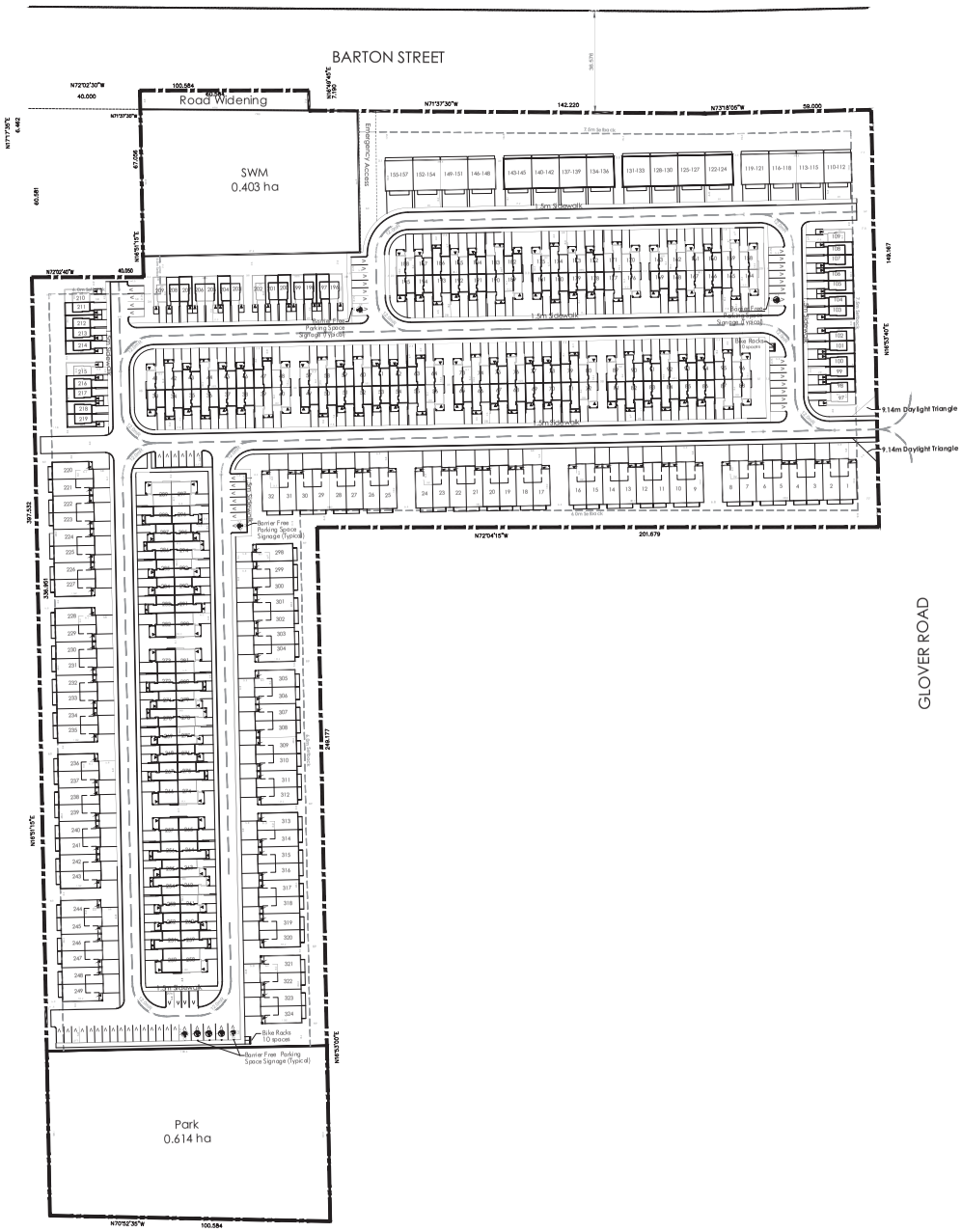
Proposed Development Drainage Area

External Drainage Area



POST-DEVELOPMENT DRAINAGE AREA PLAN
16107 - Barton & Glover
Not to Scale

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS

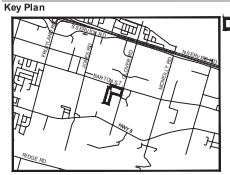


Note:
Reference the fire route and accessible parking signs on the site plan using the following sign design.

LEGAL DESCRIPTION

PART OF LOT 11 CONCESSION 2
GEOGRAPHIC TOWNSHIP OF SALTFLEET
CITY OF HAMILTON

Key Plan



SITE STATISTICS

Zoning Summary ***ZONE RM3-XX***		
	Required	Provided
Total Units	n/a	324
Lot Area (min)	4,000m²/ 0.400 ha	57,267.5 m²/ 5.727 ha[1]
Lot Frontage (min)	50m	149.17m
Front Yard (min)	7.5m	7.5m
Rear Yard (min)	6m	6m
Side Yard (min)	6m/ 7.5m Flankage Yard	3.4m/ 7.5 Flankage Yard
Building Height (max)	11m	12m
Lot Coverage (max)	35%	34.2%[2]
Landscaped Open space (min)	50%	37.8%
Parking Spaces	2 spaces/unit	2 spaces/unit
Visitor Parking Spaces	0.5 spaces/unit	0.19 spaces/unit[3]

[1] Based on net area (net of road widening, SWM pond, emergency access, and park
[2] Lot coverage calculation includes covered porches
[3] 63 visitor parking spaces provided including 8 barrier-free spaces

Building Area (19,566.7m²)	34.2%
Landscaped Area (21,654.0m²)	37.8%
Asphalt Area (16,046.8m²)	28.0%
Total (57,267.5m²)	100.0%

NOTES:
- All dimensions are in metres unless otherwise noted.
- Boundary and topographical survey information provided by A.T. McLaren Ltd., Land Surveyor, 2017.
- Driveways and aisles to be defined by 0.20m raised concrete curbing or sidewalks as shown.
- V - Denotes visitor parking

Revision No.	Date	Issued / Revision	By

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
200-540 BINGEMANS CENTRE DR, KITCHENER, ON, N2B 3X9 | P: 519.576.3650 F: 519.576.0121 | WWW.MHBCPLAN.COM

Stamp	Date: April 27, 2018
	Drawn By: JB
	Plan Scale: 1:800 (Arch D)
	File No.: 11172A
	Checked By: DA
	Other
Project: Barton & Glover, City of Hamilton	
File Name: SITE PLAN	Dwg No.: 1 of 1
Scale Bar	

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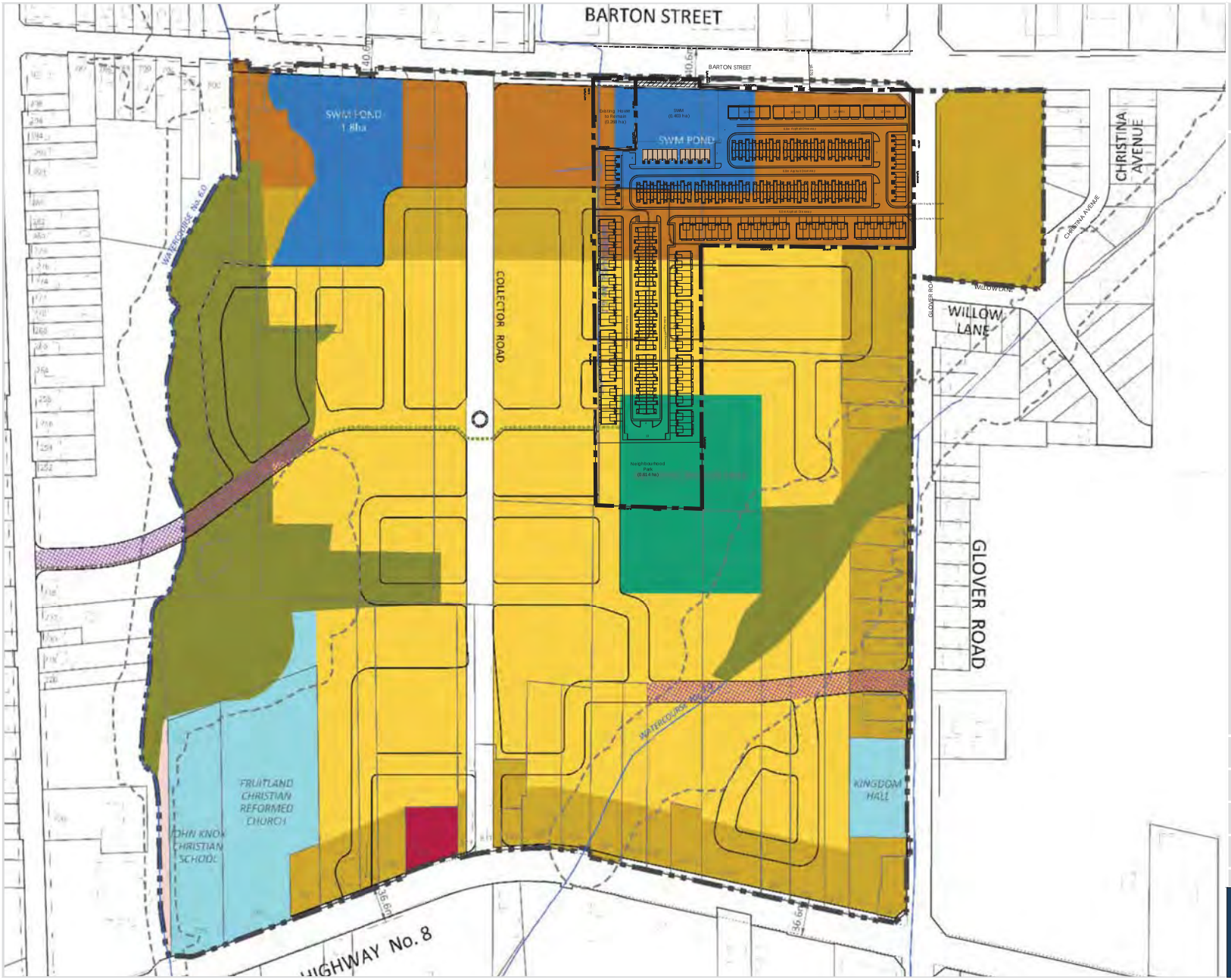
Document Path: H:\TERRA_DYNAMICS\9179 - TD-___ - Losani_Barton-Glover_Dev\gis\mxd\borehole location.mxd



Concept Plan Overlay

Barton St and Glover Rd
Part Lot 11, Conc. 2 Saltfleet
City of Stoney Creek

LEGEND

- Subject Lands
- Servicing Strategy Study Area

Sources: Figure 4.4 - Concept Plan - Block 2 Servicing Strategy for the Fruitland-Winona Secondary Plan Lands Draft Report

DATE: April 12, 2018

SCALE: 1:3,500

FILE: 11172A

DRN: JB

north

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MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
200-540 BINGEMANS CENTRE DR. KITCHENER, ON, N2B 3X9
P: 519.576.3650 F: 519.576.0121 | WWW.MHBCPLAN.COM

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: March-14-18 5:18 PM
To: Dave Maunder [redacted]
Cc: Moniruzzaman, Monir; Yong-Lee, Sally; Kiddie, Melissa; [redacted], Dave
Subject: FW: Block 2 SS - Table of Comments - COH and HCA comments and Updates
Attachments: Block 2_Feb 26 2018_comment TABLE MF&HCA.xls

Importance: High

Hi Dave,

Please see attached the Table of Comments – as requested, with COH and HCA responses.

1. [redacted] qualified his in that [redacted] did not have a chance to review. I'd like to ask [redacted] to please let everyone cc'd on this message know if there are any changes to your submission.
2. Please note Jonathan asked that our updated model be provided for their review, as per my earlier e-mail. Please provide it via FTP to [redacted], Monir and I, asap.
3. Water and Wastewater comments will be provided at a later date – during the public review (3 weeks at the start of April), to finalize. If Dave A. can provide them sooner he will do so, through me.
4. Public Consultation comments records were e-mailed in 4 sets earlier this p.m. Please let me know if you have the following as a complete set:

- Blank sign in sheets for both PICs.
- Blank comment sheets for both PICs.
- Scans of any comments for both PICs.
- Scans of documents from Simones (don't have to be included, just summarized).
- Copies of Notices, and Agency List.

Please let us know if you have any questions, etc.
I'll be away next two days, but Monir will be here tomorrow, and Sally will be here both days.

I will be drafting the Notice next week, for your inputs – will need dates for when hard copies of the Draft Report will be ready.
We will likely need 7 hard copies minimum.

Happy St. Patrick's Day!
Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: [redacted]
Sent: March-14-18 3:24 PM
To: Fazio, Margaret; [redacted]

Cc: [redacted] Dave
Subject: RE: Block 2 SS - Table of Comments - your turn

Good afternoon Margaret,

Please find attached HCA staff comments on Aquafor Beech's responses to our October 2017 review comments.

Please do not hesitate to call to discuss further.

Have a nice afternoon and vacation.

[redacted]
Water Resources Engineering
Hamilton Conservation Authority
Tel: 905-525-2181 ext.138
Mobile: 905-515-3087
Fax: 905-648-4622
Email: jbastien@conservationhamil

From: Fazio, Margaret
Sent: Wednesday, March 14, 2018 1:10 PM
To: [redacted]
Cc: Kiddie, Melissa <Melissa.Kiddie@hamilton.ca>; Moniruzzaman, Monir <Monir.Moniruzzaman@hamilton.ca>; Arsenault, Dave <Dave.Arsenault@hamilton.ca>
Subject: Block 2 SS - Table of Comments - your turn
Importance: High

[redacted]

Sorry – I had to re-enter. I am not sure what happened but I lost yesterday's info…Improved somewhat, though☺
Please the table attached. Please re-send by 3:30 p.m. today so I can check and forward to AquaforBeech.

NOTE: I have introduced grey background for headings, and changed formatting further.
For issues that are important I've highlighted them in bright yellow. You may wish to do the same?

We have water and wastewater comments outstanding, but in the interest of project schedule timelines, we will let those go, until/for the public comment period.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

Consolidated List of Comments from the City of Hamilton and Hamilton Conservation Authority on the draft Block 2 Servicing Strategy, dated July 26 201
Comments Received: December 2017
Date of Cons **Jan-18**

Aquafor File path: L:\City of Hamilton\65736 - Block 2\Final Report\Comments From City et al
Aquafor file name: Block 2_Feb 26 2018_comment responses_all.xls

Comments					Consultant Response	Comments From City, Dillon Servicing Comment Meeting - Feb. 9, 2018	AGENCY RESPONSES (agree, approve, or further discussion needed)
Commenting Agency	**Report Section**	**Page No.**	**Comment No.**	**Comment**			
	Floodplain Management	71	1	It is our understanding that the floodplain management for WC 6.0 between HWY8 and Barton Street is subject to other infrastructure improvements such as removal of two houses from the existing floodplain, the installation of a new culvert on Barton Street and channel improvements works north of Barton St. As such, these areas should be marked as "further assessment required".	Wording already provided on Page 71. Wording will be added to incorporate WC 5 & 6 EA.		Agreed
		34	2	The required culverts on Barton Street across WC 6.0 should be designed to convey 100 year existing condition flows, as post development flow with SWM controls should be equal to or less than the existing condition flows. Please note that these upgraded culverts should not be required to facilitate the developments as mentioned in SCUBE Ph 3 implementation report.	The culverts across Barton Street should be sized based on both the requiremtns of the Bartons Street EA and WC 5 & 6 EA.		Agreed
		34	3	Please demonstrate that the existing WC 6.1 culvert at Barton street can convey the controlled flows and emergency overflow from SWM facility 6.1, meeting the City standards.			Need response
		34	4	What about WC 7.0 between Glover Road and HWY #8?	Our study is intended to use existing road structures and define floodlines - not to look at upgrading culverts - this may result in downstream impacts.		Require flexibility to allow flood plain alteration for WC 6.0. Need statements in the report to allow flexibility and not leave it up to HC - provide our own recommendation and conditions for alteration - so, allow flexibility if certain criteria are met, and provide them here..
		29 (36)	5	Functional design should be provided for all future creek crossing structures on the proposed roads, as per City standards.	The following statement has been added: The location and sizing of the proposed watercourse crossings will be dependent upon proposed works in and around Barton Street for WC 6 and whether HCA allows aleration to the floodplain for WC 7. These factors need to be defined in a subsequent study prior to sizing the crossings.		
		34	6	The report noted inconsistent type of WC6 culverts at Barton street. It is our understanding that the existing culverts are 1.9m×1.3m CSP and 1.25m circular concrete pipe. Please verify and confirm the culvert characteristics.	Table 5.3 has been revised - Culvert 1 (east) is a 1900x 1300mm concrete box culvert) and Culvert 2 (west) is a 1250mm dia CSP	Culvert information reviewed. No revisions are required.	Agreed
		14&15	7	Figure 3.1 is repeated in pg 14 and 15. One of them can be removed.	Noted.		Need a statement in the report regarding separate natural heritage area. For Losani - by address, we shoudl recap the woodlot removal history and policy support, i.e. In the report acknowledge that the Council Approved Fruitland-Winona Secondary Plan (FWSP) policy, specifically Natural Heritage System Map B.7.4-2 indicates that this area was designated as developable. We need to support this, and acknowledge that while field work for this study was based on aerial and periphery observations indicates that some naural features may still persist, and without permission to enter could not be confirmed, an EIS would be warranted, we also acknowledge that the field has been plowed.

				a. ADDITIONAL COMMENT: RE Natural Heritage/Flood plain			Please add another statement that also refers to comment above - 7, but in reference to natural heritage properties along Watercourse 6.0, which were confirmed to be designated by a Council approved FWSP Natural Heritage System Map b.7.4-2 as designated Core Areas, Linkages, Restoration Areas, Vegetation Protection Zone and Streams, we were not given permission to enter to update the information in the field, observed from adjacent properties that some removals have taken place. City would REQUIRE that an EIS is provided at Development Application stage. Comments should also include (along with #34), that the development limit would be determined by either natural heritage boundary or the flood plain, erosion and meander belts, whichever is deemed to be the largest.
	Natural Heritage System (NHS)	19	8	**Figure 3.3**: we note that the areas that are not assessed during this block servicing study, will be further studied at draft plan application stage.	Noted. See Figure 7.1.		Agreed
		21,23,25	9	The woodlot at 860 and 884 Barton street are already removed by the owners. But all the constraint maps in the report are still showing the woodland and unevaluated wetland on these properties. The constraint map and the recommendations for future assessment should be updated to reflect the current conditions.	The constraints mapping reflects multiple (non-woodland) natural heritage designations that are currently on the property, including habitat for species-at-risk, Significant Wildlife Habitat, and wetlands.		Agreed
			10	Functional design (plan and profile) of Glover Road and North-south collector road should show the existing/proposed services (storm, sanitary and water). Adequate vertical clearance (as per City standards) between municipal services should be confirmed and any potential conflict should be identified.	The functional design on Glover Road was based on limited available City information (1984 City design drawings). The City had arranged for a topographical survey which may show the profile of the existing infrastructure which was not available at the time of design, therefore only plan view information of existing sewer and water infrastructure that was taken from older design drawings was placed on the functional drawings. The cover and size of the proposed sanitary sewer replacements on Glover are identified in the report. Any adjustments to the existing infrastructure would be determined during the detailed design stage. The functional design of the North South Collector Road has indicated the existing and proposed infrastructure on the plan view. The cover over the proposed sewers is indicated in the study report sewer design sheet appendices. The final design profile of the proposed infrastructure will be determined during the detailed design stage. The proposed sizing of the watermains is 150 mm diameter to 300 mm diameter with a standard depth of cover of 1.6 m. Where there is a vertical conflict with the proposed sewers the watermain will cross under the proposed sewer with the required clearance.	No revisions are required.	Agreed

			11	Block servicing study should demonstrate interim design details for all proposed intersections at the existing roads to facilitate orderly development.	A traffic study which would determine the final intersection design details for lane configurations was not part of the study. The Glover Road functional design does indicate left turn lanes on the plan view. Further detail will need to follow this study. With respect to staging the improvements, it is proposed that the entire proposed road platform would be constructed at the same time and not built in stages.	No revisions are required to the plans. The wording in the report will be reviewed to note that a traffic impact study will determnine lane configurations and intersection details during the detailed design stage.	Agreed
			12	Functional design should be provided at the proposed round-about of North-south collector and East-west connection, demonstrating a suitable overland flow route to the proposed SWM facilities.	A functional design of the roundabout on the North South Collector Road has been provided as per the City standard roundabout design. Further design details for the roundabout would be provided at the detailed design stage. A 0.75% road grade has been shown on the functional design drawings which will facilitate the major overland flow to the SWM ponds. During detail design the road grades will be finalized. The Grading Plan With Road Grades figure outlines the road grades for the local streets to facilitate the major overland flow route that is noted on the Storm Major System Plan.	A note will be added to the report to require that the detailed design ensure proper drainage to City standards at the roundabout and if minimum gutter grades can not be achieved, that total collection catch basins and storm sewers be sized for the 100 year storm.	Agreed
			13	We note that minimum 0.6m cover is proposed for local road watercourse crossings. Please demonstrate that the pavement structure can be accommodated, with necessary backfill (if required).	In order to show the cover over the culverts at the watercourse crossings, watercourse crossing information will be needed. Once the watercourse crossing is available at the detailed design stage the road profiles would be adjusted to provide the minimum 0.6 m cover that is required for a concrete box or open bottom culvert.	A note will be added to the report to confirm that the desirable cover over the culverts is to the depth of the pavement structure.	Agreed
	Roads/Grading		14	**Glover Road**:			Agreed
				a) It is our understanding that Glover Road will have roadside ditches, instead of storm sewer. Please clarify why DCBs/CBs/proposed storm manhole are shown all drawings, while no storm sewer is shown.	The proposed road drainage is by catch basins to either a proposed storm culvert (approx. Sta 0+35 to Sta 0+95) or to a ditch on the west side of the road. The storm manhole at approx. Sta 0+70 is to located where the catch basins connect to the storm sewer. There are sidewalks proposed on the west side of the road adjacent to the road and catch basins with leads under the sidewalk to the ditch is needed to prevent water from the road running across the sidewalks.	No revisions required to the functional design drawings. A note will be added to the report that there is inadequate cover for storm sewers and the catch basins will drain to the ditch on the west side of Glover Road.	Agreed but please add wording which would require Detailed Design to consider having a MUP on the west side, or bike lanes on both sides of the road.
				b) As per City official plan, Glover Road should be a 26m ROW from QEW to HWY8.	The typical sections on Glover Road on Sheets 2 and 4 were shown to provide the 26 metre right of way where it was expected that the widening would be available through development. The typical sections on Sheets 1 and 3 will be revised to show the widening on the east side of the road to provide for the 26 metre right of way.	No additional revisions are required.	

				c) The sidewalk should be at the opposite side of the roadside ditch.	The sidewalk exists on the east side of the road and should remain in its current location to minimize impact to existing development. It will be difficult to locate a sidewalk between the curb and ditch without impacts to either property or existing development.	No revisions required to the functional design drawings. A note will be added to the report to identifly this.	
				d) 2:1 slope in the roadside ditches cannot be supported. Maximum 3:1 slope should be provided.	The typical sections on Sheets 3 on the east side of the road were proposed at 2:1 to allow reconstruction of Glover Road to proceed without grading on private property if the road widening was not available at the time of the reconstruction. The 2:1 slopes on Sheet 4 will be revised to 3:1.	No additional revisions are required.	Agreed
				e) Sheet 3: please clarify why a 23m road allowance is shown. It should be 26m.	The existing development on the east side of the road is not expected to be further developed in the near future and road widening not expected. This section is being revised to reflect the 26 metre right of way.	No additional revisions are required.	Agreed
			15	**North-south collector road**: the multiuse pathway from Jones Road to the neighbourhood park cannot fit within the local road. Sidewalks on both sides should be adequate to provide pedestrian connectivity to the park.	It is proposed that a muli-use path replace the sidewalk on one side of the road. Should the City wish the Multi-Use Path to be deleted the plan will be revised.	The report will be revised to note that during the detailed design stage a multi-use path is to be considered on one side of the road with sidewalks on the other side with an alternative that 2.0 metre sidewalks may be considered on both sides of the road if there is insufficient room for the multi-use path.	Agreed
				Figure 5.8 and 5.10-Grading Plans:			Agreed
				a) The grading plans should include all existing road grades (Barton street, Glover Road and HWY8); grades along the NHS, grades of 269 Glover Road and existing properties fronting HWY8.	There was limited topographical information available. The Barton Street existing road grade was provided by the City and added to the plan but the other information was not available, only digital terrain model contours which have been shown on the plan.	No further grades are required to be added.	Agreed
			16	**b)** Pond grades should also be included and any berm requirements along Barton street should be identified.	No berm requirements have been identified at the study stage. A note has been added to the grading plan to note that proposed grading at the stormwater management ponds has been shown on the SWM pond figures.	The City is to provide the existing cross sections of Barton Street adjacent to the SWM ponds.. A cross section will be then drawn to show the pond and Barton Street for City review but not for incorporating into the report.	
				c) The proposed grades for the lots/blocks are back to front, which requires minimum 2m separation between the foundation walls, as per City standards. This strategy with no rear lot catchbasin will direct lots of flows over sidewalks. It may not be acceptable and consistent with zoning. Please evaluate the option of providing split drainage.	Back to front drainage has been conceptually shown to avoid rear yard catch basins. When the size and lot layout is known there would be opportunities to revise and add some rear yard catch basins should this present itself to be the optimal lot grading design.	A note will be added to the report to allow consideration for split lot drainage providing the proposed road grades are maintained.	Agreed

City of Hamilton (Senior Project Manager - Infrastructure Planning)			17	**Minor and Major Storm Servicing (Figures 5.7 and 5.9):**			Agreed
				a) Please justify why ditches are proposed along local road 11 (MH7B to MH6B), local road 8 (MH 3B t	In order to provide minor drainage with storm sewers where ditches are proposed, the site would need to be raised to provide adequate cover. During the development of the plan there was a concern raised by the City on the amount of fill that may be required to develop the site. The degree of fill has been taken into consideration the proposed minor storm plan.	A note will be added to the report to require the appropriate right of way width where ditches are shown to allow sufficient road allowance width to accommodate ditches.	Agreed
				b) For some catchments within Pond 6.1 drainage area, major flows are directed to WC 7.0. Please co	The minor storm system from MH19A drains to Watercourse 6.0 through the SWM pond. Total collection catch basins would redirect flows to WC 6.0 and not the SWM pond 6.1. Alternately during detailed design the final road grades of the intersection could be reviewed to add additional fill and redirect major flows northerly. The current grades reduce the fill and generally match the existing conditions drainage area to Watercourse 7.0. Final design flows would need to be modelled at the detailed design stage to show pre conditions are met.	A note will be added to the report to require appropriate storm water quality and quantity control through the ditches.	Agreed
				c) Major flows from the intersection of local roads 9 and 8 are currently bypassing Pond 6.1 and drain	Total collection catch basins can be reviewed during the detailed design stage if Watercourse 6.1 is to be maintained as an open channel on the north side of Local Road 8. If WC 6.1 is to be maintained then a total collection shallow catch basin lead could be reviewed during detailed design to be constructed off of the road in the blvd. to cross an enclosed WC 6.1.. Additional fill may need to be placed in the catchment area to accommodate the required catch basin invert and the road grades reviewed to meet City road grade standards.	A note will be added to the report to require major flows from local roads 9 and 8 to drain to SWM pond 6.1.	Agreed
				d) Hydraulic grade line assessment should be provided for storm sewer system.	Storm sewers have been designed for a 5 year design storm frequency and flow capacity shown on the storm design sheets are 0.85% or less, flow is maintained in the pipe or ditches for a 5 year design storm.	A note is to be added to the report to require that the ditches be enclosed (not open) with a shallow pipe or culvert system where the hydraulic grade line is above the bottom of the ditch invert (ie where the ditches will hold water).	Agreed
				e) Generally pond design governs the depth of cover. For all SWM facilities, the upstream storm sewe	Setting the storm sewer outfall inverts at the SWM ponds to be higher than the 100 year pond operating level will require additional fill to be placed on the site and will be difficult to maintain the major flow path from Highway 8 to the SWM pond as the road grade is already set at 0.75% and is constrained by the elevation of Highway 8.	A note is to be added to the report to require that the ditches be enclosed (not open) with a shallow pipe or culvert system where the hydraulic grade line is above the bottom of the ditch invert (ie where the ditches will hold water).	Agreed
				f) Please confirm the number of storm sewer inlets to Pond 6. Figures 5.6 and 5.9 are showing 2 inlet	There are two storm outfalls to SWM pond 6.0. Figures 5.1 - 5.3 have been revised - to include both inlets at Pond 6.0	The minor flows are to be directed to the SWM pond sediment forebay.	Agreed

			g) Figure 5.9 is inconsistent (ditch, sewers) with figure 5.6.	Figure 5.6 has been revised for Local Road 11 to show the ditch flow to be to the south which will match Figures 5.9 and 5.10.	No additional drawing revisions are required.	Agreed
		56	**h)** With minimum 1.2m cover on storm sewers (noted in pg 56), there is a potential for conflict with w	During the detailed design stage which the road grade has been finalized, the watermain profile will need to be lowered to pass under the storm sewer where there is a conflict with maintaining a minimum design cover for the watermain.	A note will be added to the report.	Agreed
			Strom Sewer Design Sheet:			Agreed
			a) Please verify the title of area B and area C design sheet. Rymal Road is noted.	The title should read Block 2 and not Rymal Road. The figures in the design sheets are for Block 2	The title on the design sheet will be revised.	Agreed
		18	**b)** Please clarify why a design sheet using storm sewers is prepared for Area C. Roadside ditches are p	A design sheet was prepared for Area C to demonstrate that there is insufficient cover for storm sewers. During detailed design when there is topographical survey information available and a final road layout, then ditch cross sections should be developed.	A note will be added to the report.	Agreed
			c) Please verify area of subcatchment A22 and ensure consistency with storm drainage plan.	The subcatchment area for A22 on Figure 5.6 has been revised to read 0.30 to match with the sewer design sheet.	No additional revisions are required.	Agreed
			Figure 5.5 and 5.6 (Storm Drainage Plan):			Agreed
			a) Please provide full size pre- and post-development drainage area plans, showing the existing and pr	Figure 5.5 shows the pre and post development drainage areas including the value of the external contributing drainage areas south of Highway 8. Figures 5.6, 5.7, 5.8 and 5.9 show the drainage pattern for the study roads and storm outlets. Full size figures can be provided.		Agreed
			b) Please clarify the storm servicing strategy for future urbanized Barton street. Currently the pond design did not consider any drainage from Barton street. If Barton street cannot drain to the proposed ponds			Need an alternative statement in the report
			c) Please justify why 884 Barton street, development lands immediately east and west of North-south	The grading plan has been developed to avoid retaining walls at Glover Road east of SWM Pond 6.1 and on Barton Street east and west of the north service road to force all of the drainage south away from Barton Street and Glover Road. The current plan does provide for these areas to drain to the SWM pond with sections draining towards the ditches on the south side of Barton Street and west side of Glover Road.	A note will be added to the report.	Need further clarification prior to approval.
		66	**d)** Winona Vine Estates (269 Glover Road) is a recent development and is not likely to develop in the s	The road, sanitary and storm sewer layout for the Winona Vine Estates lands are stand alone from the balance of the Block 2 lands and if the lands are not developed, the balance of the Block 2 development can proceed.	No revisions are required.	Agreed
			e) Please clarify the drainage outlet of 795 and 805 HWY 8 (John Knox Christian school and Fruitland C	Based on the digital terrain model contours provided by the City, the John Knox Christian School and the Fruitland Christian Reformed Church lands currently drain to Watercourse 6.0. The plans do not propose redevelopment of these Secondary Plan institutional lands.	A note will be added to the report to acknowledge that no redevelopment of the subject lands has been considered.	Agreed
			f) For Area C (to WC 7.0), onsite Stormwater management is proposed with outlet to roadside ditches	Ditch details should be provided during the detailed design stage when the final road grades have been determined along with sidewalk placement. The report (page 53 first paragraph) notes that for Area C stormwater quality is to be managed by ditches with stormwater pre to post development flows managed by ditch pipe outlets. Details on ditch and pipe outlet sizing would be during the detailed design stage.	A note will be added to the report.	Agreed
	Storm Serviceing and Stormwater Manageme nt		**g)** Please quantify drainage from east of Glover Road to the roadside ditch (MH 9C).	The note on the Storm Drainage Plan was to show that the flow from drainage area C9 outlets to the Glover Road ditch. The drainage from the east side of Glover Road has not been revised from existing conditions by this study.	The lands on the east side of Glover are lower and do not drain to the ditch on the west side of Glover Road.	Need a verified plan.

		h) Fig 5.6: Please use a legible and differentiable legend for subcatchment boundary. The individual subcatchment boundaries are hard to read at some places. Catchment area and runoff co-efficients are also not legible.	The drainage coefficients and drainage areas have been revised to two decimal places to make the catchment area labels more legible.	The drainage plans were reviewed at the Feb. 9 meeting. No further revisions are required.	Agreed
	20	**SWM Facility Design Criteria**:			
		a) The SWM ponds should be designed for a higher imperviousness, 52% is too low. As per City standa	A weighted imperviousness has been applied which includes Natural Areas and Environmental constraints. Impervious % has been calculated for the subject drainage area using proposed GIS layers and C values from the City of Hamilton's 2016 standards. Detailed design will be required to reflect the final imperviousness based on the proposed development.		Need a calculation to confirm impreviousness at 52%
		b) The SWM ponds should be designed to provide Level 2 (Normal) quality control for contributing dra	Ponds are to be sized to Level 1.		Need confirmation from HCA
		c) SCUBE ponds 3 and 4 were designed for average 50% imperviousness, while the current proposed ponds will have higher imperviousness. Therefore, SCUBE storage requirements will not be applicable for por			Need calculation
		Ø The future condition hydrologic assessment of WC6 should consider development in both Blocks 1 and 2. Co-ordination with AMEC will be required, who is the engineer for Block 1 servicing study.			Need reply
		Ø A comparison of existing and future flows at various nodes of WC 6 and WC 6.1 should be provided.			Need reply
		d) We note that Pond 6 erosion control target flow is set same as SCUBE Pond 3, which was proposed	Per Page 32, Flood control requirements for Ponds 6.0 and 6.1 are to be consistent with the release rates for Pond 4 from the Scube WEST SWS- "Subsequent sections of this FSR report describe the refinement of the hydrologic estimates from the SCUBE West Subwatershed Study in regards to the subject ponds (Pond 6.0 and Pond 6.1) are noted as a single pond, Pond 4 in regards to water quality and flood control requirements, however Pond 3 which releases to Watercourse 6.0, provides relevant erosion control criteria and release rates for Pond 6.1."		Require a statement in the report as per discussion in the report.
		e) Please clarify the Erosion control requirement for the ponds. Current report identified 5-year event for erosion control, which is not consistent with SCUBE study.	Table 5.6 summarizes the erosion control volume and release rate requirements. Table 5.9 and 5.10 summarizes the ponds performance in regards to maximum release rate for the 2-year event and the maximum flow rate at the specified erosion control volume.		
		Pond 6 and 6.1 Design (General Comments):			
		a) Full size drawings should be provided for both SWM facilities showing pond grading, the adjacent e	Full size drawings will be provided. Channle grades are not within the scope of work and will be compelted at the detailed design stage		Proposed outlet channel for pond. Grading should be part of the study outcomes, as per TOR.
		b) Pond cross-sections should show pond geometry (i.e. depth, side slope, etc.) and the channel cross	Pond geometery (side slopes etc) have been added to Figure 5.1 to 5.3. 2-yr		Agreed
		c) Pond cross-sections should show the Barton Street future ROW limit and a 5m buffer should be pro	XS-3 has been added to Figure 5.1 and 5.2 to show Barton Street ROW +5m		Agreed
		d) Overall, proposed SWM facilities in SCUBE area will be very flat, resulting in huge permanent pool v	This is not possible given the SWM bloack size. Optimization of the SWM facilities will be completed during the detailed design stage.		Agreed. Need a statement in the Report to indicate this.
		e) Permanent pool elevation for both ponds should be set above the 100-year creek operating level (i	This is not possible given the existing grades. i.e. 100-yr elevation is 86.56m and the existing ground is apporx. 88.5m for Pond 6.0.		Need Discussion
		f) Pond outlet should be set at 2-year creek operating level, as a minimum (i.e. WC 6 for Pond 6 and V	Pond outlets are set above the 2-year creek operating level		Agreed
		g) For both ponds, please provide the following calculations:			
		Ø Stage-storage-discharge calculations, considering static conditions;	Stage storage discharge are provided in Tables 5.11 and 5.12		Agreed
		Ø Drawdown time calculations based on MOE equation;	Drawdown calculations have been verified using the PC SWMM model and MOE 2003 method and supplied with the revised report		Agreed
		Ø Forebay settlement length calculations;	Forebay settlement length calculations are detailed under the headind Minimum Flow Distance within Section 5.7.5		Agreed
		Ø Decanting area sizing calculations and cleaning frequency.	Decanting area sizing is disctated by the availble SWM block size and has been maximized per Section 5.7.7.Optimization of the SWM facilities will be completed during the detailed design stage.		Agreed

			21	**h)** Please clarify the configuration of the extended detention and flood control outlet structure.	Per Table 5.9, the combination of the Hickenbottom and Flow Control Manhole with orifice controls (140mm dia. for Ponds 6.0 and 6.1) provides the necessary erosion and water quality control per the MOE 2003 manual and per the Scube West SWS. The modification and optimization of the outlets will be undertaken as part of detailed design.		No Hickenbottom to be included, as per meeting discussions/minutes.
				i) Please clarify how major flows will be diverted to the pond main cell. Will there be a major overland	Major overland flow routes are noted on Figures 5.1 and 5.3. No flow splitter manhole is detailed. Optimization of the SWM facilities will be completed during the detailed design stage.		Agreed, please indicate in report.
				j) Ponds should be designed with a minimum 0.10m freeboard from the 100-year water level to the in	All necessary freeboards have been included. Optimization of the SWM facilities will be completed during the detailed design stage.		Agreed
				k) Decanting area should be sloped at min 2% to the forebay. Please verify the decanting area configu	Decanting area location has been revised to present 2% slope towards sediment Forbays. Dcanting Areas were dictated by the availble SWM block size and has been maximized per Section 5.7.7.		Agreed
				l) Tables 5.11 and 5.12 should include a column for pond active storage. Table title should be revised	A column has been added to Table 5.11 and 5.12 for Pond Active Storage. Table title has been revised.		Agreed
				m) Tables 5.9 and 5.10: please clarify what is meant by pre-development volume. The 2-year release ra	Table 5.9 has been revised		Agreed
				n) Section 5.7.4 to 5.7.9:			
				Ø The 5-year inlet flow rates for forebay dispersion length calculation are not consistent with tables 5.	Tables 5.9 and 5.10 summarize the pond outflows under the propsoed condition. Existing confition 5-yr flow (no pond) is 0.52cms for Pond 6.0 and 0.99 cms for Pond 6.1.		Agreed
				Ø Please optimize forebay length to width ratio to provide min 2:1.	Not possible given the size of the SWM block. Optimization of the SWM facilities will be completed during the detailed design stage.		VERY IMPORTANT to Discuss, as per meeting minutes.
				> Table 5.13: there appears to be ta typo for Pond 6 length and width. The ratio seems to be only 1.2.	1.4:1 is the correct L:W ratio.		Further discussion may be required? Please clarify.
			22	**Pond 6 Design (Figures 5.1, 5.2)**:			
				a) As per section 5.5.3, 100-year flood elevation within watercourse 6.0 in the vicinity of the pond ran	The flood elevations shown in the drawing are correct. The report will be updated to comply with the HEC-RAS model results		Agreed
				b) Please clarify why an outlet channel is proposed, instead of a direct outlet to WC 6.0.	The flat topography of the site does not permit the use of a direct connection to the watercourse using a piped system. Optimization of the SWM facilities will be completed during the detailed design stage.		Agreed
				c) Maintenance access should be provided from Barton street. Access road on the creek side is not a pr	An access road has been updated in Figure 5.1		Agreed
			23	**Pond 6.1 Design (Figure 5.3)**:			
				a) Pond inlets and outlets are very close, which may lead to short circuiting. Pond configuration shoul	The pond has been desisigned with an elongated flow path to prevent short-circuiting.		Agreed
				b) Please clarify why an outlet channel is proposed, instead of a direct outlet to WC 6.1.	The flat topography of the site does not permit the use of a direct connection to the watercourse using a piped system. Optimization of the SWM facilities will be completed during the detailed design stage.		Agreed
				c) Please clarify whether a berm is required at Barton street side, to accommodate the emergency spill	The required berm is shown on Figure 5.3		Agreed
			24	**Hydrologic Model:** it is our understanding that the PCSWMM model is used to verify pond performance only and pond design target flows will be based on SCUBE study. Please clarify why existing condition is modelled. Digital PCSWMM model files should be included with the report.	Model files have been provide. Existing conditions have been modelled to ensure agreement with the SCUBE study results.		Agreed
Hydrogeological Assessment	n/a		25	A Hydrogeological Assessment Study should be provided for Block 2, as per terms of reference.			Further discussion may be required. Please provide response.
				Figure 5.12-Sanitary Drainage Area Plan:			
				a) Please clarify the sanitary outlet of 795 and 805 HWY 8. There are no sanitary sewers along HWY8.	There are no existing sewers on Highway 8. Should the institutional properties, 795 and 805 require a sanitary sewer connection, then, these lands would be serviced through a connection to the north south collector sewer.	A note will be added to the report to show how the lands would be serviced.	Agreed

				b) Please confirm the sanitary outlet for potential development at 884 Barton street east, the parcel c	The report (page 66 second paragraph) outlines how 860 will be serviced. Municipal No. 860 should have read 884. The report will be revised to reflect this. The lands on either side of the north south collector road are included in the catchment areas A1 (left side of the collector road) and A2 (right side of the collector road) and not A3.	The report will be revised to note how 884 Barton Street and the lands on the east and west side of the north-south collector road will be serviced.	Agreed
			26	**c)** The proposed sanitary sewer along HWY8 should be extended westerly upto Block 2 limit, to ensure	An alternate local sanitary sewer was shown on Highway No. 8 from Watercourse 7.0 to Glover Road as there was a suitable outlet at Highway No. 8 and Glover Road should the lands adjacent to Higway 8 develop before the proposed Block 2 internal sanitary sewers. The lands on Highway No. 8 from Watercourse 6.0 to 7.0 east and west of the north south collector road would need to be serviced from the sanitary sewer on the north south collector road. These lands have already been included in the sanitary drainage plan to be serviced by local sewers which connect to the north south collector road sanitary sewer.	A note will be added to the report.	Agreed
				d) As per City standards, for last run a 200mm sanitary sewer can be provided at a minimum 0.75% slo	This has been revised. The 0.1% slope should have read 1.0% as per the sanitary design sheet.	No further revisions are required.	Agreed
				e) The 250mm sewers from MHA 27 to MHA 4, MHA 40 to MHA 8, MHA 29 to MHA5 are extremely fla	This has been revised to be consistent with the sanitary design sheet. The slopes that were shown on Figure5.12 were incorrect.	No further revisions are required.	Agreed
		65		**f)** Please indicate the external area south of HWY8 that is included in the Glover road sanitary catchm	Only the external area contributing to the Block 2 sewers (at the north south collector road) were shown on Figure 5.12. City sewer design sheets for the existing boundary sewers was requested but not received.	No further revisions are required.	
	Sanitary Sewer Services			**g)** 288 Glover Road proposed connection to the existing sewer along Barton street, which outlets to G	Please provide sanitary connection information for 288 Glover Road.	The City is to provide the development sanitary sewer connection information and the drainage plan for Barton Street.	City will send - has now been sent, as of writing this comment - March 13, 2018.
				h) Pond 6.1 location is not consistent with other figures. Please revise.	Please identify inconsistency.	The City is to identify inconsistency.	
				i) Please use a legible and differentiable legend for subcatchment boundary. The individual subcatchment boundaries are hard to read at some places.	Revising the colour of the boundaries will likely make the plan more difficult to read.	The figures were reviewed. No further revisons are required.	
			27	Please clarify what sanitary sewer upgrades (lowering and/or upsizing) are required along Barton street and Glover Road, as noted in the report.	The proposed sewer upgrades are shown on Figures 5.12 and 5.14 on Barton Street and Glover Road.	No further revisions are required.	
				Sanitary Sewer Design Sheet (Appendix A2):			
				a) Barton street sanitary sewer assessment should be extended to Jones Road, to identify any necessa	The City design information for the Barton Street sewers were requested but not received. The review completed by this study to Jones Road on Barton Street only identified needs to replace the existing sanitary sewers shown.	The City is to provide drainage plans for the existing Barton Street sanitary sewer.	Information was provided as of writing this report - March 13, 2018
				b) Glover Road sanitary sewer assessment should be extended upto the 525mm sewer north of Barto	The City design information for the Glover Road sewers were requested but not received. The review completed by this study to Barton Street only identified needs to replace the existing sanitary sewers shown. The drainage area for 288 Glover Road was shown to be included in the Barton Street sewer on the City provided drainage area figure (Figure 5.13).	The City is to provide drainage plans for the existing Barton Street sanitary sewer.	Information was provided as of writing this report - March 13, 2018
			28	**c)** Please verify the sanitary peak flow calculation for area A32. The peak flows are over estimated. Wi	The peak flow is 1.85. The spreadsheet will be revised.	No additional revisions are required.	
				d) Please verify the flow calculation for area A4. The cumulative area and population seem to be over	The cumulative areas for A4 will be reviewed.	Revisions will be made as required by review.	
				e) Please verify the slope of existing 375mm sewer from manhole CEXT1 to C2, 1.6% slope is used whi	The slope of the existing 375 mm sewer will be reviewed.	Revisions will be made as required by review.	

				f) MHA2 will receive additional drainage from east. It should be added.	Drainage area A2 represents the Contributing drainage area to the east of MHA2.	No further revisions are required.	
				g) There are multiple inconsistencies between the design sheet and the sanitary drainage area plan, e	The slopes of the sewers on Figure 5.12 will be revised to be consistent with the slopes on the design sheet which are correct.	No additional revisions are required.	
				h) Population density should be rounded number.	The population density for AEXT1, A27 and CEXT1 could be rounded to remove the decimal. Is this required.	The population densities will be rounded for areas, A2, A27 and C2.	
	Watermain Design		29	**Watermain Hydraulic Report**:			
				a) The report should be signed and stamped by a Qualified Professional Engineer.	The final report will be signed and stamped.	The final report will be stamped.	
				b) Digital model files should be provided.	Digital model has been transferred.	Digital models have been provided to the City.	
				c) Please provide a larger/expanded diagram for the model study area, shown in Figure 2. Hard copies of model output files should be provided, with results at different nodes.	Will review.	Will accommodate as best as practical.	
				d) Please clarify how the demand population of 3900 is calculated.	The population demand of 3900 was derived from the sanitary drainage sheet cumulative population less boundary street areas that are currently serviced and external input from the south of Highway No. 8.	No revisions required.	
			30	**Figure 5.11-Watermain Plan**: adequate watermain looping should be provided to ensure sufficient redundancy. We note that the following locations do not have looping:			
				Ø Area C, east of WC 7.0;	Note added to Figure 5.11 for looping of watermains. Alternately an alternative watermain connection could be considered from Local Road 3 across Watercourse 7.0. The road layout for Area C is subject to the final development arrangement (assembly of lots etc.) which will impact the watermain layout.	A note will be added to the report.	
				> Cul-de-sacs at local road 1 and 11.	Note added to Figure 5.11 for looping of watermains for dead end streets.	A note will be added to the report.	
	1.0 Introduction	1	1	**1.2 Study Purpose**: A Terms of Reference was prepared for this project by the City. This should be referenced within this section.	Tasks within the RFP and proposal have changed following multiple discussions with the City, in part due to land access and changes on the landscape. As such, the TOR in the RPF is not wholly relevant.		Further discussion is needed. If there are changes to the scope of work, it should be clearly identified what has changed. Even if there was access issues, the timing of the fieldwork would not have changed. The ToR represents the work plan and aids in review. In addition, the work identified should be same for the other blocks (provide a level of consistency). Information on the changes should be provided.

	Existing Stud	9	2	**2.2 SCUBE West Subwatershed Study**: Within the section entitled "Natural Heritage System" it is stated "As detailed in the EIS completed in support of the Block 2 Servicing Strategy, (the NHS is comprised of Core Areas (comprised of Key Natural Heritage Features, Key Hydrologic Features and Local Natural Areas and their associated Vegetation Protection Zones (VPZs)) collectively with Linkages comprise the Natural Heritage System (NHS)." This should be revised to "As detailed in the EIS completed in support of the Block 2 Servicing Strategy, (the NHS is comprised of Core Areas (Key Natural Heritage Features, Key Hydrologic Features and Local Natural Areas and their associated Vegetation Protection Zones (VPZs)) collectively with Linkages". In addition it is noted that hazards such as floodplain and erosion hazard lands, constitutes constraints to development. It is the opinion of Natural Heritage Planning staff that the word "constraint" provides a negative connotation.	The document text has been changed per the City's request. Please provide the term preferred over "constraint".		Further discussion is needed. A more appropriate word may be limitation to development.
		13	3	It is the opinion of Natural Heritage Planning staff that the title of this section should be revised to "Existing Conditions Methodology".	Noted.		Approve.
		14-15	4	**3.3 Aquatic Resources**: a) On page 14, a figure (3.1) identifying fish habitat classification has been provided. Natural Heritage Planning staff is concerned that this figure has not been clearly labelled. In addition, Watercourse 6.1 has not been labelled on this figure. As a result, this figure should be updated. b) On page 14, it has been identified that a portion of Watercourse 6.1 was added to the watercourse mapping following a site visit. The date of the site visit should be provided. c) On page 14, as an editorial note, this figure should be moved below "Figure 3.1, below" d) On page 15, Figure 3.1 has been duplicated. This should be removed.	a) The figure can be revised to include a label on WC 6.1. b)The date has been provided. c)Noted. d) Noted.		Approve.
				3.4. Natural Heritage System:			
				a) As an editorial note, a large space is located on page 15 under the section title. The information should be re-organized to fill up this space.	Noted.		Approve
				b) On page 16, it has been identified that the City of Hamilton has taken a "nested" approach to natural heritage system planning. As a point of clarification, the City has taken a "systems" based approach to natural heritage planning, which is the same approach undertaken by the province. Both features and their functions need to be taken into consideration.	Noted. The change has been made.		Approve
				c) On page 16 it has been identified that Linkages are "defined as landscape areas that connect Core Areas". As a point of clarification, Linkages are natural areas within the landscape that ecologically connect Core Areas. This statement should be revised.	The report has been revised accordingly.		Approve
				d) On page 16 it has been stated that "the intent of the City's natural heritage policies is to "preserve and enhance Core Areas and to ensure that any development or site alteration within them shall not negatively impact their natural features or their ecological functions". Natural Heritage Planning staff is concerned that the policy number has not been referenced. This is policy C.2.3 within Volume 1 of the Urban Hamilton Official Plan (UHOP). This policy number should be referenced.	The report has been updated accordingly.		Approve
				e) On page 16 Policy 2.3.3 has been referenced. It is important to note that this is policy C.2.3.3 within Volume 1 of the UHOP. This statement should be revised with the appropriate policy reference.	The sentence in which the reference is included read as follows: "According to the City of Hamilton's Urban Official Plan (policy 2.3.3), "The natural features and ecological functions of Core Areas shall be protected and where possible and deemed feasible to the satisfaction of the City, enhanced". The sentence now reads: "According to the City of Hamilton's Urban Hamilton Official Plan Policy 2.3.3, "The natural features and ecological functions of Core Areas shall be protected and where possible and deemed feasible to the satisfaction of the City, enhanced."		Further discussion is required. Since the Urban Hamilton Official Plan contains three volumes and many sections, the intent of the comment was to ensure to note which section this policy was referenced from (Volume 1 policy C.2.3.3). The sentence should be revised to include the reference of Volume 1 policy C.2.3.3.

	3.0 Development of Existing Conditions	15-19	5	f) On page 17, it has been identified that biophysical studies were completed in 2015. The timing of these studies should be provided. Further clarification is required on how these studies compare with the Terms of Reference.	The timing of biophysical studies is contained within the EIS. See also response to (1), above.	Further discussion is needed. If there are changes to the scope of work, it should be clearly identified what has changed. Even if there was access issues, the timing of the fieldwork would not have changed. The ToR represents the work plan and aids in review. In addition, the work identified should be same for the other blocks (provide a level of consistency). Information on the changes should be provided.
				g) On page 17, it has been stated that "Core Areas of the Natural Heritage System consist of wetlands, significant woodlands, significant wildlife habitat and watercourses". As a point of clarification, Core Areas are comprised of more than just these features. Is this supposed to be specific to the study area? Further clarification is required. In addition, it is important to note that significant habitat for threatened and endangered species has been identified as a Core Area within the UHOP.	Clarification has been provided and additions have been made per the City's request.	Approve
				h) On page 17, it has been identified that "constraints and opportunities to development, which includes the NHS". Natural Heritage Planning staff is concerned with the use of the word "constraint". This provides a negative connotation.	Please provide the term preferred over "constraint".	Further discussion is required. A more appropriate word may be a limitation to development.
				i) On page 18, Table 3.1 (Summary of Core Areas and Linkages within the Natural Heritage System) has been provided. Natural Heritage Planning staff is concerned that Species at Risk is missing from this list. In addition, Natural Heritage Planning staff is concerned with the discussion that has been provided for permanent and intermittent watercourses "Watercourses 6.0 and 7.0 are permanent watercourses as identified in Schedule B8 of the City of Hamilton's Official Plan (2013)". As a point of clarification, it is important to note that all types of watercourses (permanent and intermittent) are identified on Schedule B-8.	Watercourse 6.1 is not shown on OP Schedule B-8. Table 3.1 provides an overview of the features within the study area and their corresponding NHS designations. Under the subheading "permanent and intermittent watercourses, the text reads: "Watercourses 6.0 and 7.0 are permanent watercourses and are shown in Schedule B-8 of the City of Hamilton's Urban Official Plan (2013). Based upon observations made in the field and information contained within the SCUBE Phase 1 & 2 report, Watercourse 6.1 and Watercourse 7.0 are considered intermittent watercourses. Watercourse 6.0 is considered an intermittent watercourse, with the exception of the lower reach that is located between residential properties fronting on Barton Street. This latter area is considered a permanent watercourse." Furthermore, SAR have been included in the list.	Further discussion is required. Within Table 3.1 provided on page 18, SAR has not been included in the list (the list includes fish habitat, wetlands including unevaluated wetlands, significant woodlands, significant wildlife habitat, permanent and intermittent watercourses and linkages). SAR is identified as a Core Area (key natural heritage feature). As a result, SAR should be included within this list. With regards to watercourses The intent of the comment is that the watercourses that have not been characterized as permanent or intermittent on Schedule B-8.

				j) On page 19, Figure 3.3 (Vegetation Community Map) the vegetation communities have been identified. Natural Heritage Planning staff is concerned that the ELC community descriptions have not been provided. In addition, only 1 area has been identified as “not assessed”. Natural Heritage Planning staff is concerned that this is not quite accurate since the property at the corner of Barton and Glover was not accessed as part of this study. Further clarification is required. The air photo that has been provided is not representative of the most-up-to-date information (church on east side of Glover Road has been removed). The City has 2015 air photos available. It is the opinion of Natural Heritage Planning staff that all figures using air photos should use the 2015 information.	Vegetation community types can be included adjacent to the community codes. The property near WC 6 is labelled as "not assessed" because during the time of vegetation community evaluations, the lands were in the process of being cleared/had recently been cleared and as such could not be assessed. Figure 3.3 will be updated to read "Areas not subject to vegetation community assessment". The EIS and EA now contain a map illustrating property access. Lastly, the aerial photo used in the report was provided by the City of Hamilton.		Further discussion is required.While the community types have been identified, descriptions of the vegetation communities should be provided (e.g. what was the species composition, dominant species). Although Figure 3.3 will be updated to “Areas not subject to vegetation community assessment”, these areas were also not subject to other studies. It is the opinion of Natural Heritage Planning staff that it should be clearly identified that property access was not granted to complete any natural heritage surveys. While the City may have provided the air photos, it is the opinion of Natural Heritage Planning staff that the most up-to-date information should be used. Currently the City has 2017 air photos.
		20	6	**3.5 Establishment of the Natural Hazards and Environmental Constraints Map:** It has been stated *“as detailed in the EIS, nesting and foraging habitat for both barn swallow and bobolink is present within the study area. Following talks with the City of Hamilton, it is expected that habitat for barn swallow will be compensated for within the study area in a natural state adjacent to open parkland and wetland; habitat for bobolink will be compensated off-site ”*. Natural Heritage Planning staff is concerned with this statement. Since Species at Risk are under the jurisdiction of the Ministry of Natural Resources and Forestry (MNRF), any removal of habitat would need to be discussed with this agency. This statement should be revised. In addition, it has been stated that habitat for Barn Swallow and Bobolink habitat for these species is not shown as a constraint to development. Natural Heritage Planning staff is concerned that this statement does not match Figure 3.4 (Constraints and Opportunities to Development).			Further discussion is required. This has been discussed further under comment #22.
	4.0 Developme nt Plan	26	7	**4.2.3 Concept Plan**: It has been identified that “the location of these local road connections within the watercourse floodplain areas will be confirmed through an environmental impact review and HCA approvals during the development process that will follow the completion of the Block Servicing Strategy”. It should be clarified that an “environmental impact statement” would be required and that the review of this report would be to the satisfaction of the City and HCA.			Further discussion is required. The intent of this comment was to use the terminology of environmental impact statement and not environmental impact review.
				6.4.1 Recommendations for Further Study		

City of Hamilton (Melissa Kiddie - Natural Heritage Planner)	**6.0 Implementation**	46-80	8	a) On page 76 it has been identified that Watercourses 6.0 and 7.0 are candidates for restoration and re-vegetation. Since this will aid in future development applications, it is the opinion of Natural Heritage Planning staff that a high level discussion on the location and type of species should be discussed. Further discussion is required.	It is understood that the City and HCA are currently working with one of the landowners near WC 6.0 on restroation of forest and wetland habtiats that were cleared. Further information has been provided in Section 6.5.	Further discussion is required. If Aquafor Beech is referencing to 238 Jones Road, this is not accurate. There may have been discussions about restoration in during preliminary OMB discussions, however nothing has been finalized. As a result, a high level discussion on the location and species for restoration should be identified.
				b) On page 79, it has been identified that the woodland known as Woodland 6 in the SCUBE report was removed. As a point of clarification, this woodland was removed legally.	It is understood that the woodland was cut in accordnace with the current tree bylaw at the time. Please confirm if the removal of Significant Wildlife Habitat and wetlands (SWD2-2) was approved/completed legally.	Further discussion is required. The current zoning on this property is Agricultural Specialty Zone (AS) as per the Stoney Creek Zoning By-law 3692-92. Agricultural uses are permitted in this zone.
				c) On page 79, it has been identified that the completion of an EIS may be required for the properties that were not assessed. On page 80, specific inventories have been identified. It is the opinion of Natural Heritage Planning staff that this should be more general to provide more flexibility. The recommendation should be left general "the EIS should be prepared in accordance with the City's EIS Guidelines".	The City had requested that the report include a list of specific studies to be included in an EIS. The report states that the listed studies are considered minimum requirements, and that studies are to be completed in accordance with the City's EIS guidelines. We have added wording which states that the EIS is to be prepared in consultation with the City & HCA.	Further discussion is required. Further clarification is required on who requested the specific information. Since Natural Heritage Planning staff review these reports, it would be best to allow for flexibility and be more general.
				d) On page 80, for the property located at the southeast corner of Barton Street and Glover Road, it is "recommended that the natural heritage designations and their accompanying designations and protections under the City of Hamilton's Official Plan and the policies of the HCA as detailed in this report remain". It is important to note that there are no Natural Heritage designations on this property as per the Fruitland-Winona Secondary Plan mapping (B.7.4-2) or the UHOP Volume 1 Schedule B (Natural Heritage System). Further clarification is required.	The discrepancy has been discussed in several meetings with the City. The City has directed Aquafor to include the Secondary Plan map as it was presented to the public. It is understood that landowners will need to consult with the MNRF re: SAR habitat and permitting requirements under the ESA.	Approve. Need to clearly state within the report that landowners will need to consult with the MNRF regarding SAR habitat and permitting.
		6	9	a) It has been stated that "the NHS approach is a useful method for the protection of natural features and areas…" As a point of clarification, the "systems" approach has been identified in provincial policy for several years.	Noted.	Approve.
				b) It has been identified that the City of Hamilton has taken a "nested" approach to natural heritage system planning. As a point of clarification, the City has taken a "systems" based approach to natural heritage planning, which is the same approach undertaken by the province.	Noted.	Approve
		7	10	a) There are several locations within the EIS where reference has been made to the City's Rural Official Plan (RHOP) (e.g. pages 7, 28, 30, 31). The study area is located within the Urban Hamilton Official Plan (UHOP). All references to the RHOP should be revised.	Noted. The change has been made.	
				b) In the second last paragraph ("connections between natural areas…"), it has been identified that Linkages are discussed in Section 0. This section does not exist. This reference should be changed.	Noted.	Approve
				c) Policies within the UHOP have been quoted ("to preserve and enhance Core Areas…". Natural Heritage Planning staff is concerned that the appropriate policy reference has not been provided. The reference is UHOP Volume 1 policy C.2.3.	Noted. The change has been made.	Approve

8	11	a) Policy 2.3.3 has been referenced. It is important to note that the appropriate reference for this policy is UHOP Volume 1 policy C.2.3.3. In addition, other policies have been quoted. Natural Heritage Planning staff is concerned that appropriate policy reference has not been provided. • New development and site alteration shall not be permitted within fish habitat, except in accordance with provincial and federal requirements (UHOP Volume 1 policy C.2.5.3). • New development and site alteration shall not be permitted within significant woodlands, significant valleylands, significant wildlife habitat and significant areas of natural and scientific interest unless it has been demonstrated that there shall be no negative impacts on the natural features or on their ecological functions (UHOP Volume 1 policy C.2.5.4). • New development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in Section C.2.5.2 to C.2.5.4 unless the ecological functions of the adjacent lands has been evaluated and it has been demonstrated that there shall be no negative impacts on the natural features or on their ecological functions (UHOP Volume 1 policy C.2.5.5)	Noted. The requested changes have been made.	Approve
		b) Within Section 2.2.1 Greenbelt Plan, it has been identified that the current version of the Greenbelt Plan is 2005. It is important to note that the Greenbelt Plan has been updated and came into effect July 1, 2017	Noted. The change has been made.	Approve
10	12	a) Field inventory methodologies have been outlined within Section 3. A table should be provided outlining the field surveys completed and the dates they were completed. This aids in understanding if the surveys were completed during appropriate timeframes	Survey dates were provided in each of the subsections.	Further discussion is required. It is the opinion of Natural Heritage Planning staff that this comment has not been addressed. A summary table of the field inventories needs to be provided. This provides a quick understanding of when the surveys were undertaken.
		b) Botanical Survey: It has been identified that only a fall survey was completed. How does this compare with the Terms of Reference? Generally a two season survey (spring and late summer/early fall) is to be undertaken	The EIS states that botanical surveys were conducted in September 2015, with additional species observation from the June 2016 site visit incorporated into the overall species list. As stated on pg 10, "Spring surveys for ephemerals were not completed given the lack of potentially suitable habitat within the study area (i.e. mature upland forest) to which the study team had access".	Further discussion is required. How does the botanical surveys compare to the Terms of Reference? Further clarification is required.
		c) Breeding Bird Surveys: It has been identified that breeding bird surveys were undertaken on June 4, 2015, June 18, 2015 and July 8, 2015. Generally two inventories are to be completed as part of this survey (1st between May 24 and June 15 and 2nd between June 16 and July 10th). Were two surveys completed at each location? Further clarification is required	An additional survey was undertaken to confirm the ID of a species the project ornithologist was unsure of.	Further discussion is required. Were the inventories completed in the appropriate timeframe for all survey locations? Further clarification is required.
		d) Amphibian Calling Surveys: Although the dates have been included in Table 3.1 (Amphibian Survey Metadata), it is important to ensure that the timing for the studies was appropriate. The dates should be clearly identified. In addition, survey locations have been identified on Figure 3.2. It appears that the majority of the stations were completed at the roadside. Were appropriate locations not available on the properties where access was granted? Further clarification is required.	Staff is unsure of what is missing from the table, as times and dates are both provided. Please note that land access was not fully secured ahead of the anuran calling survey timing window. We feel that the locations selected provided adequate coverage.	Aquafor Beech can disregard the first part of this comment since appropriate information has been provided. Further discussion is required based on second half of comment. Natural Heritage Planning staff is concerned that the second part of this comment has not been addressed. Even if land access was not obtained in the first year (2015) of the field surveys, onsite visits could have been completed in 2016. It should be clearly identified why roadside surveys were appropriate.

	Appendix E: EIS	15	13	It has been identified that DECW is located approximately 60 m east of the terminus of McDonald Lane. This has not been identified within Table 4.1 (Vegetation Communities identified within Block 2 Study Area) and Figure 4.1 (Vegetation Communities). Further clarification is required.	As detailed on pg 15, DECW has been reclassified at CUT.	Further discussion is required. In order to make it very clear that previous areas identified within SCUBE that have not been visited as part of the Block Servicing Strategy have been identified as CUT, reference should be provided on Figure 4.1
		18	14	Natural Heritage Planning staff has concerns with the information provided on Figure 4.1 (Vegetation Communities). As a result of these concerns, this figure needs to be revised. a) A description of the vegetation communities have not been provided for the ELC code (e.g. MAM2-Mineral Meadow Marsh)	The figure will be revised accordingly.	Approve
				b) There are polygon numbers (1A, 10A, 10B) missing from the legend.	Polygon numbers have been added.	Approve
				c) As mentioned above, DECW is missing from the figure.	As detailed on pg 15 of the report, DECW was reclassified at CUT.	Further discussion is required. In order to make it very clear that previous areas identified within SCUBE that have not been visited as part of the Block Servicing Strategy have been identified as CUT, reference should be provided on Figure 4.1
				d) Only 1 area has been shaded as “area not assessed”. This is not quite accurate since the property at	The property near WC 6 is labelled as "not assessed" because during the time of vegetation community evaluations, the lands were in the process of being cleared/had recently been cleared and as such could not be assessed. Figure 3.3 will be updated to read "Areas not subject to vegetation community assessment".	Further discussion is required. It is important to note that other inventories were not completed on these properties (not just vegetation).
				e) There are areas that were assessed as part of SCUBE and not visited as part of the Block Servicing Study. As part of SCUBE were these sites ground truthed or were they identified through air photo interpretation? Has there been a change from the SCUBE study?	The vegetation community assessments completed for the SCUBE report (completed by Dillon) were primarily based upon roadside surveys and airphoto interpretation. The work completed as part of the Block 2 report has updated the assessments where applicable, including but not limited to areas that had been altered/cleared since the completion of the SCUBE report. Relevant SCUBE NHS mapping has been included in the report to allow for comparison with the Block 2 NHS.	Aprove. This should be clearly stated within the report.
		21	15	Table 4.2 provides the results of the breeding bird survey. While the point locations have been provided, the connections to ELC communities are missing. As a result, the table should be updated.	Please note that not all of the point count survey locations correspond with an assessed vegetation community. We suggest comparing the NHS and/or ELC maps with the map showing point count locations. Point count locations 5 and 7 correspond to ELC polygons 7 and 6, respectively.	Further discussion is required. Since the point counts have been identified within the table and there are not a lot of ELC communities associated with these areas, the table should be revised.
		24	16	As an editorial comment, the pages appear to be mislabelled (23 is missing).	This was not the case in our document.	Further clarification is required. The numbering was different in the report reviewed by Natural Heritage Planning staff. Please ensure that all numbering is correct.
		26	17	a) Watercourse 6.1: it has been identified that this watercourse is characterized as indirect/supporting fish habitat until a “determination has been made by the Conservation Authority”. It should be clarified that this determination will be included as part of future development applications.	The report has been revised accordingly.	Approve
				b) Figure 5.2 (Fish Habitat Classification) identifies the watercourses within the study area. The label for Watercourse 6.1 is missing.	The figure has been updated.	Approve
		27	18	It has been identified that a list of Species at Risk (SAR) was compiled from a variety of sources. One of these sources was the MNRF SAR list for Grimsby. It is important to note that the study area is within the limits of Hamilton. As a result, the list for Hamilton should be reviewed	Following Aquafor's information request, the MNRF provided the study team with the list of species from Grimsby. As such, that was the list that was used for the SAR assessment.	Further discussion is required.If the wrong list had been provided from the MNRF, the appropriate one for the City of Hamilton should have been obtained.

29	19	As an editorial comment, it has been identified “in sum, though the monarch is present within the study area, there are no features of significance to the species”. This should be revised to “in summary, though the monarch is present within the study area, there are no features of significance to the species”.	The phrase "in sum" is synonymous with summary.	Approve
32	20	Within sections titled “Specialized Habitat for Wildlife: Special Concern and Rare Wildlife Species” and “Seasonal Concentrations of Animals: Bat Maternity Colonies” it has been identified that details are provided in Section O. This section does not exist. Further clarification is required.	The references have been updated.	Approve
35	21	Linkages have been identified as part of this study. How do these linkages compare to those identified within the Fruitland-Winona Secondary Plan? Further clarification is required.	Please see Figure 13.2: SCUBE Natural Heritage System.	Further discussion is required. Within the report provided to Natural Heritage Planning staff, Figure 13.2 has not been included. Further clarification is required.
37	22	It has been stated that “following talks with the City of Hamilton, it is expected that habitat for barn swallow will be compensated for within the study area in a natural state adjacent to open parkland and wetland; habitat for bobolink will be compensated off-site”. Natural Heritage Planning staff is concerned with this statement. Since Species at Risk are under the jurisdiction of the Ministry of Natural Resources and Forestry (MNRF), any removal of habitat and compensation would need to be discussed with this agency. This statement should be revised	The statement has been revised. Please note that negotiation of permits under the ESA are outside the scope of work for this project.	Approve
37	23	a) As an editorial note, there are two pages identified as 37.	Noted.	Approve
		b) Table 11.1 (Summary of Core Areas and Linkages within the Natural Heritage System) identifies Linkages. How do these Linkages compare to those identified within the Fruitland-Winona Secondary Plan? Further clarification is required.	Please see Figure 13.2: SCUBE Natural Heritage System.	Further discussion is required. The Natural Heritage System should be representative of the Secondary Plan. It is important to show if there are differences.
		c) It has been noted that Watercourses 6.0 and 7.0 are permanent watercourse identified in Schedule B-8 of the UHOP. As a point of clarification, watercourses have not been denoted as intermittent or permanent on this schedule.	The table provides an overview of the features within the study area and their corresponding NHS designations. Under the subheading "permanent and intermittent watercourses, the text reads: "Watercourses 6.0 and 7.0 are permanent watercourses and are shown in Schedule B-8 of the City of Hamilton’s Urban Official Plan (2013). Based upon observations made in the field and information contained within the SCUBE Phase 1 & 2 report, Watercourse 6.1 and Watercourse 7.0 are considered intermittent watercourses. Watercourse 6.0 is considered an intermittent watercourse, with the exception of the lower reach that is located between residential properties fronting on Barton Street. This latter area is considered a permanent watercourse."	Further discussion is required. The intent of the comment is that the watercourses that have not been characterized as permanent or intermittent on Schedule B-8.
41	24	It has been stated that habitats of barn swallow and bobolink are “expected to be compensated under the Endangered Species Act permitting process”. Natural Heritage Planning staff is concerned with this statement. The MNRF implements the permitting process. Further discussions will need to occur with this agency.	The statement has been revised. Please note that negotiation of permits under the ESA are outside the scope of work for this project.	Approve
42	25	Figure 13.1 (Constraints and Opportunities to Development) identifies the Core Areas. It is unclear if Linkages have been included within this mapping? Further clarification is required.	The EIS now includes a stand alone figure which outlines all Core Areas and Linkages. Core Areas and Linkages will be included in the Constraints and Opportunities mapping.	Approve

		44	26	It has been identified that restoration downstream of Watercourse 6.0 and all of Watercourse 7.0. Natural Heritage Planning staff is concerned that a high level discussion on the location and type of restoration has not been provided. Further clarification is required.	See Section 14.3.	Further discussion is required. If Aquafor Beech is referencing to 238 Jones Road, this is not accurate. There may have been discussions about restoration during preliminary OMB discussions, however nothing has been finalized. As a result, a high level discussion on the location and species for restoration should be identified.
		45	27	Within the Recommendations, it has been identified that HCA will determine the status of Watercourse 6.1 and assess whether there is a surface water connection between the wetland complex at the corner of Barton Street and Glover Road. It is important to note that this should be completed at the development application stage.	The report has been revised accordingly.	Approve
	Based on the above comments, it is the opinion of Natural Heritage Planning staff that the Draft Block 2 Servicing Strategy should be revised					
City of Hamilton - Margaret Fazio: Email Comments			1	AODA Guidelines for City of Hamilton dictate that a FONT of Verdana or Arial size 12 (with capability for 17) need to be used for all reports. Please amend yours to match this requirement in the next version of the report.	Have not revised the font of the Dillon sections. Assume Aquafor Beech will do this for the revised report.	
			2	Please add the names of the **City Study Team** after the list of Appendices – cc'd staff should be included.		
		6	3	a) top paragraph: Watercourse 6.0 and 7.0 mention – representation in the report needs to be discussed.		
				b) Block 2 SS to include: #1 - The location of the neighbourhood park – it has already been determined, by the FWSP, not this study. – Please explain.	Wording to be revised in the report from location of the neighbourhood park to just neighbourhood park since the Block 2 servicing study is not determining the location of the park.	
				c) Paragraph - 3rd FROM BOTTOM: Fruitland-Winona Transportation Classification Plan – is this the correct name? Suggest changing to "Neighbourhood Transportation Plan".	The name of the drawing is the Fruitland-Winona Secondary Plan Transportation Classification Plan.	
				d) Paragraph – 2nd FROM BOTTOM: SMW facilities…suggest rewording to: "…facilities locations were not finalized as part of the FWSP process". Later in the same paragraph suggest rewording to "...facilities locations will be finalized through the Block Servicing Strategy".	Wording in the report will be revised as suggested.	
				e) Is "Fruitland-Winona Secondary Plan" identified as "Secondary Plan"? Please ensure that this has been documented prior to using the shorter term.	Shorter version will be documented before using the shorter version.	
		7	4	OMB date – please state "on December 4, 2015".	Wording will be revised from on or about to on December 4, 2015.	
	Storm Water Managem	9	5	**Stormwater Management**		
				a. Please define water quality "Level 1" and "Level 2" or reference original source		
				b. Water balance requirements vary based on soil type. Could you provide more details?		
	Natural Heritage System (NHS)	9 & 14	6	a. Please see attached separate comments from Melissa Kiddie and Servicing staff.	Noted.	
				b. W.C. 6.1 – We need to resolve the wording at our meeting.	HCA comments have provided direction as to the status of Watercourse 6.1 and the report has been revised accordingly.	
				c. W.C. 6.1 – Bottom of page 14 – status of this additional portion of the watercourse is not cu		
				d. Similarly W.C. 6. 1 0 Table 3.1 – Permanent and Intermittent Watercourses – subject to furt	n/a	
				e. Etc.	n/a	
	Developm ent of Concent Plan	22	7	please add bullet points in the second set, as follows:	Additional bullet points will be added.	
				a. Local roads		
				b. W & WW servicing needs		
				c. Grading		
	Figure 4.4		8	a. Study area map does not, nor did we find in writing an acknowledgement that the Barton and Fifty Road Improvements Phases 3 & 4 EA and Highway 7 Phases 3 & 4 MCEA are ongoing, and that the FWSP has identified a need to widen their ROW widths, with Barton at 40m ROW, offset by 4 m to the south, and Highway 8 urbanization to the north side only.	Notes have been added to Figure 4.4 to reflect the comments.	

				b. Please remove the MUP entirely from the map, since the local road is being put in its place.	The Multi Use Trail shown on Figure 2.2 has been removed from Figures 4.4, 5.7, 5.9, 5.11 and 5.14.	
	Table 5.1	31	9	a. Please provide the long form of "WNV".		
	Figure 5.1		10	Is a trail connection possible along the Pond 6.0, that would link to Barton Street etc.? Please increase the font size of labels on the drawing – it's too small to read.		
	Figure 5.13		11	drawing is out of focus – not legible. Please amend.	Figure 5.13 was derived from a figure provided by the City and can not be modified	
			12	During Barton and Fifty Road EA – culvert sizing will be taken entirely from Block Servicing, so they need to be confirmed now, as per attached comments.		
		69	13	Third bullet - please provide the full version of "WS".	WS will be revised to Weather Station.	
		71	14	Please see comments # 13.		
		72	15	Second paragraph – HCA Flood Plain Mapping used (last updated?) – we should offer wording that reflects that there is a potential to change, since HCA is currently in review and although they don't anticipate big changes some will have to be accommodated after Block Servicing is completed. Not sure if this would happen on an application basis or if we would need to amend Block Servicing?...Question for Discussion at the meeting.		
			16	WC 7.0 restoration is currently under way via Public Works Department, north of Barton Street. City will provide updated wording.		
		76	17	**6.4.1 on pg. 76 – 3 & 4 – subject to discussion at our meeting.**		
		80	18	Concept Plan – Bike Lanes – Please see the intended grid pattern density for Bike Lanes in the Cycling Master Plan and Engineering Guidelines, which dictate that all Collector Roads must provide an on-road bike lanes. They should now be included in our Functional Design.	The City of Hamilton Comprehensive Development Guidelines and Financial Policies Manual notes an 11.0 m pavement width for the north south collector road. Additional direction will be needed from the City on the lane configuration is preferred for the 11.0 m pavement. The pavement markings (lane configuration) should be identified during the preliminary design stage when the pavement width is confirmed and the transportation impact study has been completed.	
		84	19	**Recommendations pg. 84 - #3 – subject to discussions at our meeting.**		
		187	20	Comprehensive Development Guidelines – pg. 187 – please increase font/page size – the used font is illegible in this format and does not meet AODA requirements.		
			21	Field Data notes – should these be made public?		
			1a	Areas not accessed/assessed are shown on Figure 3.3. HCA staff note this includes the lands at 238 Jones Road. While the report in Section 6.4.1 provides a recommendation for further study of lands not assessed, including for natural heritage constraints, HCA suggest it may be useful to specifically identify this property as requiring further study in Section 6.4.1, as has been done for the properties at 860 and 884 Barton Street.	The property near WC 6 is labelled as "not assessed" because during the time of vegetation community evaluations, the lands were in the process of being cleared/had recently been cleared and as such could not be assessed. The figure will be updated to read "Areas not subject to vegetation community assessment". The EIS contains a map illustrating property access.	Further discussion is required - 238 Jones Road should be treated the same as 860/884 Barton Street and placed under section 6.4.1 with a description and directions for further study
			1b	In reviewing the concept plan presented in Figure 4.4, HCA staff note that while the specific underlying features/constraints are not identified, a line to delineate the outer limit of all aggregated constraints (floodplain, natural heritage, etc.) as shown on Figure 4.1 has been overlaid on the underlying land use designations. However, a constraint area boundary for the properties at 860 and 884 Barton Street has not been carried forward from Figure 4.1 to Figure 4.4, and HCA suggests this should be added.	Figure 4.4 shows land use designations and NHS areas per the Secondary Plan and was included at the direction of the City of Hamilton. Dillon: The constraints as shown were as discussed with the City. The City will need to review this request.	Further discussion is required - Constraint area boundary for properties at 860 and 884 Barton Street should be carried forward from Figure 4.1 to Figure 4.4.

	Natural Heritage Features and Watercourses		1c	HCA notes that Figure 4.4 is potentially misleading, as some of the natural heritage feature/buffer constraint areas (as shown in Figure 4.1) are assigned a development land use designation. HCA staff suggest it may be helpful to clarify in the description of how the concept plan was developed (Section 4.2.3), or elsewhere in the report, that land use designations/land uses within the constraint area boundary will be subject to further assessment and review at the time of any proposed development to confirm constraints and development limits. HCA notes Figure 4.1 identifies 'new drainage feature' alignments along watercourses 6 and 7. Staff do not recall these proposed new drainage features from earlier concept plans, and the intent and basis for their identification does not seem to be described in the report. HCA would appreciate the opportunity to review this further with the City and Aquafor Beech Ltd.	Figure 4.4 shows land use designations and NHS areas per the Secondary Plan and was included at the direction of the City of Hamilton. Dillon: This will need further discussion at the Feb. 26 meeting.		Further Discussion needed to clarify what will be in the report - The mapping and text will need to be updated. The constraint mapping should drive the landuse designations.
			1d	With respect to watercourse 6.1, the report indicates in Section 4.3 that it was assumed this feature will be developed. While a seasonally appropriate survey of this feature has not been completed to date, based on the information available and assessment completed through the current study HCA staff note that while the feature does contribute to fish habitat downstream it has limited function overall and would not be required to be retained as an open feature when these lands go forward for development. The drainage contribution of the existing feature to downstream reaches would have to be maintained through the stormwater management design.	Noted. Applicable revisions to the EA and EIS have been made.		Further discussion is required - This would need to be cleared through the DFO first and the report should indicate this as any development of this site will likely occur after the Fisheries Act update is completed and the Fish Habitat component may mean it will have to remain open after all or a Fish Habitat Compensation Project would need completed.
			1e	HCA has previously indicated that the tributary of watercourse 7 that runs south-north along the west side of Glover Road is a regulated watercourse, and as such development constraints should be identified if re-development is to be considered for the existing residential lots located along the west side of Glover Road to the north of Highway No. 8.	Figures will be updated accordingly.		Further discussion is required - Please confirm that through report text and/or Figure labels that it will be clarified that "regarding potential re-development for the existing residential lots located along the west side of Glover Road to the north of Highway No. 8, an assessment of development constraints would be required should re-development be considered at a future planning stage "
	Flood Plain Mapping		2a	Information included in the Letter Report: SCUBE Block 2 Draft Development Constraints prepared by Aquafor Beech Limited, dated August 11, 2016 provides additional details as to the estimated Flood Plain Mapping approach undertaken. HCA suggests this information should be included in the draft report for completeness and reproducibility.	A letter prepared by Aquafor Beech Limited has been referenced in the document included in the Appendix.		Agreed
			2b	Furthermore, HCA staff would like to clarify that the approach undertaken is appropriate for a preliminary determination of development constraints, but is not considered official Flood Plain Mapping and is not in accordance with HCA Flood Plain Mapping standards, as stated in Section 6.2 (p.72). An ongoing HCA study to update official Flood Plain Mapping for this area will eventually supersede findings from the Block 2 Block Servicing Study and may result in some alterations to the development constraints. However, alterations are presently expected to be minor.	HCA's wording has been included on page 13 and referenced on page 72.		Agreed

Hamilton Conservation Authority	**Erosion Hazard Limit**		3a	Information included in the Letter Report: SCUBE Block 2 Draft Development Constraints prepared by Aquafor Beech Limited, dated August 11, 2016 indicated that the erosion hazard limit was calculated from the meander belt allowance and a 6 m erosion access allowance. Please confirm that the meander belt widths identified in Section 3.2 continue to include the 6m allowance. It is suggested that the report by revised to clarify this.	The meander belts were calculated under the following scenario: Wb 14.827 8.319 ln SP * D Where: SP = stream power (Wm-2) gamma = specific weight of water (9806 kg/m2s2) Q = 2 year flow (m3s-1) s = channel gradient (m/m) Wb = meander belt width (m) DA = drainage area (km2) R2 = Correlation coefficient of regression S = standard error of equation SP = gammaQs Aquafor applied two times (x2) the standard error to account for potential changes in hydrology as well as the 6m allowance		Further discussion is required - Please provide what 2 x the standard error is equal to. Also, the 6 m allowance should apply to both sides of the watercourse, thus resulting in a total Erosion Hazard Limit = Meander Belt Width + 12 m.
			3b	The meander belt allowance defines the development constraint limit for some areas adjacent to Watercourse 6 where the main channel geometry and creek alignment were previously unverified due to site access limitations. It is requested that confirmation be provided that the additional topographical information provided by HCA was sufficient to adequately define the main channel geometry and creek alignment in these areas, as this information has the potential to alter the meander belt extents and thus the development constraints limits.	The additional topographic information was reviewed and not expected to alter the meander belts as shown.		Approved
			3c	HCA staff suggest the meander belt allowance calculation details (Drainage Area and Stream Power) should be included in the draft report for completeness and reproducibility.	The meander belt formula is provided in response 3a, and the report has been updated to provide additional clarification for reproducibility purposes as requested.		Further discussion is required - Please provide the calculation sheets for the Meander Belt Widths, showing the watercourse values for channel gradient, 2 year flow and drainage area used in the calculations.
			4	**Calibration/Validation of the PCSWMM peak flow rates and runoff volumes.** As a new model was developed for this study, it is suggested that the calibration / validation process be documented. At a minimum, it is suggested that the peak flow rates and runoff volumes (existing and proposed conditions) be compared as best as possible to SCUBE West SubWatershed Study (Aquafor Beech 2013), which were relied on for the release rate and storage targets. It is suggested that the comparison include locations upstream and downstream of the site.	The SCUBE Peak flow and Volume for the 2yr & 100yr storms were added to the Table 5.9		Further discussion is required - HCA staff request an opportunity to review and comment on the comparison of the peak flows and runoff volumes between the new PCSWMM modeling and SCUBE 2013 results.
			5	**Target Release Rates for Erosion Control and 100-Year Control.** It is HCA staff opinion that these target release rates should be based on existing drainage areas and not the slightly higher proposed drainage areas. Although this is not expected to alter the provided concept Storm Water Management (SWM) facility design, it is suggested that corrections be made to ensure that future design revisions rely on the corrected release rate targets. This could be added to Section 6.3/Section 7.0 as work to be completed as part of future detailed stormwater management design.	Per Page 32, Flood control requirements for Ponds 6.0 and 6.1 are to be consistent with the release rates for Pond 4 from the Scube WEST SWS- "Subsequent sections of this FSR report describe the refinement of the hydrologic estimates from the SCUBE West Subwatershed Study in regards to the subje**ct ponds (Pond 6.0 and Pond 6.1) are noted as a single pond, Pond 4 in regards to water quality and flood control requirements,** however Pond 3 which releases to Watercourse 6.0, provides relevant erosion control criteria and release rates for Pond 6.1."		Further discussion is required - It is not clear to HCA staff how this response addresses the review comment. Furthermore, it is HCA staff's expectation that release rates and flood control storage requirements of Pond 6.0 (drainage to watercourse 6.0) should NOT be dependent on SCUBE 2013 Phase 3 report Pond 4 release rates (drainage to watercourse 6.1)

	Stormwater Management Facility Concept Design		6	**100 Year Control Release Rate for Pond 6.0** It is HCA staff understanding that the 100-year control release rate for Pond 6.0 is 40.6 L/s/ha, rather than 55.7 L/s/ha, per Table 5.2. Although this is not expected to alter the provided concept SWM design, it is suggested that corrections be made to ensure that future design revisions rely on the corrected release rate targets. This could be added to Section 6.3/Section 7.0 as work to be completed as part of future detailed stormwater management design.	Per Page 32, Flood control requirements for Ponds 6.0 and 6.1 are to be consistent with the release rates for Pond 4 from the Scube WEST SWS- "Subsequent sections of this FSR report describe the refinement of the hydrologic estimates from the SCUBE West Subwatershed Study in regards to the subject ponds (Pond 6.0 and Pond 6.1) are noted as a single pond, Pond 4 in regards to water quality and flood control requirements, however Pond 3 which releases to Watercourse 6.0, provides relevant erosion control criteria and release rates for Pond 6.1."		Further discussion is required - It is not clear to HCA staff how this response addresses the review comment. Furthermore, there seems to be some inconsistencies or typos in the response provided. For instance, it is HCA staff's expectation that release rates and flood control storage requirements of Pond 6.0 (drainage to watercourse 6.0) should be based on existing peak flows in watercourse 6.0 at the outlet, NOT be dependent on SCUBE 2013 Phase 3 report Pond 4 release rates (drainage to watercourse 6.1). Also, it is HCA staff's expectation that SCUBE 2013 Phase 3 report Pond 3 release rates (drainage to watercourse 6.0) should provide release rates for Pond 6.0, rather than Pond 6.1.
			7a	**Extended Detention Water Level Relative to Outlet Overflow**. Based on HCA staff interpretation of the MOECC Storm Water Management guidelines 2003, it had been expected that the reverse slope pipe be used as the sole outlet in the water quality and erosion control portion of the facility, and that the outlet chamber can contain openings for flood control and overflow protection.	Per Table 5.9, the combination of the Hickenbottom and Flow Control Manhole with orifice controls (140mm dia. for Ponds 6.0 and 6.1) provides the necessary erosion and water quality control per the MOE 2003 manual and per the Scube West SWS. The modification and optimization of the outlets will be undertaken as part of detailed design.		Agreed - Please ensure that this task is included within Future Study Recommendations
			7b	As such, it had been expected that the outlet control design would include an extended detention water level at the elevation of the overflow grate, rather than above the grate elevation.			
			7c	Clarification is requested that this is an intended design aspect that satisfies the erosion control targets, rather than an inconsistency between the provided design figures and the assessed configuration.			
			8a	**SWMF Drawdown Time Calculations.** It is suggested that the recommended drawdown equation from MOECC Storm Water Management guidelines 2003 be used to verify the calculated drawdown.	Drawdown calculations have been verified using the PCSWMM Model and the MOE 2003 method and supplied with the revised report		Agreed
			8b	In addition, please provide the drawdown calculations as HCA staff were unable to duplicate the stated results.	Results will be provided		Agreed
			9	**Forebay Conveyance Pipes Design.** It is anticipated that at a subsequent development planning stage that refined SWM facility designs and assessments will include suitable forebay conveyance pipes, which were omitted from the current analysis. This could be added to Section 6.3/Section 7.0 as work to be completed as part of future detailed stormwater management design.	Forebay conveyance pipes are not required, may reduce the effectiveness of the forebay and may increase operation and maintenance costs and effort as forebay cannot be isolated from the main cell during dewatering and sediment removal. At a subsequent development planning stage that refines the proposed SWM facility designs , the suitability of forebay conveyance pipes can be considered.		Agreed - Please ensure that this task is included within Future Study Recommendations
			10	**Drainage Area to Watercourse 7.0 - SWM Strategy.** HCA staff would appreciate further clarification on the rationale for the proposed SWM strategy for the watercourse 7.0 drainage area. It is recommended that other source control (quality and quantity) options, including the use of Low Impact Development (LID), also be assessed in addition to the suggested use of a proposed ditch system as quality and quantity control.	The report will be revised to recommend the review of LID features during the detailed design stage as an alternative to the use of ditches. We agree.		Agreed

	Assessment of Potential Downstream Impacts		11a	**Confirmation of No Negative Impacts on Flows and Flood Levels Downstream of Block 2**. It is acknowledged that proposed peak discharges from Block 2 will be below peak flow rates expected under existing conditions, as a result of the proposed SWM facilities control. However, resultant flows and flood levels downstream of Block 2 are a result of the combined effects of the flow contributions from the various tributaries and drainage areas, including runoff hydrographs, total runoff volumes and peak flowrates (timing and magnitude). As such, it is requested that an unsteady state hydraulic analysis be undertaken to confirm that the proposed Block 2 development with proposed onsite runoff controls results in no negative impacts on downstream flows and flood levels (compared to existing conditions).	Page 46 in the SCUBE Subwatershed Study - Phase 3 Implementation defines how the storage facilities were sized and located (Section 5.1.1.1.2 and Table 5.2). This approach was used for the Block 2 Servicing Study. We agree that further assessment, in combination with the ongoing WC 5&6 EA could be undertaken to refine the results.		Agreed - This future planning stage assessment is to include a hydrologic assessment to confirm that under the combined proposed Block 2 and Block 1 SWM facility discharges, that Watercourse 6.0 peak flows are maintained downstream of the SCUBE developments as per existing conditions. That said, after additional consideration it has been deemed that an accompanying unsteady state hydraulic assessment is not required.
			11b	HCA staff note this could be undertaken at a subsequent development planning stage, and recommend this be added in Section 6 and/or 7 as a future work commitment.			
			12a	**Erosion Threshold Analysis**. The SCUBE West SubWatershed Study (Aquafor Beech 2013) indicated controlling outflows for the 2 year storm event to pre-development rates and outflows less than the 2 year storm were to be over-controlled to minimize potential in-stream erosion from the most frequent storm events.			Further discussion is required - HCA staff request an opportunity to review and comment on a comparison of the erosion potential and the erosion control provided.
			12b	As per the Block Servicing Strategy Terms of Reference, it is requested that an erosion threshold analysis be undertaken, to confirm that the erosion control release rate targets are appropriate given existing channel erosion potential of downstream reaches.	Aquafor has updated the report to define the erosion potential of each watercourse, applying an understanding of cumulative shear stress with regards to the the erosion threshold of the channel boundary conditions, applying recommendations for release rates to minimize erosion caused by frequent storm events.		
			13	HCA staff suggest the report should consider and comment on the potential impacts of the proposed over-control of flows for the 2 and 5 year design storms (as per Tables 5.9 and 5.10) on downstream baseflows and aquatic habitat.			Further discussion is required - HCA review comment not addressed to date
	Storm Sewer Servicing		14	**Pond 6.0 Inlet Pipe Design**. HCA staff suggest the sizing and alignment of the inlet pipe to the proposed Pond 6.0 should be clarified. Figure 5.1 / 5.2 shows 1 x 1350 mm diameter inlet pipe at 0.8% located adjacent to MH22A. In contrast, Figure 5.6 shows two inlets with differing diameters, slopes and locations. Figure 5.6 also shows the majority of the inflows discharging to Pond 6.0 near the downstream end of the forebay and at an inflow angle which may increase potential for scour within the SWM facility.	There are two outlets into SWM pond 6.0. The angle of the outlet pipe will be confirmed during detailed design along with any required erosion protection. Figure 5.1 has been revised to correspond to the proposed Storm Drainage Plan (Figure 5.6)		Agreed - Please ensure that this task is included within Future Study Recommendations
	Hydrology and Hydraulics Models		15	HCA would appreciate receiving a copy of all modelling files, including output files, for review.	Figure 5.1 has been revised to correspond to the proposed Storm Drainage Plan (Figure 5.6)		Further discussion is required - HCA staff request an opportunity to review and comment on the modeling files, once provided.
	Future Study Recommendations		16	**HCA Assessments**. It is recommended in Section 6.4.1 and Section 7.0 that HCA assess whether there is a surface water connection between the identified wetland complex at Barton Street and Glover Road to determine if this feature is regulated. HCA notes this assessment (confirmation) would be based on ecological inventory/assessment work completed by the any future proponent of development at this location. It might be helpful to clarify this in the recommendations.	Clarification will be provided per HCA comments.		Further discussion is required - HCA staff request an opportunity to review and comment on the clarification.
			17	**Review and Consolidation of Recommendations** Both Sections 6.0 and 7.0 contain a number of recommendations for additional assessment and design work at the time of future development. Additional recommendations have been provided in the comments above. HCA suggests that in finalizing the report it may be helpful to review these sections to ensure all recommendations and future work requirements are adequately captured and summarized.	Additional recommendations will be incorporated into the Conclusions/Recommendations and Implementation sections.		Agreed
	6.5.4 Watermain	81	1	This report must demonstrate that this alteration to the drinking water system will comply with Form 1 requirements. Including and not limited to nowhere in the the pressure district shall the pressure drop below 20 psi under 2041 max day plus fire scenario.			
			2	City standard requires a second feed for areas with more than 100 units. secondary feeds are required where this is the case.			

Draft Report Exerpts with Watermain Comments	**7.0 Conclusions and Recommendations**	84	3	For DC Background purposes we need a cost estimate for these future items.		
	Appendix B Watermain Hydraulic Report	Fire Flow Demand Section	4	This approach limits level of service going forward. This report shall document the maximum fire flow available such that all developers are provided with the maximum Available Fire Flow.		
		Subdivision Computer Model Section	5	Model to be delivered to Hamilton Water.		
		Figure 1	6	why no connection to Hwy 8?		
		System Pressures and Available Fire Flow	7	Is NFPA accepted by CIty?		
		Transient Pressures	8	While final materials are not known, why not assume material for demonstration purposes.		
		System Flushing	9	Add reasonable locations of dummy hydrants for demonstration purposes.		
		System Resilience	10	Developers typically pay for Interim Water Quality flushing until such time that adequate chlorine residual is field measured while homes are constructed.		
	Sanitary Sewer Network Design	65 - First Paragraph	1	Need a table that shows current design population verses ultimate design population. Will there be more people than originally planned for. If yes the report should route the added flows to the ESI.	Original planned population figure will need to be provided by the City. The sanitary sewer design sheet provides the ultimate population for the Block 2 servicing study.	
	6.2 - Floodplain Delineation	72 - 5th paragraph	2	This report requires a checklist of items to be addressed in the future where they are not recommended as part of this report. This list shall include estimates for budget and capital where possible.	A list of recommendations has been provided and will be updated pending February 26 meeting.	
	6.5.4 - Watermain	81 - 1st paragraph	3	This report must demonstrate that this alteration to the drinking water system will conform to Form 1 requirements. Including and not limited to nowhere in the pressure district shall the pressure drop below 20 psi under 2041 max. day plus fire scenario.	A comment will be added to note that under maximum day plus required fire flows for ultimate build out conditions, the pressure area bounding the study area and within the study area are expected to maintain service pressures above 140 kPa at ground level. The requirements for Form 1 shall be confirmed and verified at the draft site plan stage.	
			4	City standards require a second feed for areas with more than 100 units. Secondary feeds are required where this is the case.	The cul de sacs on Local Roads 1, 11 and crescent on Local Road 16 are expected to be less than 100 units. A note to require looping of the watermains on cul de sacs and dead end streets has been added to Figure 5.11. In addition a note to the report will be added to review a watermain connection on Local Road 3 west of Local Road 16 across Watercourse 7.0 during detailed design.	
	7.0 - Conclusions and Recommendations	84 - First bullet point	5	For DC Background purposes we need a cost estimate for these future items.	Will need further discussion with the City.	

Comments from Udo Ehrenberg	**Appendix B Watermain Hydraulic Report**	Criteria - Fire Flow Demand: page 2 of 8, 2nd paragraph	6	This approach limits level of service going forward. This report shall document the maximum fire flow available such that all developers are provided with the maximum Available Fire Flow. 13.	A section will be added to the appendix that summarizes the anticipated available fire flow through an additional figure and explanatory text.		
		Criteria - Subdivision Computer Model: page 3 of 8, 1st paragraph	7	Model to be delivered to Hamilton Water.	Model has been provided to the City.		
		Figure 8	8	Comments for the cul de sac adjacent to Highway 8 – Why no connection to Hwy 8?	See response to comment 4 above.		
			9	Comment for the crescent adjacent to Highway 8 – Why no connection to Hwy 8?	See response to comment 4 above.		
		Analysis - Page 5 of 8 - System Pressures and Available Fire low, last paragraph	10	Is NFPA accepted by CIty?	The approach to analysing fire flows requires confirmation with the City. Fire flow requirements can not be calculated accordingly to FUS (1999) because architectural information is not available for the developments at this stage. The approach in the report demonstrates the anticipated available fire flow using a standard applied in North American setting, including other Ontario municipalities. The further analysis can be carried out when the development architectural information is known.		
		Analysis - Transient Pressures - page 6 of 8	11	While final materials are not known, why not assume material for demonstration purposes.	Transient pressures analyis is recommended during the preliminary or detailed design stage. A note has been included in the report.		
		Analysis - System flushing - page 6 of 8	12	add reasonable locations of dummy hydrants for demonstration purposes	The placement of hydrants is during the preliminary or detailed design stage. A note has been included in the report that the system needs to be evaluated for final flushing arrangement during detailed design when the hydrant placement is being finalized along with alternative connections and valve placement.		
		Analysis - System Resilience - page 6 of 8	13	developers typically pay for Interim Water Quality flushing until such time that adequate chlorine residual is field measured while homes are constructed.	A note can be added to the appendix that requires developers to maintain an adequate chlorine residual through water quality flushing or other means until adequate chlorine residual is established.		

From: Dave Maunder <maunder.d@aquaforbeech.com>
Sent: June-03-18 7:33 PM
To: zhao.c@aquaforbeech.com
Subject: FW: FOR YOUR COMMENT: Draft Meeting Minutes from May 24, 2018 - Block 2 SS meeting with Mrs. Cazzola and neighbours - Highway 8
Attachments: 2018-05-24 - DRAFT Minutes of Meeting with the Highway 8 Land Owners - east portion of Block 2 SS.doc

Importance: High

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: Thursday, May 31, 2018 1:41 PM
To: Dave Maunder (maunder.d@aquaforbeech.com) <maunder.d@aquaforbeech.com>; Ash Baron <baron.a@aquaforbeech.com>; [redacted]>
Subject: Fwd: FOR YOUR COMMENT: Draft Meeting Minutes from May 24, 2018 - Block 2 SS meeting with Mrs. Cazzola and neighbours - Highway 8
Importance: High

Hi,
Please see the draft minutes attached. Please note the action required as a result of discussion, due to lack of permission to enter on Mrs. CURCIC' property.
I think we thought we had permission but we actually don't. Should amend the accompanying map and reflect this in the findings, please.
Please also note the wetlands comments and action from Mike Stone.
[redacted], please advise Asap - we are in the final stretch of finalizing this report.

Thank you,
Marharet

Sent from my Bell Samsung device over Canada's largest network.

-------- Original message --------
From: "Fazio, Margaret" <Margaret.Fazio@hamilton.ca>
Date: 2018-05-31 1:16 PM (GMT-05:00)
To: [redacted] "Moniruzzaman, Monir" <Monir.Moniruzzaman@hamilton.ca>, "Kiddie, Melissa" <Melissa.Kiddie@hamilton.ca>, "Rybensky, Yvette" <Yvette.Rybensky@hamilton.ca>, "Yong-Lee, Sally" <Sally.Yong-Lee@hamilton.ca>
Subject: FOR YOUR COMMENT: Draft Meeting Minutes from May 24, 2018 - Block 2 SS meeting with Mrs. Cazzola and neighbours - Highway 8

Hi,

Please find the Draft Minutes attached. I **would appreciate your review and comments by June 7, 2018. Lack of comments will constitute consent.**

[redacted] please note I did not catch your student's name. Please include it with your comments.

P.S. I have called the Property Standards folks to provide a contact name, ...and...was on hold for 45 minutes, and had to hang up. Still searching for it...

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

Hamilton

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Planning and Economic Development Department
Growth Management Division
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MEETING MINUTES

FILE: Block 2 SS Final Draft Report Public Consultation

Meeting Purpose:
Block 2 Servicing Strategy Final Draft Report Comments and Questions from the below listed residents and land owners.

Meeting Date: May 24, 2018

Attendance:

[redacted]

Margaret Fazio - Senior Project Manager, Infrastructure Planning, Growth Management, COH
Melissa Kiddie - Natural Heritage Planner, Development Planning, Planning, COH
Monir Moniruzzaman– Senior Project Manager, Infrastructure Planning, Growth Management, COH
Yvette Rybensky – Senior Project Manager, Suburban Team, Development Planning, COH
Mike Stone – Manager of Watershed Planning Services, Hamilton Conservation Authority
Sally Yong-Lee – Manager, Infrastructure Planning, Growth Management, COH

Item No.	Discussion	Action by
1.	Introductions.	
2.	**Background of why we have the Block 2 Servicing Strategy Final Draft Report** was discussed: • The Stoney Creek Urban Boundary Expansion (SCUBE) was approved by City of Stoney Creek Council prior to amalgamation, • SCUBE Transportation Master Plan and SCUBE Subwatershed Studies (East and West) would have been completed and incorporated into the Fruitland-Winona Secondary Plan (FWSP). The FWSP was Council Approved on May 14, 2014. Having said this, it was noted that some items are still under appeal, therefore rendering the entire Plan, not yet enacted. The opportunity to submit new appeals for FWSP is no longer available. Since the document is Council approved, the Block 2 SS and other Block SSs are required to follow the FWSP. • The present land owners stated that they did not know what was taking place around them when opportunities to comment or appeal were previously available. • Staff expressed that this, although regrettable and understandable when folks lead busy lives, is not something that currently can be reversed, or amended within BSSs, i.e. land use designations, location of neighbourhood parks, natural heritage (green spaces) and determination of the significance	**M. Fazio**

	of what species of plants and animals they hold. • The present land owners now have concerns because they are concerned that our plans affect their properties and property values and wanted to ask questions/follow up on their submitted comments to better understand how exactly their properties will be affected, what are their options, etc. • Staff explained that we are now at the Block 2 Servicing Study process stage, where we are trying to make sure that developments within the BSS areas are carried out in an orderly manner. The scope of the BSS includes the incorporation of land use designations, update of natural heritage inventories (in field, via air photos, etc.), topography, and for creeks – review of the meander belt, flood plain and erosion boundaries, as well as tentative location of land roads, and servicing for drinking water, stormwater (conveyance via sewers or ditches and Ponds), as well as sanitary sewers.	
3.	[redacted] **Permission to Enter:** There were questions regarding the determination of what "Natural Heritage" determination requires, and how Mrs. [redacted] property was assessed since she did not give permission to enter onto her property. <u>Staff responded that this will be amended on the study map.</u> Staff responded that for properties where permission was not granted, access to adjacent properties/roads would have helped identify presence or absence of potential natural heritage – species of plants and animals which would have been of interest and significance, such that further Environmental Impact Statement (EIS) and field assessment would be recommended at this location. [redacted]**feels that most of the woodlot on her property consists of Ash trees.** Staff advised, that City of Hamilton or Conservation Authority staff do not work on private properties. For tree removals on private property one must follow the Hamilton Property Standards for rules, and it would be worthwhile to contact that office to find out what those rules are. The general Property Standards Telephone Number is: [redacted] The person to speak to is:….. **Wetland** [redacted] stated that this designated wetland was created when about 10 of the upstream neighbours, as well as the northerly neighbour – Jehova's Witness Hall, started to empty their pools/drain into the creek/her property. Mrs. [redacted] has complained about this practice to her neighbours as well as to City by-law enforcement staff to no avail. The last two complaints on this took place in May and Fall 2017. By – law staff did not recommend/take any action that was	**M. Fazio – to inform Aquafor Beech to amend permission to enter map.** **Mrs. Curcic**

	satisfactory and the activities that [redacted] described are continuing. Staff felt that since nothing was done/no charges were laid, and activities did not cease it is possible that the by-law staff felt that this matter was deemed a "neighborly dispute", i.e. best to be handled by the court system, not City By-law process. This portion of her property used to be a nice garden until it became flooded due to the above activities. [redacted] offered that he will review the wetland determination from the B2SS Final Draft Report on Mrs. Curcic' property and through M. Fazio will let Mrs. [redacted] know of the status of both the wetland.	**M. Stone**
4.	**Hamilton Conservation Authority (HCA) Jurisdiction:** The present land owners questioned why the HCA can determine what can and cannot be done on their own properties. [redacted] answered that the HCA does not own or work within private properties. It has a legal jurisdiction to regulate flood zones/areas, and wetland designations. It is the approving authority for permits of any works that are conducted within those areas and water bodies.	
5.	**The History of Watercourse 7.0/Ditch traversing the properties of the present land owners:** [redacted] expressed that she and her family (and that of their neighbours) owned their properties, in some cases, through generations. They don't know how a "ditch" in question appeared. Nobody asked them if they wanted it, and it's limited the use of their property, and taxation issues have ensued as a result. Staff stated that regardless of how the channel appeared, it currently conveys water, offers drainage and support fisheries downstream, and this has to be accounted for in any development in this area. Staff stated that if there is an opportunity to enhance the creek function in consideration with development on adjacent lands, City and HCA are open for discussion. If in the future an interested developer expresses concern over the presence of the above Watercourse to the land owners, staff have offered to speak to that developer to explain the intended flexibility of approach, as expressed in the Block 2SS Report.	
	Neighbourhood Park: [redacted] stated that she was told by a neighbour's consultant that the Neighbourhood Park which is planned to be on the northern portion of her property was originally in a different position in the FWSP. She would like to have it moved	

	back to that, and off of her property. Also, how was it determined that a park was located in part on her property. Staff explained that: 1. The FWSP determined the need to have a neighbourhood park in the location is determined by the densities and lay out of lands in question, to ensure that adequate park space is provided for future residents. 2. During the FWSP process there were three options that the members of public, agencies and staff had a chance to comment on, and work with. It is possible that the park locations were different, but the overall strategy of each option was different and the one chosen has the park at its current location. Moving the part is no longer an option, since this change/park location would have been appealable during the FWSP process. (NOTE: not discussed in the meeting, but worthy of note) : If the park was contained entirely on one owner's property then at the time of submission of a subdivision development application process, staff could assess if moving it would still fulfill its total function – and the same one land owner would be the one affected by it. 3. Property value is not diminished from residential, when a neighbourhood park is designated on it. It is evaluated at the time of the development application process, and fair market value is offered.	
6.	**Next Steps:** **a. Minutes from this meeting will be produced and circulated to all present by M. Fazio.** **b. The B2SS Final Report is anticipated to be presented to Planning Committee of Council with an Information Report, on September 4, 2018.** The Report will also at that time be made available for viewing on the project web page at: **https://www.hamilton.ca/city-planning/master-plans-class-eas/block-servicing-strategies-stoney-creek-and-gordon-dean-class** [redacted]**asked for notification from M. Fazio is the above date is changed.**	**M. Fazio**

Yours truly, OR Yours sincerely,
Margaret Fazio, Senior Project Manager
mf

From: Dave Maunder [redacted]
Sent: June-03-18 7:34 PM
To: [redacted]
Subject: FW: REQUEST FOR COMMENTS: DRAFT May 16, 2018 Meeting Minutes RE [redacted] Comments and Questions on Block 2 SS Final Draft Report
Attachments: 2018-05-16 - DRAFT Minutes of Meeting with the [redacted] - for comment.doc

Importance: High

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: Tuesday, May 29, 2018 12:02 PM
To: Dave Maunder [redacted]
Subject: FW: REQUEST FOR COMMENTS: DRAFT May 16, 2018 Meeting Minutes RE [redacted] Comments and Questions on Block 2 SS Final Draft Report
Importance: High

Hi Dave,

FYI attached DRAFT Minutes from the Meeting with [redacted] Family.
Thanks,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: Fazio, Margaret
Sent: May-29-18 11:58 AM
To: Mahood, Alissa; Kiddie, Melissa; Moniruzzaman, Monir; Yong-Lee, Sally; Rybensky, Yvette; [redacted]
Subject: REQUEST FOR COMMENTS: DRAFT May 16, 2018 Meeting Minutes RE Simone Family Comments and Questions on Block 2 SS Final Draft Report
Importance: High

Hello,

Please find the Draft Meeting Minutes attached.

[redacted] – apologies that I didn't catch the name of the Engineer on your team. I am hoping you can provide it with your comments, and distribute to everyone that needs to see the minutes to comment on your end, please?

Please provide comments by June 5, 2018, if possible. If an alternative timeline is more realistic please let me know.

Lack of comments will constitute agreement.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
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Planning and Economic Development Department
Growth Management Division
Physical Address: 71 Main Street West, 6th Floor
Phone: 905-546-2424 Ext. 2218 Fax: 905-540-5611

MEETING MINUTES

FILE: Block 2 SS Final Draft Report Public Consultation

Meeting Purpose:
[redacted] **Block 2 Servicing Strategy Final Draft Report Comments and Questions.**

Meeting Date: May 16, 2018

Attendance:
[redacted]
Margaret Fazio - Senior Project Manager, Infrastructure Planning, Growth Management, COH
Melissa Kiddie - Natural Heritage Planner, Development Planning, Planning, COH
Monir Moniruzzaman– Senior Project Manager, Infrastructure Planning, Growth Management, COH
Yvette Rybensky – Senior Project Manager, Suburban Team, Development Planning, COH
Mike Stone – Manager of Watershed Planning Services, Hamilton Conservation Authority
Sally Yong-Lee – Manager, Infrastructure Planning, Growth Management, COH

Item No.	Discussion	Action by
1.	Introductions.	
2.	**Status of the Block 2 Servicing Strategy Final Draft Report** – is still not finalized. City of Hamilton Staff themselves still have comments and concerns with how various items are treated/communicated and portrayed in this Report. [redacted] Family members had the same concern regarding the status Watercourse 6.1 and how it's shown in the Report maps. There is wording in the Report which speaks to the fact that Watercourse 6.1 can be developed overall, but this is not reflected in the Report itself. [redacted] indicated that he is in agreement with the amendment of the mapping to reflect the latest approved status and amend the mapping legends accordingly i.e. **Watercourse 6.1 is not a regulated watercourse.** COH staff confirmed that this is a change they intend to ask their consultant to make to the report.	**M. Fazio**
3.	**Bobolink** – There were questions regarding the required Environmental Impact Statement (EIS) required of lands which were not previously included in the Natural Heritage surveys, e.g. some include neighbours of the Simone	

	Family property at 844 Barton Street East. Those lands are indicated as needing an EIS, due to lack of permission to enter to the Block 2 SS consultant team at the time of the B2SS field work timeframe. Some species were indicated/heard/seen from the lands bordering their properties but were not able to be confirmed at that time. This is why now a separate EIS, that would show/ confirm presence or absence of a particular species at those locations, identified as part of the Block 2 SS, will need to be carried out at the development application stage. Habitat mapping which also is shown on bordering properties is not what an EIS is for. The EIS would need to confirm the presence/absence of a particular species on the neighbouring lands – where the species was heard/seen, etc., not the Simone Family lands.	
4.	**Fisheries** – Questions were asked about what is required if a watercourse is deemed to support fisheries, as part of/in preparation for the submission of development application(s). There is a self-assessment tool available from the Ministry of Fisheries and Oceans, which would help a qualified professional to determine if a permit application is required prior to the development of a particular property. For both overall EIS and this permitting process, a consultant can advise and walk through the process with the land owner. It may be worth considering to pool resources together with appropriate neighbours to help pay for the required permitting/EIS requirements, as applicable.	[redacted]
5.	**Grading** – The City Engineers check proposed development applications' drawings, to ensure that the proposed developments don't drain onto adjacent properties, i.e. that their grading does not impact the neighbours in a negative way.	
6.	**The Development Application process** - is a public process that starts when the applicants are ready to develop their lands. It starts with a pre-consultation meeting where the applicants need to already have a realistic concept plan put together and have hopefully hired a Planning consultant and Engineering team to help them navigate what is a fairly complex process. Once the subdivision applications and supporting studies are ready, they are submitted for approval to the City and all Departments and applicable agencies are circulated to ensure that the proposals are acceptable to everyone. Final approval on any Plan of Subdivision, and any associated Official Plan and Zoning By-law amendment applications, is granted by Hamilton Council (with opportunity to comment by members of the public, adjacent land owners, other developers). Site Plan applications are NOT a public process and are between the land owner and the City and involve a detailed review of all multiple residential, commercial and/or industrial developments. This process must be completed after the Plan of Subdivision is approved and before any building permits are issued.	
7.	**Changes to zoning** - **during the development application process** Any changes to zoning require that neighbouring properties get notified and that a	

	notice be posted on the subject property for public to see/comment. Yvette Rybensky (present at this meeting) oversees the suburban application approval process. She/her staff circulate appropriate staff, and there is a public meeting required. The final decision of permission to develop or deny is carried out at Council and can be attended by the public and commented on by the interested members of the public.	
8.	**Examples of scenarios of development applications**, for adjacent properties for the Simone Family lands include a subdivision with a temporary Stormwater (SMW) Pond on the neighbour's land. The Block SS designated a final SMW Pond location to service the entire drainage area (there are two planned for this Block). If a proposed temporary SMW Pond can service only a portion of the entire drainage area it can do so, if the permanent pond will be put in place later. If however, the temporary pond itself is it to be ultimately permanent; it has to be designed to provide drainage for the entire original drainage area.	
9.	**DRAFT PLAN Timelines** – to be considered when conducting an EIS for study area. An EIS field data becomes out of date in 5 years, due to the fact that plants grow/disappear, animals move and the Species at Risk Act Provincial bodies track when new species are threatened and add them on a list each year. The EIS process may take about 1 year due to multiple seasons required for proper species identification. Staff would recommend that this is to be considered when the [redacted] Family is ready to submit a planning application. The time from EIS completion to construction may take about 3 years, and the application should have current field data within it, in order to be approved and shortly thereafter constructed.	[redacted]
9.	The attendees agreed that it would be useful if the **B2SS Final Report had a Summary of Recommendations at the end of it**, as an easy overall reference of all recommendations discussed in various preceding portions or the Final Draft Report.	**M. Fazio**

Yours truly, OR Yours sincerely,
Margaret Fazio, Senior Project Manager
mf

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: June-02-17 4:12 PM
To: [redacted]
Cc: Yong-Lee, Sally; Moniruzzaman, Monir; Mahood, Alissa; Kiddie, Melissa; Skrypniak, [redacted] Dave Maunder [redacted]
Subject: June 8 2017 PIC (no 1 for Block 3 Servicing Strategy) - City of Hamilton Comments
Attachments: 2017-06-02 - City of Hamilton Comments on Storm Servicing PIC 1 Draft Panels.pdf; 2017-06-02 - City of Hamilton comments on Land Use and Sanitary Panels.pdf

Importance: High

[redacted]

Thank you for sending your panels in advance of the coming PIC.
Please find the scanned copies of location of comments attached. (My apologies for my handwriting in advance☺)

Our collective comments are as follows:

MISSING PANEL:

1. For Block 2 we have a panel of existing natural heritage features, i.e. watercourses. Please add such a panel to the PIC set.

STORM Servicing Panel:

1. Please remove the stormwater ponds – please remove & note that in industrial lands SMW Facilities should be incorporated as per DC by-law 2014.
2. Please resolve the piping/channel issue at Lewis Road – as per ongoing discussions with Mus.
3. WC 9.0 channel width – as per ongoing discussions with us – model comparison.
4. There is a portion of road network – western portion - missing stormwater sewers?
5. Please show drainage outlets for Neighbourhood Park in south-west corner.
6. Please show what will happen when Lewis Road is ultimately urbanized – south of Barton and north of shown storm network.
7. What is the justification for the location of the SMW Facility east of Lewis Road – isn't locating it at the corner of Lewis and Barton more appropriate – since it's the lowest point - topography?
    a. Won't it be able to service the lands along Barton better – for future development?
    b. Alternative design is to accommodate BARTON single lot homes along Barton, if they're not already accommodated by the proposed SMW Facility.
8. Missing pieces in the stormwater servicing are a concern – HOLDOUT Properties should be included in the calculations and their drainage shown – as part of a holistic approach of the Block 3 Servicing Study.

SANITARY Servicing Panel:

1. Please remove the SMW Facility shown in Venetian Meats lands – as per comment above.

LAND USE Panels:

1. All circled areas (including the lay out of the proposed collector road) are of concern to staff, in that they constitute MAJOR changes which would require a Secondary Plan Amendment. We do not agree with the major changes proposed, and ask for them to be changed so that they adhere to the Secondary Plan. (We have done the same for Block 2 Servicing Strategy and similarly advised Block 3, which has followed our comment/direction in this).

2. There is one area which we could consider as MINOR – Local Commercial area showing a local road going through its northern portion.

PARTICIPATING LAND OWNER GROUP Panel:

1. Since the panels will be shown on the City website as well as the PIC, and the City promises to protect the privacy of the members of the public who participate in studies, we would like to ask that the Owners' names be removed from the panel. All other columns would be OK, as long as they cannot be associated with a person's name. Our comment sheets indicate this, as do all notices. Therefore any materials presented at joint meetings/placed on our web site need to respect this approach.

Thank you for the opportunity to comment and please let us know if you have any questions.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

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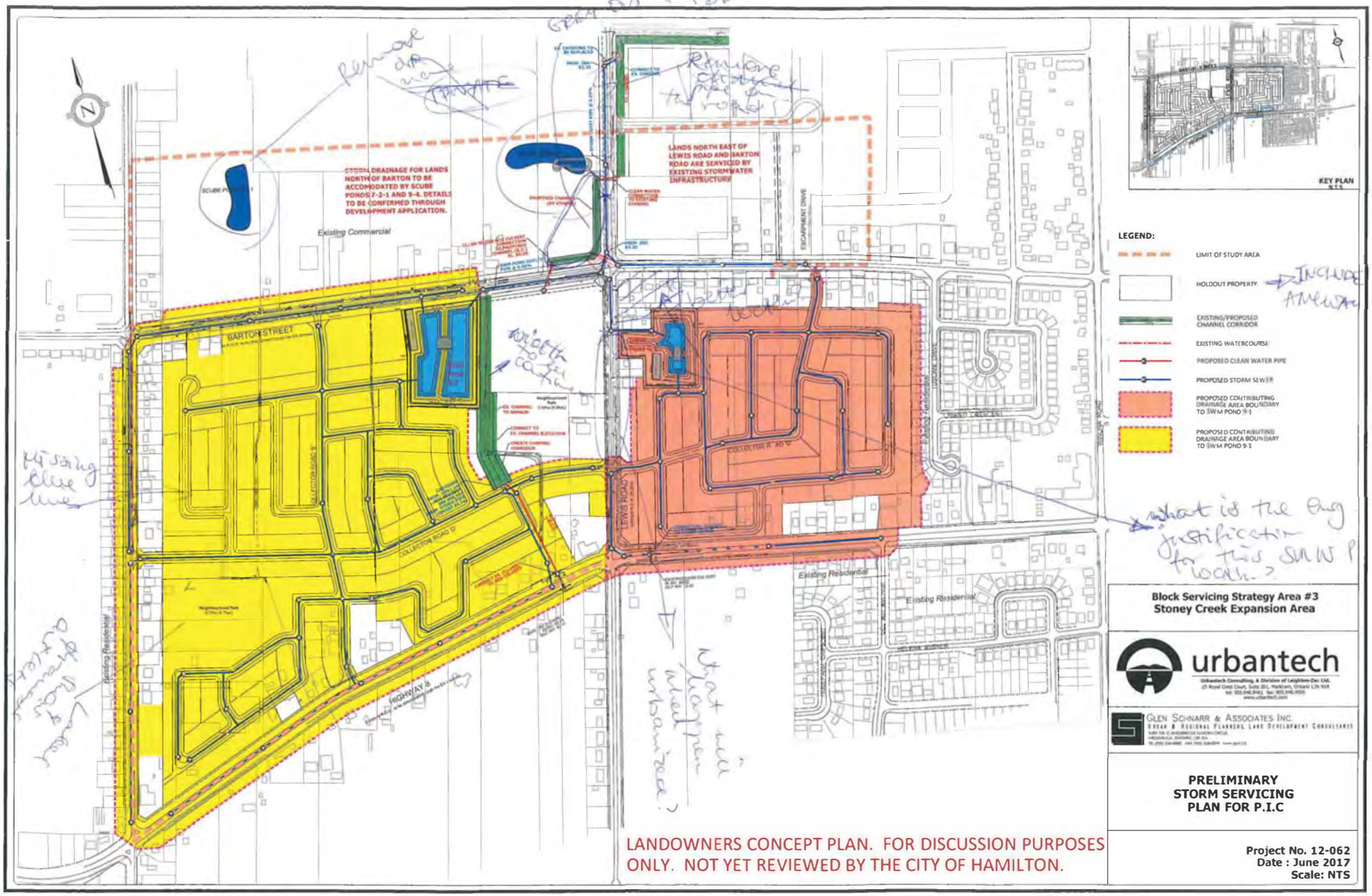
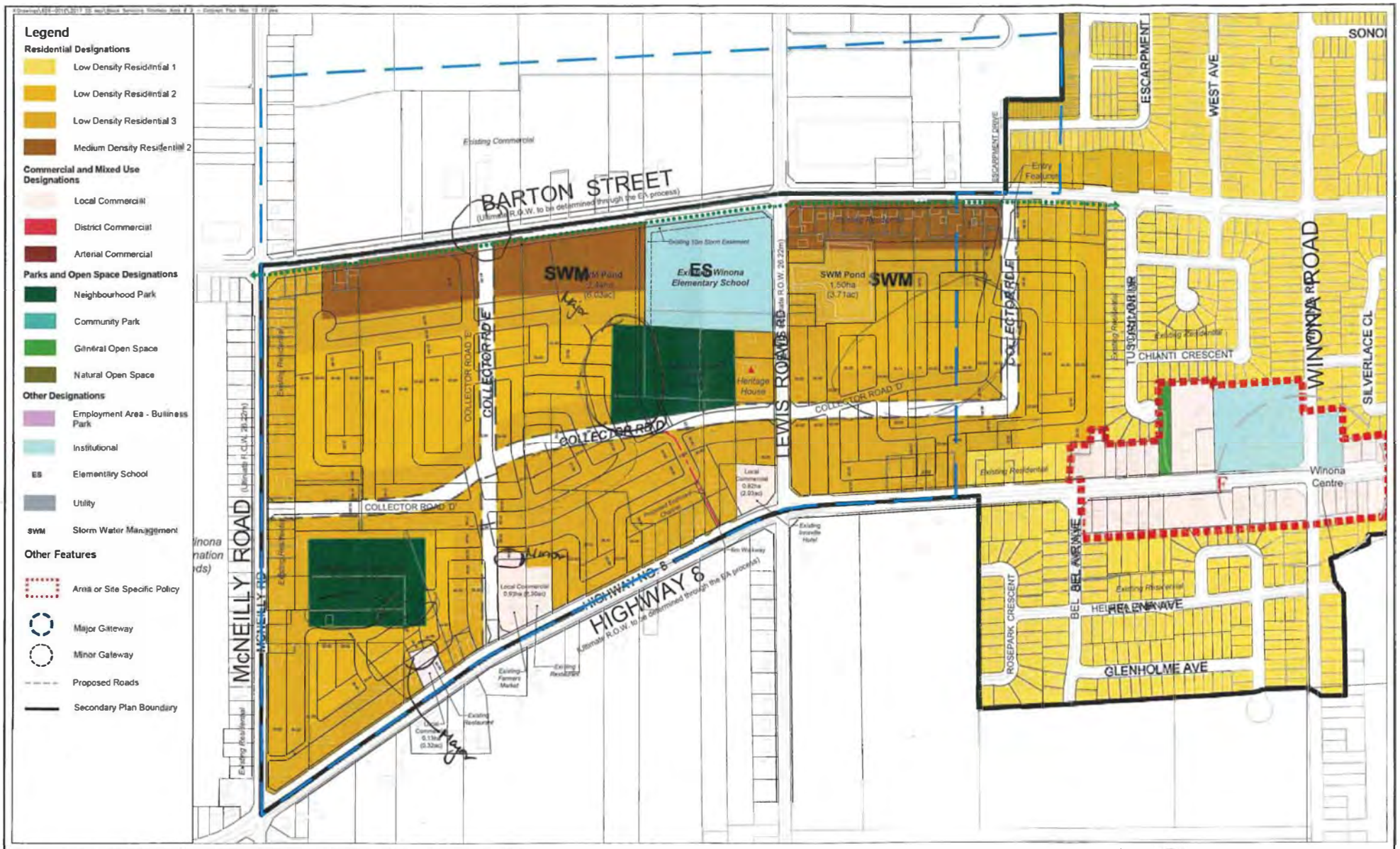

STORM DRAINAGE FOR LANDS NORTH OF BARTON TO BE ACCOMODATED BY SCUBE PONDS 7-2-1 AND 9-4. DETAILS TO BE CONFIRMED THROUGH DEVELOPMENT APPLICATION.
LANDS NORTH EAST OF LEWIS ROAD AND BARTON ROAD ARE SERVICED BY EXISTING STORMWATER INFRASTRUCTURE
Existing Commercial
BARTON STREET
COLLECTOR ROAD 'D'
LEWIS ROAD
HIGHWAY 8
ESCARPMENT DRIVE
Existing Residential
Existing Residential
KEY PLAN
N.T.S.
LEGEND:
LIMIT OF STUDY AREA
HOLDOUT PROPERTY
EXISTING/PROPOSED CHANNEL CORRIDOR
EXISTING WATERCOURSE
PROPOSED CLEAN WATER PIPE
PROPOSED STORM SEWER
PROPOSED CONTRIBUTING DRAINAGE AREA BOUNDARY TO SWM POND 9-1
PROPOSED CONTRIBUTING DRAINAGE AREA BOUNDARY TO SWM POND 9-1
Block Servicing Strategy Area #3
Stoney Creek Expansion Area
urbantech
GLEN SCHNARR & ASSOCIATES INC.
PRELIMINARY
STORM SERVICING
PLAN FOR P.I.C
Project No. 12-062
Date : June 2017
Scale: NTS
LANDOWNERS CONCEPT PLAN. FOR DISCUSSION PURPOSES ONLY. NOT YET REVIEWED BY THE CITY OF HAMILTON.



BLOCK SERVICING STRATEGY AREA # 3 - OVERLAY

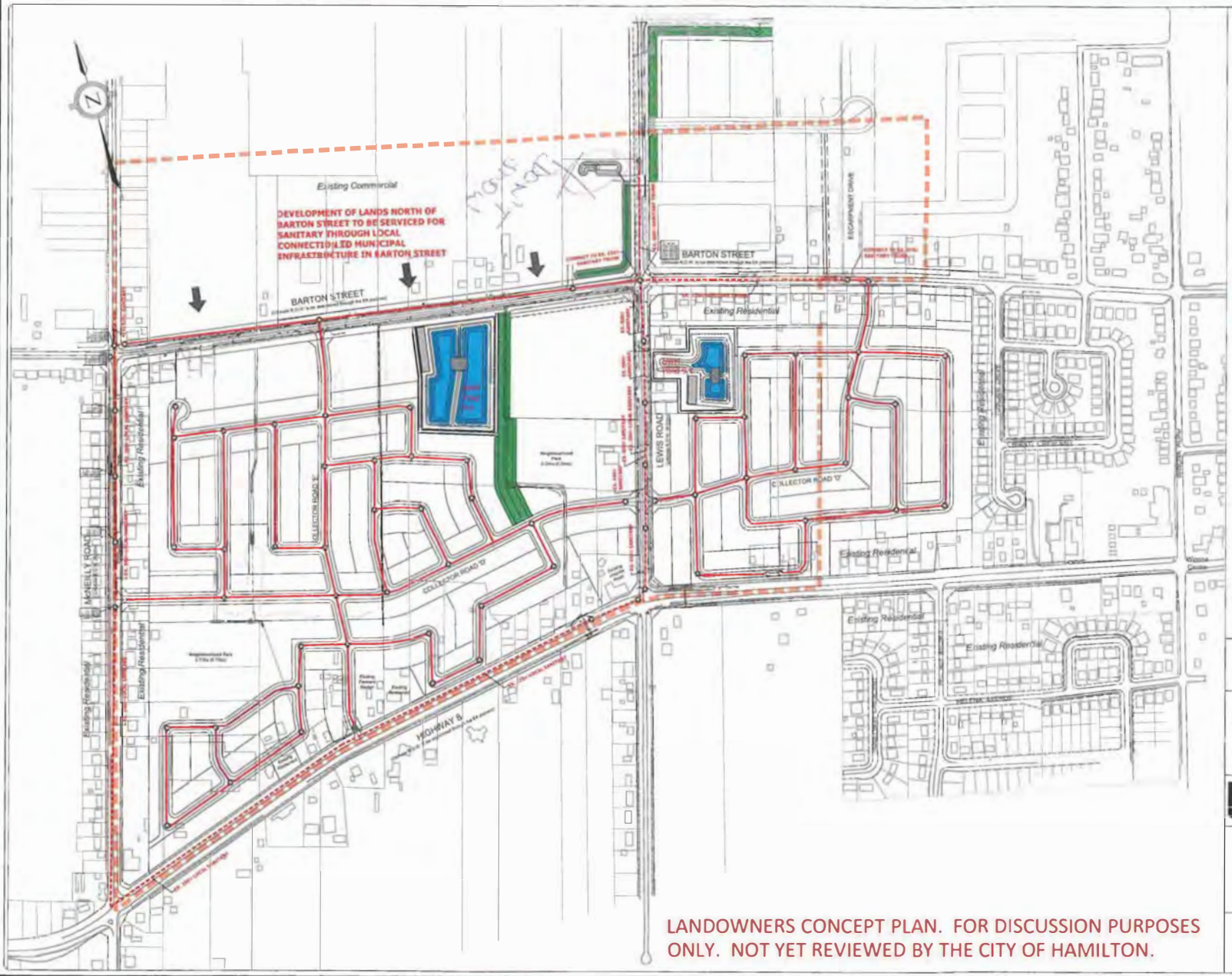
URBAN HAMILTON OFFICIAL PLAN FRUITLAND-WINONA SECONDARY PLAN - LAND USE PLAN MAP B.7.4-1

STONEY CREEK, CITY OF HAMILTON

Scale 1:2500
(24 x 36)
May 15, 2017

WORKING COPY

GLEN SCHIARR & ASSOCIATES INC.



LEGEND:

- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- LIMIT OF STUDY AREA
- DIRECTION OF SANITARY DRAINAGE

Block Servicing Strategy Area #3
Stoney Creek Expansion Area

urbantech

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PRELIMINARY
SANITARY SERVICING PLAN FOR P.I.C

Project No. 12-062
Date : June 2017
Scale: NTS

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: January-11-18 9:42 AM
To: Dave Maunder
Subject: RE: Block 2 - WC 6.0 modelling inquiry

Thanks Dave.

I will check for HCA response to Block 2.
Yes, we used SCUBE West. This may require more input from Block 1 and HCA – I will confirm.
I'll look for your e-mail next week.

Thanks,
Margaret

From: Dave Maunder [redacted]
Sent: January-11-18 9:12 AM
To: Fazio, Margaret
Subject: RE: Block 2 - WC 6.0 modelling inquiry

Happy New year to you as well. I just got back and will discuss timing with staff this week. I will provide timing early next week.
With respect to the modeling I will review the comments from HCA to see how they responded to our report. my recollection is that we used the SCUBE West model and discussed specifics with HCA during the preparation of the BLOCK 2 report. thus I am not sure that we need to be involved in the modelling discussions. If you would like to discuss this further please call my cell (647 227 2367).
Thanks

From: Fazio, Margaret [mailto:Margaret.Fazio@hamilton.ca]
Sent: Wednesday, January 10, 2018 2:22 PM
To: Dave Maunder [redacted]
Subject: Block 2 - WC 6.0 modelling inquiry

Hi Dave,

Happy New Year! I hope your Christmas/holidays were awesome. Did you get to ski a bit? I haven't, yet…itching to go!

I spoke with [redacted] this morning. He was hoping to have a coordinating meeting between Blocks 1 & 2 to finalize/resolve discrepancies between WC 6.0 models – in the next two weeks or so. How are you doing with the model on your end - timing & who should be invited to this meeting?

Also, I wanted to ouch base about overall timing of responses/changes to the Block 2 Report, etc. You are aware, of course, that many land owners are curious about what we're proposing, etc.

Internally we agreed that once the Report is to our collective liking, we would like to release it to the public/land owners for comment – they would have not seen any of the technical information/background prior to this time, and we felt that since the Servicing Strategies are being done to facilitate development, we should let them have a look/comment prior to finalization/Council meeting.

Please let me know if you have any concerns in this regard, comments, etc.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: Fazio, Margaret [mailto:Margaret.Fazio@hamilton.ca]
Sent: Monday, December 4, 2017 9:29 AM
To: Dave Maunder [redacted]
Subject: Re: Block 2 Draft Report - City of Hamilton and HCA Comments - Additional Comments

HI Dave,
I am off the week of 18th entirely, so week of 11th would be beat for meeting this year. In the new year I'm back Jan 8th.- off for 3 weeks total.
Please let me know.
Thanks,
Margaret
Sent from my Bell Samsung device over Canada's largest network.

-------- Original message --------
From: Dave Maunder [redacted]
Date: 2017-12-04 9:13 AM (GMT-05:00)
To: "Fazio, Margaret" [redacted]
Cc: [redacted], 'Ash Baron' [redacted] Chris Denich' [redacted]
Subject: RE: Block 2 [redacted]

Margaret, I have downloaded the comments which were recently forwarded. Given the recent date of receipt the timeframe for a meeting this week is not practical. I will review the comments with staff and establish availability for the weeks of December 11th and 18th , thanks .

From: Fazio, Margaret [mailto:Margaret.Fazio@hamilton.ca]
Sent: Friday, December 1, 2017 3:13 PM
To: Dave Maunder ([redacted]
Cc: [redacted] <[redacted]>; Mahood, Alissa <Alissa.Mahood@hamilton.ca>; Kiddie, Melissa <Melissa.Kiddie@hamilton.ca>; [redacted]; Moniruzzaman, Monir <Monir.Moniruzzaman@hamilton.ca>; Yong-Lee, Sally <Sally.Yong-Lee@hamilton.ca>; Skrypniak, Lorissa <Lorissa.Skrypniak@hamilton.ca>; Bender, Daryl <Daryl.Bender@hamilton.ca>; [redacted]; Cooper, Stephen <Stephen.Cooper@hamilton.ca>; [redacted] Ehrenberg, Udo <Udo.Ehrenberg@hamilton.ca>
Subject: RE: Block 2 Draft Report - City of Hamilton and HCA Comments - Additional Comments

Hello Dave et al,

I have now forwarded comments from Hamilton Water – Udo Ehrenberg, separately. Please confirm receipt.

Also, upon further review of TOR and Block 1 report I wanted to add that

1. The description of the process from the public consultation standpoint is entirely missing.

2. We need to acknowledge that public consultation was designed as per MCEA requirements, state dates, times and locations, and notification dates and locations/media, and how many folks came out when and summarize comments and discussions on the plan within PIC and outside of them, as cc'd throughout the process, to prove that although we weren't legislatively required to do so, we chose to follow a proven process.

3. Transportation – SCUBE TMP – should be recognized as an initiator of a west-east collector road, and how the pedestrian trail is now replaced by a local road to provide multi-modal connectivity/EMS access, to and between Block 1 & 2.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

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From: Fazio, Margaret
Sent: November-30-17 4:57 PM
To: Dave Maunder [redacted]
Cc: 'Onishi, Doug'; Mahood, Alissa; Kiddie, Melissa; Stone, Mike (Mike.Stone@conservationhamilton.ca); Moniruzzaman, Monir; Yong-Lee, Sally; [redacted]
Subject: BLock 2 Draft Report - City of Hamilton and HCA Comments
Importance: High

Hi Dave et al,

We have comments focused on various areas of interest, as follows:

1. HCA comments – Attachment No. 1
2. Natural Heritage: Attachment No. 2
3. Engineering/Servicing: Attachment No. 3

Please note that some wording on various comments may be contradictory at this time. We are hoping that we can iron that out at our meeting next week.

Additional detailed comments are as follows:

1. AODA Guidelines for City of Hamilton dictate that a FONT of Verdana or Arial size 12 (with capability for 17) need to be used for all reports. Please amend yours to match this requirement in the next version of the report.
2. Please add the names of the **City Study Team** after the list of Appendices – cc'd staff should be included.
3. Pg. 6,

    a. top paragraph: Watercourse 6.0 and 7.0 mention – representation in the report needs to be discussed.
    b. Block 2 SS to include: #1 - The location of the neighbourhood park – it has already been determined, by the FWSP, not this study. – Please explain.
    c. Paragraph - 3rd FROM BOTTOM: Fruitland-Winona Transportation Classification Plan – is this the correct name? Suggest changing to "Neighbourhood Transportation Plan".
    d. Paragraph – 2nd FROM BOTTOM: SMW facilities…suggest rewording to: "…facilities locations were not finalized as part of the FWSP process". Later in the same paragraph suggest rewording to "...facilities locations will be finalized through the Block Servicing Strategy".
    e. Is "Fruitland-Winona Secondary Plan" identified as "Secondary Plan"? Please ensure that this has been documented prior to using the shorter term.
4. Pg. 7 – OMB date – please state "on December 4, 2015".
5. **Stormwater Management, pg. 9**
    a. Please define water quality "Level 1" and "Level 2" or reference original source
    b. Water balance requirements vary based on soil type. Could you provide more details?
6. **Natural Heritage System pg. 9 & 14:**
    a. Please see attached separate comments from Melissa Kiddie and Servicing staff.
    b. W.C. 6.1 – We need to resolve the wording at our meeting.
    c. W.C. 6.1 – Bottom of page 14 – status of this additional portion of the watercourse is not currently known…please see comment b.
    d. Similarly W.C. 6. 1 0 Table 3.1 – Permanent and Intermittent Watercourses – subject to further discussion.
    e. Etc.
7. **Section 4.0 – Development of Concept Plan**, pg. 22, please add bullet points in the second set, as follows:
    a. Local roads
    b. W & WW servicing needs
    c. Grading
8. **Figure 4.4** –
    a. Study area map does not, nor did we find in writing an acknowledgement that the Barton and Fifty Road Improvements Phases 3 & 4 EA and Highway 7 Phases 3 & 4 MCEA are ongoing, and that the FWSP has identified a need to widen their ROW widths, with Barton at 40m ROW, offset by 4 m to the south, and Highway 8 urbanization to the north side only.
    b. Please remove the MUP entirely from the map, since the local road is being put in its place.
9. **Table 5.1** on pg. 31
    a. Please provide the long form of "**WNV**".
10. **Figure 5.1** – Is a trail connection possible along the Pond 6.0, that would link to Barton Street etc.? Please increase the font size of labels on the drawing – it's too small to read.
11. **Figure 5.13** – drawing is out of focus – not legible. Please amend.
12. During Barton and Fifty Road EA – culvert sizing will be taken entirely from Block Servicing, so they need to be confirmed now, as per attached comments.
13. **Pg. 69** – Third bullet - please provide the full version of "WS".
14. **Pg. 71** – Please see comments # 13.
15. **Pg. 72** – Second paragraph – HCA Flood Plain Mapping used (last updated?) – we should offer wording that reflects that there is a potential to change, since HCA is currently in review and although they don't anticipate big changes some will have to be accommodated after Block Servicing is completed. Not sure if this would happen on an application basis or if we would need to amend Block Servicing?...Question for Discussion at the meeting.

16. **WC 7.0** restoration is currently under way via Public Works Department, north of Barton Street. City will provide updated wording.
17. 6.4.1 on pg. 76 – 3 & 4 – subject to discussion at our meeting.
18. Page 80 – Concept Plan – **Bike Lanes** – Please see the intended grid pattern density for Bike Lanes in the Cycling Master Plan and Engineering Guidelines, which dictate that all Collector Roads must provide an on-road bike lanes. They should now be included in our Functional Design.
19. Recommendations pg. 84 - #3 – subject to discussions at our meeting.
20. Comprehensive Development Guidelines – pg. 187 – please increase font/page size – the used font is illegible in this format and does not meet AODA requirements.
21. **Field Data notes** – should these be made public?

Please let us know if you have any questions. Otherwise we'll discuss at the meeting next week. Please send any agenda items you wish to discuss.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

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From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: May-17-18 11:15 AM
To: Dave Maunder; 'Ash Baron'
Cc: Yong-Lee, Sally; Roth, Jennifer; Rybensky, Yvette; Kiddie, Melissa; Mahood, Alissa [redacted] Moniruzzaman, Monir; [redacted]
Subject: RE: Block 2 Servicing Study FINAL Draft - Amalgamated HCA and COH comments

Thanks Dave. Please let us know if you encounter any questions in the mean time.

Margaret

From: Dave Maunder [redacted]
Sent: May-17-18 11:09 AM
To: Fazio, Margaret; 'Ash Baron'
Cc: Yong-Lee, Sally; Roth, Jennifer; Rybensky, Yvette; Kiddie, Melissa; Mahood, Alissa; [redacted]
Subject: RE: Block 2 Servicing Study FINAL Draft - Amalgamated HCA and COH comments

Margaret,
Based on initial conversations with staff we will aim for responding to outstanding comments and updating the report by June 4th. this is an efficient way for us to cross reference the material that has been provided.
thanks

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: Wednesday, May 16, 2018 2:39 PM
To: Dave Maunder [redacted] 'Ash Baron' <baron.a@aquaforbeech.com>
Cc: Yong-Lee, Sally <Sally.Yong-Lee@hamilton.ca>; Roth, Jennifer <Jennifer.Roth@hamilton.ca>; Rybensky, Yvette <Yvette.Rybensky@hamilton.ca>; Kiddie, Melissa <Melissa.Kiddie@hamilton.ca>; Mahood, Alissa <Alissa.Mahood@hamilton.ca>; Philip, Mohan <Mohan.Philip@hamilton.ca>; Moniruzzaman, Monir <Monir.Moniruzzaman@hamilton.ca>; [redacted]
Subject: Block 2 Servicing Study FINAL Draft - Amalgamated HCA and COH comments

Hi Dave and Ash,

1. Please find the amalgamated HCA and City staff comments attached.

2. Please note comments on the Phasing Plan are outstanding since we need a map that accompanies it in order to comment. **Please forward ASAP.**

3. Additionally, please provide comments to those provided earlier – April 30, 2018, from
   a. Losani – 884 and 860 Barton Street – via MHBC Planning, Urban Design & Landscape Architecture.
   b. Rudolph Law Office

   Please provide your comments to both by the end of this week – **Friday, May 18, if possible**. If not, please advise on your timeline.

4. Please let us know if you have any questions/wish to meet, etc. We have tentatively set up a meeting time with City and HCA staff for **May 24, 1-2 p.m.,** in case we need to discuss anything prior to finalization of the report.

5. FYI – the Draft of the Report to Council will be initiated on **Monday, May 21, 2018**.

6. Given the current status, we will expect the Final Report (incorporating all of our previously provided and current comments) to be provided 2 weeks after we provide comments to the Phasing Plan. So, if you could send the Phasing Plan by tomorrow or Friday, we can provide comments the same day, and **will require the final version by June 4, 2018,** for submission up the Report Writing chain.

Please advise if you have any questions or comments,

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

Council Report Writing, submission to Sally and Directors	June 18 – 22, 2018	M Fazio
Planning Committee Council Date	**September 4, 2018**	M. Fazio, M. Moniruzzaman, S. Y-Lee, AquaforBeech, Dillon, W/WW and Planning staff.

We recognize that although these are tight timelines, we are close to resolving the remaining issues, therefore feel this is do-able.

Please let us know if you have any questions/concerns or comments.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: May-31-17 5:00 PM
To: [redacted] Yong-Lee, Sally; Moniruzzaman, Monir; [redacted] Dave Maunder [redacted] 'Ash Baron'; [redacted]
Subject: RE: Meeting Notes for your Consideration - May 18, 2017 Meeting on Block 2 Servicing Strategy with the Simone Family and Friends

It's a pleasure☺

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

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From: Johnson, Brenda
Sent: May-31-17 1:40 PM
To: Fazio, Margaret; Yong-Lee, Sally; Moniruzzaman, Monir; Dinney, [redacted] Dave Maunder [redacted]; Stone, Mike; 'Ash Baron'; [redacted]
Subject: Re: Meeting Notes for your Consideration - May 18, 2017 Meeting on Block 2 Servicing Strategy with the Simone Family and Friends

Thank you Margaret

Brenda Johnson
City of Hamilton
Councillor Ward 11

Sent from my BlackBerry 10 smartphone on the Bell network.

From: Fazio, Margaret
Sent: Wednesday, May 31, 2017 1:00 PM
To: Yong-Lee, Sally; Moniruzzaman, Monir; Dinney, Kathy; Johnson, Brenda; [redacted] Dave Maunder [redacted] 'Ash Baron'; [redacted]
Subject: Meeting Notes for your Consideration - May 18, 2017 Meeting on Block 2 Servicing Strategy with the [redacted] Family and Friends

[redacted]

Please see below the Notes from our May 18, 2017 meeting, as promised:

Attendees:
The [redacted] Family Members ([redacted] (Son), and [redacted] (daughter)), and

Two family friends ([redacted]),
[redacted]
Sally Yong-Lee (Infrastructure Planning, City of Hamilton)
Monir Moniruzzaman (Infrastructure Planning, City of Hamilton)
Margaret Fazio (Infrastructure Planning, City of Hamilton)

Matters Discussed:

1. Introductions: The [redacted] Family invited friends of the family one of whom is a planner and one a developer, to advise them during this meeting. The [redacted] family's primary concerns are the location of the proposed SWM pond and the identification of Watercourse 6.1

2. Background of the studies and concerns of the [redacted] Family with proposed Concept Plans for Block 2 SS:

    a. **Stormwater (SMW) Pond location** – Cllr. Johnson expressed that the [redacted] Family need not be concerned about the drawing for the B2SS showing a SWM Pond being located on their property. This is the technically low spot in the Block 2 study area, and since we had to look holistically at the area this is where the SWM Pond is being proposed. Construction of a SWM Pond in the location shown would only happen if the developer/land owner east of the [redacted] Family land were to purchase land from the [redacted] Family. The [redacted] Family is in no way obligated to sell their property/house to anyone, move, etc., until and unless they want to. The [redacted] Family therefore has the following choices open to them:
        i. Sell their property
        ii. Co-develop
        iii. Stay where they are, and continue to use the land/house as they wish

    b. If another land owner wishes to develop lands which are within the same drainage area as that which is captured by the proposed SMW Pond, and the [redacted] Family does not wish to sell/develop their land, the other land owner/developer would need to provide for an alternative/e.g. on developer-owned lands instead.

3. Status of Watercourse 6.1
    a. Past history – north-south linear drainage swales were created by Mr. [redacted] and his family in order to provide for good drainage for the grape plants at the time they were planted. The [redacted] Family is of the opinion that the extension of WC6.1, identified during the June 9th 2016 field visit, is one of the aforementioned drainage swales created for agricultural purposes.

    b. HCA staff last updated their mapping in 2006. At that time it was shown that there was a ditch which conveyed water, with had intermittent flow. The "hockey stick" portion of WC6.1 was, in 2006, mapped by HCA as a watercourse.

    c. Knowing this, the **HCA staff** will be looking at their analysis of the entire watercourse based on photographs and other sources, to help determine the status - regulatory or not – of this watercourse, and **get back to the Simone Family and City staff.** This analysis is going on right now, and it is likely that its designation will not be determined by the time the study goes to the next Public Information Centre (PIC) on June 8th,

2017. The drawings therefore will continue to show what has been shown in the past, with the understanding that we're working on resolving this matter in the near future.

4. Site Visit date versus Permission to Enter. Our records indicate that permission to enter was grated to the City staff via telephone, on June 2, 2015, and at the time of trying to meet nature's/biological and geophysical seasonal visit timelines, that was and is considered sufficient permission as long as it's documented. We do not have a written response in our records – i.e. a signed copy of the Permission to Enter to date.

5. Block 2 SS – self organization. A letter was received by The [redacted] Family from other land owners/developers. City staff mentioned that we met with those land owners, and to be alert for any developments through this process.

As a follow up, please find attached the Notice for the coming PIC.

Please let us know if you have any questions, comments or corrections by Friday, June 9, 2017. Lack of comments will constitute agreement.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
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From: Fazio, Margaret <Margaret.Fazio@hamilton.ca>
Sent: May-30-17 3:50 PM
To: Ash Baron
Cc: 'Dave Maunder'; [redacted] Yong-Lee, Sally
Subject: RE: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the [redacted] Family and Friends
Attachments: [redacted]Copy of Landowner Permission record.xlsx

Hi Ash,

We have found the first electronic mail out letter – attached. It looks that both mail outs would have been sent out by you – we have a couple of scanned copies, though, but not all of them.

We would like to ask you to:

1. Bring all hard copies in your files to the next PIC
2. Scan all hard copies as back up and send via FTP (not a rush, but need to have them for record keeping),
3. Please check on a letter from Mr. and Mrs. [redacted] – if we have a written permission to enter in the end? We are looking for the date of written permission. Based on the attached excel spreadsheet she would have given the verbal permission to enter on June 2, 2017, which still works if you/project team conducted a visit on June 5, 2017.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
HAMILTON 2017

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From: Fazio, Margaret
Sent: May-30-17 2:41 PM
To: 'Ash Baron'
Cc: 'Dave Maunder'; [redacted]; Yong-Lee, Sally
Subject: RE: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the [redacted] Family and Friends

Thanks Ash, having those records would be great – at next PIC would work, too.

Margaret

From: Ash Baron [redacted]
Sent: May-30-17 1:39 PM
To: Fazio, Margaret

Cc: 'Dave Maunder'; [redacted] Yong-Lee, Sally
Subject: RE: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the [redacted] Family and Friends

Hi Margaret,

You are correct, what is attached to your email is the 2nd mail out letter.

All responses we received are filed here at the Guelph office. I checked our records again, and am sorry to say that we do not have a hard copy or an electronic copy of a letter from the [redacted] family. If you like, I can bring the hard copies to the upcoming PIC so that the City will have them on file. Please advise.

Kind regards,
Ash

From: Fazio, Margaret [mailto:Margaret.Fazio@hamilton.ca]
Sent: Tuesday, May 30, 2017 1:22 PM
To: Ash Baron
Cc: 'Dave Maunder'; [redacted] Yong-Lee, Sally
Subject: RE: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the [redacted] Family and Friends

Hi Ash,

Attached is the letter – which shown your name and asks that they be returned to you/Aquafor Beech? I know it's been a long while but could you check your hard copy records again, to see if you don't have any returned mail? I understand from that letter that a first request was sent by the City/us, but I have no hard copies (we usually try to keep a separate folder) to prove access was granted to any properties. I will look again for individual letters, if mixed with other folders…

Please and Thanks,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

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From: Ash Baron [redacted]
Sent: May-30-17 12:10 PM
To: Fazio, Margaret
Cc: 'Dave Maunder'
Subject: RE: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the [redacted] Family and Friends

Hi Margaret,

In April 2015, Aquafor provided the City (Guangli Zhang) with wording for the property access letter. The City did the mail outs. I have record of all permission to enter emails, letters, and phone calls the City received; as provided by

Guangli. The only record I have for the Simone property is the attached email, which states that [redacted] provided the City with verbal permission to enter. As permission had been granted, I did not need to call the [redacted] family to request permission for breeding bird surveys. We did not receive a letter from the City on behalf of the [redacted] family.

For your records (and I may have already sent you this), I have attached a copy of the list of landowners that the project team heard back from.

Kind regards,
Ash

From: Fazio, Margaret [mailto:Margaret.Fazio@hamilton.ca]
Sent: Tuesday, May 30, 2017 11:35 AM
To: Ash Baron
Cc: Dave Maunder [redacted]
Subject: RE: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the [redacted] Family and Friends

Hi Ash,

This takes us back a couple of years but I do recall that we asked Aquafor Beech for help with Permissions to Enter process for this project. I know you did phone call follow ups, and was sure you also did the mail out for us? I cannot find any hard copies of letters received – permissions to enter for this project in our hard copy files. I have a mailing list and a map of what permissions were granted. I recall we were one PM short, and one on mat leave so would have needed your help at that time. Could you check your files please?

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

CANADA 150
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From: Ash Baron [redacted]
Sent: May-30-17 9:38 AM
To: Fazio, Margaret; Moniruzzaman, Monir; [redacted]; 'Dave Maunder'; Yong-Lee, Sally; [redacted]
Subject: RE: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the [redacted] Family and Friends

Hello Margaret et al.,

My edits are shown in red, with notes in blue.

Kind regards,
Ash

From: Fazio, Margaret [mailto:Margaret.Fazio@hamilton.ca]
Sent: Monday, May 29, 2017 9:27 AM
To: Moniruzzaman, Monir; Lloyd, Trish; Dave Maunder [redacted]; Yong-Lee, Sally; Stone, Mike; 'Ash Baron'
Subject: REQUEST FOR COMMENT ON: Draft Meeting Notes - May 18, 2017 Meeting on Block 2 Servicing Strategy with the Simone Family and Friends
Importance: High

Hi,

Please see DRAFT NOTES from our meeting on May 18th, with the [redacted] Family, below. ***Please send comments by Wednesday, May 31, 2017. Lack of comments will constitute agreement.***

Hello,

Please note the following notes from our meeting, below:

Attendees:

[redacted]

Ash Baron (Aquafor Beech Ltd. – City consultant for Block 2 Servicing Strategy (SS)
Monir Moniruzzaman (Infrastructure Planning)
Margaret Fazio (Infrastructure Planning)

Matters Discussed:

1. Introductions: The [redacted] Family invited friends of the family one of whom is a planner and one a developer, to advise them during this meeting. The [redacted] family's primary concerns are the location of the proposed SWM pond and the identification of Watercourse 6.1

2. Background of the studies and concerns of the Simone Family with proposed Concept Plans for Block 2 SS:

    a. **Stormwater Pond location** – [redacted] expressed that the [redacted] Family need not be concerned about the drawing for the B2SS showing a SWM Pond being located on their property. This is the technically low spot in the Block 2 study area, and since we had to look holistically at the area this is where the SWMF is being proposed. Construction of a SWMF in the location shown would only happen if the developer/land owner east of the [redacted] were to purchase land from the [redacted] Family. The [redacted] Family is in no way obligated to sell their property/house to anyone, move, etc., until and unless they want to. The Simone Family therefore has the following choices open to them:
        i. Sell their property
        ii. Co-develop
        iii. Stay where they are, and continue to use the land/house as they wish

    b. If another land owner wishes to develop lands which are within the same drainage area as that which is captured by the proposed Stormwater Pond, and the [redacted] Family

does not wish to sell/develop their land, the other land owner/developer would need to provide for an alternative/e.g. on developer-owned lands instead.

3. **Status of Watercourse 6.1**
   a. Past history – north-south linear drainage swales were created by [redacted] and his family in order to provide for good drainage for the grape plants at the time they were planted. The [redacted] Family is of the opinion that the extension of WC6.1, identified during the June 9th 2016 field visit, is one of the aforementioned drainage swales created for agricultural purposes.

   b. HCA staff last updated their mapping in 2006. At that time it was shown that there was a ditch which conveyed water, with had intermittent flow. The "hockey stick" portion of WC6.1 was, in 2006, mapped by HCA as a watercourse. [redacted] – do you want to comment on statements made re: the HCA's HDF assessment, enclosing the WC6.1 extension, regulation of "insignificant watercourses", etc.?

   c. Knowing this, the **HCA staff** will be looking at their analysis of the entire watercourse based on photographs and other sources, to help determine the status - regulatory or not – of this watercourse, and **get back to the Simone Family and City staff.** This analysis is going on right now, and it is likely that its designation will not be determined by the time the study goes to the next Public Information Centre (PIC) on June 8th, 2017. The drawings therefore will continue to show what has been shown in the past, with the understanding that we're working on resolving this matter in the near future.

4. **Site Visit date versus Permission to Enter.** Our telephone records indicate that permission to enter was grated to the City verbally first, on June 2, 2015. They were then followed up by written permissions, some of which after the first visits already took place. – **Margaret**, Aquafor does not have any record of written correspondence with the [redacted] Family. Please confirm that the preceding sentence is true.

5. **Block 2 SS – self organization matter.** A letter was received by The Simone Family from other land owners/developers. City staff mentioned that we met with those land owners, and to be alert for any developments through this process.

Please let me know if you have any questions or comments.

Thank you,

Margaret Fazio, B.Sc., *EP, MCIP, RPP*
Senior Project Manager, Infrastructure Planning
Growth Management, Planning and Economic Development Department
City of Hamilton, 71 Main Street West, 6th Floor, Hamilton, ON, Canada, L8R 4Y5
Tel: 905-546-2424 ext. 2218; Fax: 905-540-5611; e-mail: *Margaret.Fazio@hamilton.ca*

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Hamilton Block 2 - Record of Landowner permissions

Property Address	Name		Phone number	Email
	First	Last		
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]		[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]		[redacted]
[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]		

Permission	Date
Yes	April 29 2015
Yes	April 29 2015
Yes	April 29 2015
Yes	May 1 2015
No	April 30 2015
Yes	April 27 2015
Yes	April 27 2015
Yes	May 1 2015
Yes	May 7 2015
Yes	May 8 2015
Yes	May 11 2015
Yes	May 22 2015
Yes	May 25 2015
Yes	May 25 2015
Yes	May 25 2015
Yes, prior notice req'd	May 26 2015
Yes, prior notice req'd	29-May-15
No	29-May-15
No	29-May-15
Yes	01-Jun-15
Yes	25-May-15
Yes	02-Jun-15
No	02-Jun-15
Yes	02-Jun-15
Yes	05-Jun-15
Yes	01-Jun-15
Yes	25-May-15

Notes
Daughter called. Father has passed away, mother ([redacted] now owns the property.
Rec'd via fax. Also rec'd fax for Permission to Enter Slip, dated May 21 2015.
Rec'd via email
Rec'd via email. Fruitland Christian Reformed Church.
Rec'd via letter mail
Rec'd via letter mail
Rec'd via letter mail
Rec'd via letter mail. Stony Creek Welding Ltd.
City rec'd letter.
Rec'd via email.
Rec`d via email from City. Branthaven Fruitland Inc. (Stoney Creek Christian Fellowship property).
Rec'd via email. Kries manufacturing shop.
Rec'd via fax. Spoke to Tony Camply on phone, son Frank left a message on May 22.
Rec'd via email. E & V Precision Grinding
City of Hamilton rec'd phonecall.
City of Hamilton rec'd phonecall. 24-48 hours notice req'd prior to entering the property.
Rec'd via email. Min 24 hrs notice req'd prior to entry.
Woodlot 6 property. Lawyer's letter states that property access is refused. Lawyer is Manfred Rudolf.
Rec'd via email.
Rec'd via fax.
Rec'd via phone.
Access denied until further notice, likley after OMB hearing in October. Landowner is involved in an OMB hearing and has been charged by the CA with tree cutting on his property. Will send access request letter to lawyer ([redacted], who will send a reply to us and the City.
City of Hamilton rec'd phonecall.
Rec'd via fax. Also sent ATO via letter mail, dated 28 June 2015.
Rec'd via fax on June 7th.
Rec'd via mail.

Block 2 Servicing Strategy for the Fruitland

– Winona Secondary Plan Lands

Appendix J

Letter Report

SCUBE Block 2 – Draft Development Constraints

– August 2016

11 August, 2016

ABL *Ref: 65736*

City of Hamilton
71 Main Street W., 6th Floor
Hamilton, ON
L8R 4Y5

Attention: **Ms. Margaret Fazio**
Growth Management, Planning and Economic Development Department
RE: **SCUBE Block 2 – Draft Development Constraints**

Dear Ms. Fazio,

Further to our recent field investigations and discussions regarding the SCUBE Block 2 lands, please find attached mapping to illustrate the draft limits of future urban development. The development constraints for the study area are illustrated in the attached map Figure 1 and include:

- Flood hazards, represented by 100year floodlines;
- Meander belt/erosion hazards;
- NHS features, including wetlands, woodlands, and significant wildlife habitat. These features were generally identified through mapping and confirmed through field investigations with HCA and City staff.
- NHS buffers, as defined by City and HCA policy.

We understand that HCA staff have had an opportunity to review the draft mapping for the flood and erosion hazard lands, and have a general understanding of the approach used by Aquafor, but require further clarification of the methodology as well as the digital hydraulic model files before endorsing draft hazard limits (Mike Stone email, 27 July 2016). Please find attached to this letter an overview of the methodology used to define these hazards lands over Stoney Creek Watercourses 6 and 7 through the subject site.

Attached Figure 2 illustrates the aggregate development constraints of all of the above. Species at Risk (SAR) habitat defined through the field studies is also illustrated. ***For the purposes of finalizing these development limits and proceeding with the Block 2 Servicing Study, we will also need the City and HCA to provide confirmation with respect to the following***:

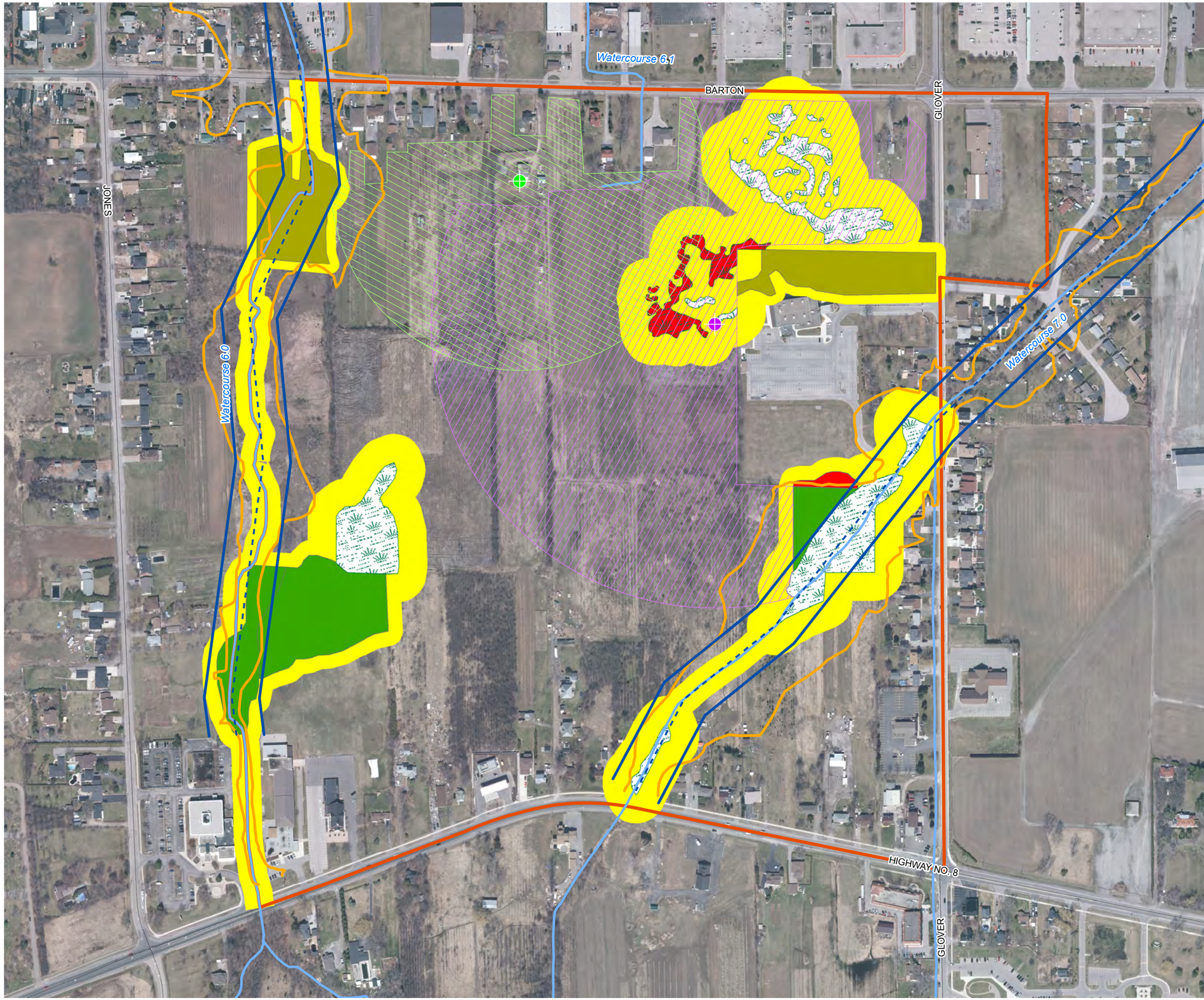
- any requirements to maintain Watercourse 6.1 and the associated headwater ditch (generally following the fenceline) upstream of Barton Street, as observed during the site visit on June 9 2016; and
- Following the point above, clarification from HCA on the regulatory status of the wetland complex east of, and hydrologically connected to, the ditch.

Should you have any questions, please do not hesitate to contact myself at 905-629-0099 ext. 276, or Ash Baron at 519-224-3740 ext. 1200.

Sincerely,
AQUAFOR BEECH LIMITED

Greg Frew, P.Eng.
Water Resources & Environmental Engineer
Phone: 905-629-0099 ext. 276
Fax: 905-629-0089
Email: frew.g@aquaforbeech.com

c.c.: D. Maunder, A. Baron, R. Amos, Aquafor Beech Ltd.



Block 2 of the Fruitland-Winona Block Servicing Strategy

Legend

- Study Area
- Watercourse
- Floodlines
- Meander Belt/Erosion Hazard
- Barn Swallow (SAR)
- Barn Swallow 200m Buffer
- Bobolink (SAR)
- Bobolink 300m Buffer
- Unevaluated Wetland
- Significant Woodland
- Woodland
- Significant Wildlife Habitat
- Buffer

Buffer Distances:
Unevaluated Wetland - 30m
Significant Woodland - 15m
Woodland - 10m
Significant Wildlife Habitat - 15m
Watercourse - 15m

Note - The status of Watercourse 6.1 and the adjacent ditch connecting WC6.1 and the wetlands behind Winona Vine Estates is to be determined in consultation with the Hamilton Conservation Authority. As such, this map is considered interim and may be subject to updates.

Figure 1

Constraints - Scenario 2
with Species-at-Risk and Floodlines

Date: August 2016
Data Source: City of Hamilton, 2016

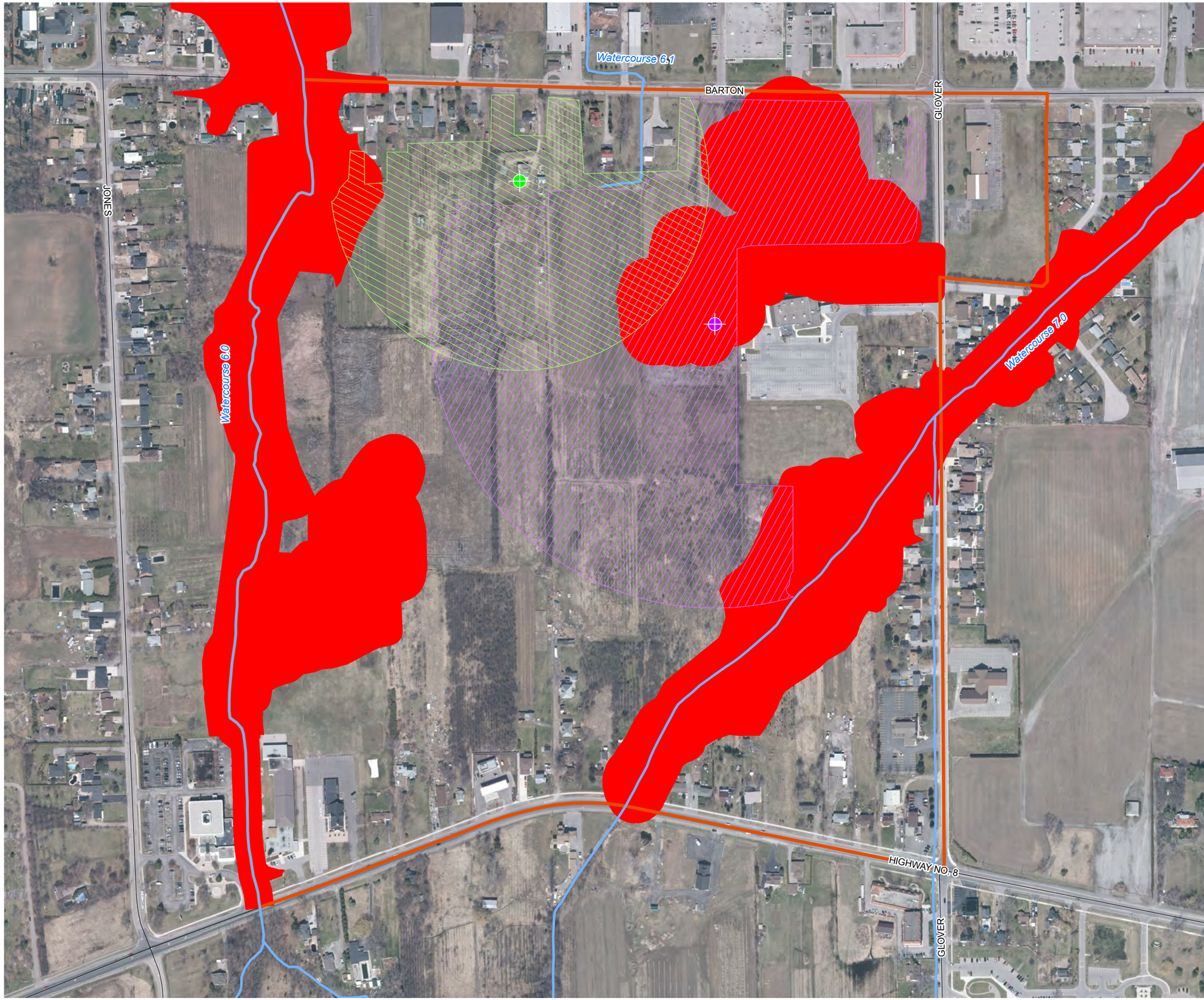
0 25 50 100 150 200
Meters

N

Hamilton

Aquafor Beech Limited

Block 2 of the Fruitland-Winona Block Servicing Strategy



Legend

- Study Area
- Watercourse
- Constraints

Constraints due to SAR Considerations

- Barn Swallow (SAR)
- Barn Swallow 200m Buffer
- Bobolink (SAR)
- Bobolink 300m Buffer

Note - The status of Watercourse 6.1 and the adjacent ditch connecting WC6.1 and the wetlands behind Winona Vine Estates is to be determined in consultation with the Hamilton Conservation Authority. As such, this map is considered interim and may be subject to updates.

Figure 2

Constraints - Scenario 2

Date: August 2016
Data Source: City of Hamilton, 2016

0 25 50 100 150 200
Meters

N

Hamilton

Aquafor Beech Limited

Flood Hazards

Flood hazards were initially plotted for Watercourse (WC) 6 and 7 through the Block 2 lands as part of the SCUBE West Subwatershed Study (May 2013). A VISUAL OTTHYMO model was developed and used to estimate flood flow rates. A HEC-RAS hydraulic model and floodplain mapping were also developed using contour mapping, together with survey data obtained for culvert crossing structures. However, as noted in the report, the accuracy of the contour mapping that was available at the time was questionable over some of the creek reaches, including WC6 within the Block 2 lands. As such, the Subwatershed Study recognized the need to update the hydraulic model and floodlines when more accurate topographic mapping became available.

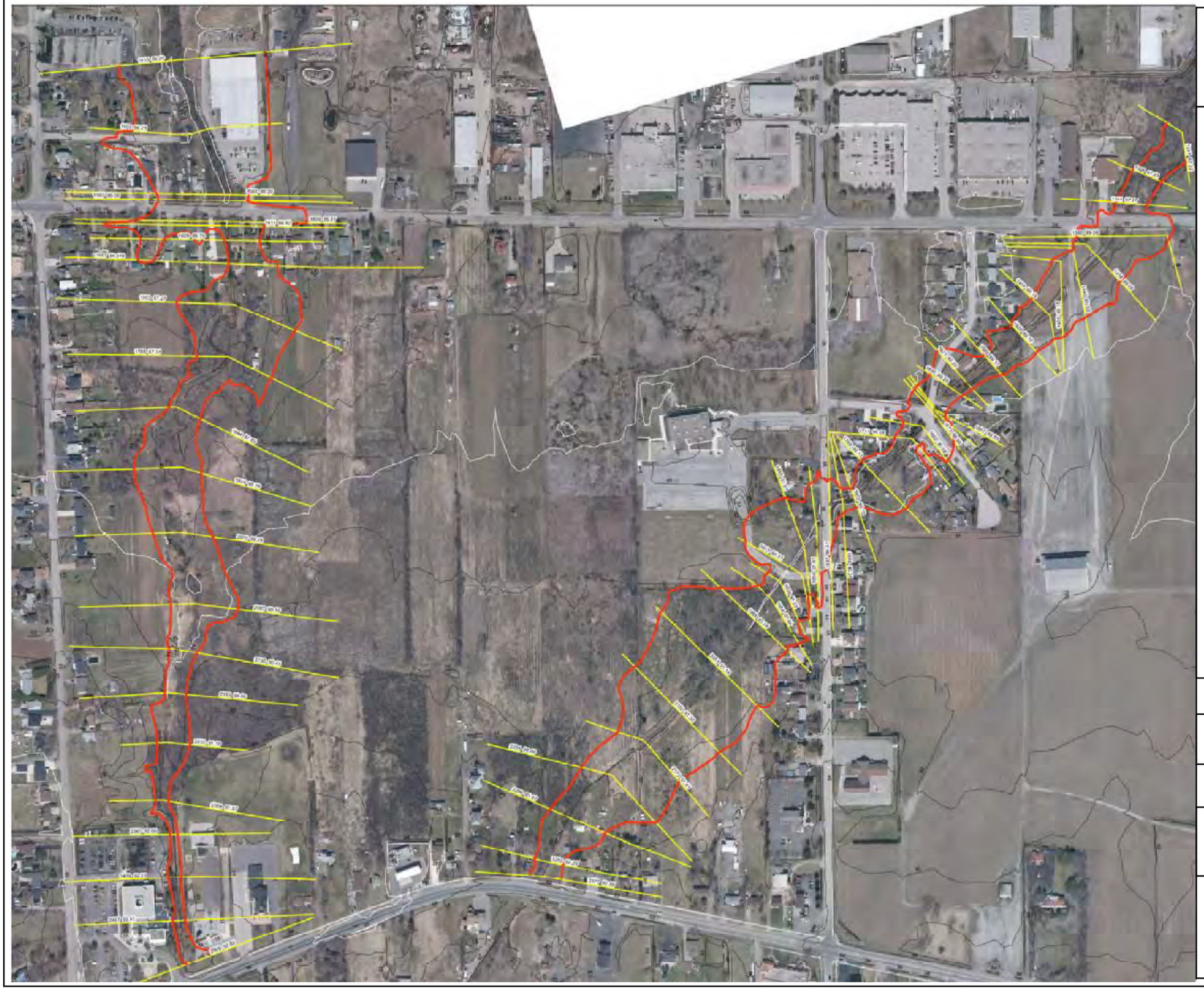
HCA recently initiated the "Stoney Creek Numbered Watercourse Floodplain Mapping Update Study" which is intended to update the flood flow estimates and establish Regulatory Floodplain Mapping for all of the Stoney Creek watercourses. As part of this study, HCA has also developed updated topographic mapping coverage for use over the study area. The HCA study is still on-going but in March of 2016 HCA provided updated topographic mapping for use in developing updated "interim" floodlines to define development limits in the Block 2 study area.

The following outlines the general steps undertaken to update the hydraulic model and floodline hazards through the Block 2 reach between Barton Street and Highway 8 using HCA's updated contour mapping:

- the SCUBE subwatershed models for WC 6 and WC 7 were used as a basis;
- cross-section alignment was refined, where necessary, such that they were roughly perpendicular with the direction of flow as predicted from the updated contours;
- additional cross-sections were added in select locations;
- the cross-section geometry was re-coded using the updated contours;
- where the cross-sections intersected buildings, flow obstructions were coded into the model cross-sections;
- survey data near Barton Street obtained by Aquafor during and after the SCUBE Subwatershed Study was used to define the culvert crossing structure and channel cross-sections in this area;
- the resulting 100-year flood profile (associated with uncontrolled future Official Plan landuses) from the HEC-RAS model was plotted on the updated contour mapping.

The updated floodlines are plotted on the new contour mapping in the attached Figure 3. The updated digital HEC-RAS model will also be forwarded to HCA (via email) for their review and approval.

As noted in HCA's email (Mike Stone email, 27 July 2016), it is understood that the floodlines defined through this assessment will not be considered official Regulatory Floodplain Mapping, but would be sufficient to define development limits, until such time as HCA's on-going Stoney Creek Numbered Watercourse Floodplain Mapping Update Study is complete.



Block 2 of the Fruitland-Winona Block Servicing Strategy

Legend

- 100-yr Flood Hazard
- HEC-RAS Model Cross Sections

Figure 3

Updated Floodline Mapping

Date: August 2016
Data Source: City of Hamilton and HCA, 2016

N

Hamilton

Aquafor Beech

Meander Belt / Erosion Hazards

The meander belt represents the area that a channel can reasonably be expected to occupy both now and in the future with respect to erosion and lateral channel migration. Meander belt (erosion hazard) delineation is a component considered in natural hazard mapping to define limits of development and is intended to not only protect natural channel processes within the study area, but also to protect private property and public health and safety.

The following tasks were undertaken during the geomorphic assessment and meander belt/erosion hazard corridor delineation of Watercourse 6 & 7 within the study area.

Reach Delineation

A channel reach represents a length of channel that exhibits essentially the same physical characteristics of channel form and function — geology, vegetation, sinuosity, physical dimensions, water flow, and sediment transport — as well as anthropogenic (human induced) influences such as land use. The delineation of a reach guides desktop and field analyses by considering the influence of localized channel patterns and processes, and provides a stream-based framework to define the spatial limits of the study area.

Reaches are typically defined by uniformity in planform morphology, channel bed geology, and similarity in riparian and floodplain vegetation. For the purposes of this study, a separate reach and meander belt were applied over each of watercourse 6 & 7

Synoptic Geomorphic Assessment

A synoptic geomorphic investigation was completed to provide insight into existing conditions of the study area. Review of topographic mapping and aerial photography, as well as field reconnaissance aid in establishing existing channel conditions and confirming areas of erosion and deposition within the system. Basic channel morphometrics are also recorded including bankfull width and depth along with bed and bank substrate characterizations.

Meander Belt Mapping

As noted, meander belt delineation is used in conjunction with erosion hazard mapping and is generally required by permitting agencies for works within and adjacent to watercourses since anything situated within a meander belt could, at some time in the future, be subject to erosion by the channel.

The Toronto and Region Conservation Authority (TRCA) (2004) meander belt delineation procedures are generally accepted guidelines for completing river erosion hazard mapping within the TRCA jurisdiction, and these procedures are considered appropriate for most other conservation authority watersheds in southern Ontario.

The Ontario Ministry of Natural Resources (MNR) (2002) provides guidelines for delineating erosion hazard limits within unconfined systems, such as Watercourse 6 & 7. The procedures require delineation of a meander belt plus an additional erosion access allowance as shown in Figure 1 below.

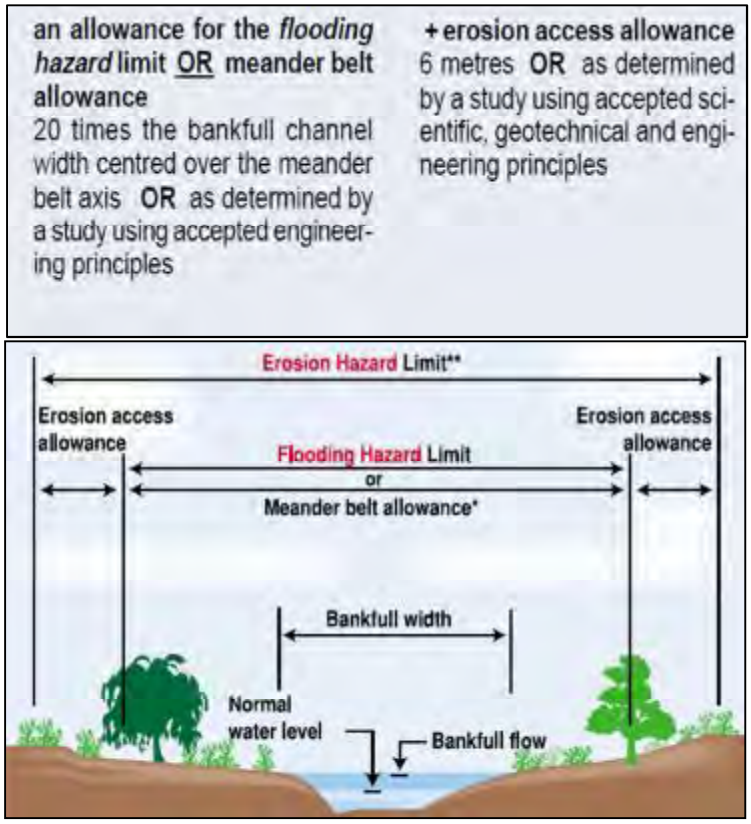


Figure 1. MNR (2002) Guidelines for Erosion Hazard Limits In Unconfined Systems

Mapping of the erosion hazard limits follows the MNR (2002) guidelines, which include mapping of a meander belt per TRCA (2004) protocol and adding an additional 6 m erosion access allowance. The meander belt mapping has been included within Figure 1, appended to this letter.