

APPENDIX D: AQUATIC HABITAT



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017)1
WATERCOURSE CROSSINGS				
Hurley Relief Drain	SC1	Little River	Flowing water in spring Wetted width x depth: 2.0 m x 0.15 m (spring) Thermal Regime: Unknown DFO Drain Classification: Class F	July 1 to March 15 (or periods of no flow)
Washbrooke Drain	SC2	Little River	Flowing water in spring Wetted width x depth: 3.0 m x 0.20 m (spring) Fish observed in channel Deep pool at upstream and downstream end of culvert (0.40 m) Thermal Regime: Unknown DFO Drain Classification: NR	July 1 to March 15 (or periods of no flow)
9 th Concession Drain	SC3	Little River	Standing water in spring Wetted width x depth: 1.0 m x 0.15 m (spring) Thermal Regime: Unknown DFO Drain Classification: E	July 1 to March 15 (or periods of no flow)
Little River Drain	SC4	Little River	Dry in spring Thermal Regime: Unknown DFO Drain Classification: Class F	N/A
Sullivan Creek Drain	SC5	Pike Creek	Flowing water in spring Wetted width x depth: 2.0 m x 0.15 m (spring) Thermal Regime: Unknown DFO Drain Classification: Class F	July 1 to March 15 (or periods of no flow)
Gzowski Drain	SC6	Pike Creek	Flowing water in spring Wetted width x depth: 0.50 m x 0.20 m (spring) Wide channel and deep pool on upstream side of culvert (south of County Road 46) Thermal Regime: Unknown DFO Drain Classification: Class NR	July 1 to March 15 (or periods of no flow)



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017)1
Pike Creek	SC7	Pike Creek	Flowing water in spring Wetted width x depth: 3.0 m x 0.30 m (spring) Max pool depth 0.5 m (spring) Thermal Regime: Warm DFO Drain Classification: T	July 1 to March 15 (or periods of no flow)
Croft Drain	SC8	Pike Creek	Flowing water in spring Wetted width x depth: 1.0 m x 0.15 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Pike Creek	SC9	Pike Creek	Flowing water in spring Wetted width x depth: 1.5 m x 0.30 m (spring) Thermal Regime: Unknown DFO Drain Classification: Class F	July 1 to March 15 (or periods of no flow)
Puce River	SC10	Puce River	Flowing water in spring Wetted width x depth: 4.0 m x 0.40 m (spring) Connection with drainage channels on south side of County Road 46, east and west directions Thermal Regime: Warm DFO Drain Classification: Class C	July 1 to March 15 (or periods of no flow)
4 th Concession Drain	SC11	Puce River	Flowing water in spring Wetted width x depth: 1.0 m x 0.20 m (spring) Thermal Regime: Unknown DFO Drain Classification: Class F	July 1 to March 15 (or periods of no flow)
Taylor Outlet Drain	SC12	Belle River	Standing water in spring Wetted width x depth: 1.5 m x 0.15 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017)1
Belle River Drain	SC13	Belle River	Flowing water in spring Wetted width x depth: 8.0 m x 0.80 m (spring) No connection with Middle Road Drain (SC31) Connection with Seguin Drain (SC38) Thermal Regime: Warm DFO Drain Classification: NR	July 1 to March 15 (or periods of no flow)
Duck Creek	SC14	Duck Creek	Flowing water in spring Wetted width x depth: 5.0 m x 0.30 m (spring) Deep pool (0.6 m) on south side of County Road 46 Thermal Regime: Warm DFO Drain Classification: Class C DFO SAR Identified: Yes DFO Critical Habitat Identified: No	July 1 to March 15 (or periods of no flow)
Moison Creek Branch	SC15	Moison Creek	Standing water in spring Wetted width x depth: 1.0 m x 0.10 m (spring) Thermal Regime: Warm DFO Drain Classification: F DFO SAR Identified: Yes DFO Critical Habitat Identified: No	July 1 to March 15 (or periods of no flow)
Moison Creek	SC16	Moison Creek	Flowing water in spring Wetted width x depth: 3.0 m x 0.30 m (spring) Thermal Regime: Warm DFO Drain Classification: Class C DFO SAR Identified: Yes DFO Critical Habitat Identified: No	July 1 to March 15 (or periods of no flow)



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017)1
Ruscom River	SC17	Ruscom River	Flowing water in spring Wetted width x depth: 6.0 m x 0.60 m (spring) Riffle habitat observed on downstream side of bride (north of County Road 46) Thermal Regime: Warm DFO Drain Classification: E DFO SAR Identified: Yes DFO Critical Habitat Identified: Yes	July 1 to March 15 (or periods of no flow)
Alexander Drain,	SC18	Ruscom River	Flowing water in spring Wetted width x depth: 1.4 m x 0.25 m (spring) Thermal Regime: Unknown DFO Drain Classification: NR	July 1 to March 15 (or periods of no flow)
Malden Road Drain Outlet	SC19	Ruscom River	Standing water in spring Wetted width x depth: 1.0 m x 0.10 m (spring) Thermal Regime: Unknown DFO Drain Classification: C	July 1 to March 15 (or periods of no flow)
Malden Road Drain Outlet Extension	SC20	Ruscom River	Standing water in spring Wetted width x depth: 0.5 m x 0.03 m (spring) Thermal Regime: Unknown DFO Drain Classification: C	July 1 to March 15 (or periods of no flow)
Big Creek Drain – West Branch	SC21	LTVCA 1	Flowing water in spring Wetted width x depth: 3.5 m x 0.60 m (spring) Riffle habitat on downstream side of bridge (north of Lakeshore Road 309) Thermal Regime: Warm DFO Drain Classification: C	July 1 to March 15 (or periods of no flow)
Storey Drain	SC22	LTVCA 1	Standing water in spring Wetted width x depth: 1.0 m x 0.10 m (spring) Thermal Regime: Unknown DFO Drain Classification: NR	July 1 to March 15 (or periods of no flow)



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017) ¹
Big Creek/Robb-Dales Drain	SC23	LTVCA 1	Flowing water in spring Wetted width x depth: 5.0 m x 0.60 m (spring) Connection with Mellow Drain Branch Thermal Regime: Unknown DFO Drain Classification: NR	July 1 to March 15 (or periods of no flow)
Plouffe & McKeown Drain	SC24	LTVCA 1	Flowing water in spring Wetted width x depth: 1.5 m x 0.20 m Thermal Regime: Unknown DFO Drain Classification: NR	July 1 to March 15 (or periods of no flow)
East Branch of Big Creek Drain	SC25	LTVCA 1	Flowing water in spring Wetted width x depth: 3.0 m x 0.70 m Thermal Regime: Unknown DFO Drain Classification: NR	July 1 to March 15 (or periods of no flow)
Government Drain	SC26	LTVCA 1	Flowing water in spring Wetted width x depth: 1.2 m x 0.25 m Thermal Regime: Unknown DFO Drain Classification: NR	July 1 to March 15 (or periods of no flow)
West Townline Drain (Mooney Creek)	SC29	Pike Creek	Flowing water in spring Wetted width x depth: 4.0 m x 0.80 m (spring) Thermal Regime: Unknown DFO Drain Classification: T	July 1 to March 15 (or periods of no flow)
Hurley Drain	SC78	Little River	Standing water in spring Wetted width x depth: 0.50 m x 0.10 m (spring) Permanent migratory obstruction: downstream channel (north side of County Road 46) piped underground Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017)1
Ruston Drain	SC80	Pike Creek	Flowing water in spring Wetted width x depth: 0.30 m x 0.15 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Watercourses Flowing Parallel to Pipeline Within ROW				
O'Keefe Drain	S27	Pike Creek	Flowing water in spring Wetted width x depth: 2.0 m x 0.15 m (spring) Thermal Regime: Unknown DFO Drain Classification: Class F	July 1 to March 15 (or periods of no flow)
Gzowski Drain	S28	Pike Creek	Flowing water in spring Wetted width x depth: 2.0 m x 0.15 m (spring) Thermal Regime: Unknown DFO Drain Classification: Class F	July 1 to March 15 (or periods of no flow)
Doyle Drain	S30	Pike Creek	Flowing water in spring Wetted width x depth: 1.0 m x 0.15 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Middle Road Drain	S31, S32, S33, S34	Puce River	Flowing water in spring from SC31 to SC34 Wetted width x depth: 1.5 m x 0.20 m (SC31 – SC34) (spring) Discharges into Puce River without barriers to fish migration Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
4 th Concession Drain	S35 S36	Puce River	Standing water in spring Wetted width x depth: 0.80 m x 0.15 m (SC35 – SC36) (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017)1
18-19 Side Road Drain	S37	Belle River	Mapped location (south side of County Road 46) of watercourse dry in spring, standing water in channel on north side of County Road 46 Wetted width x depth: 1.0 m x 0.10 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	N/A
Seguin Drain	S38 S39	Belle River	Flowing water in spring Wetted width x depth: 0.90m x 0.05 m (SC38 – SC39) (spring) Piped underground through town (North Woodslee) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Concession 1A Drain	S40	Belle River	Standing water in spring Wetted width x depth: 0.50m x 0.05 m (spring) Thermal Regime: Unknown DFO Drain Classification: T	July 1 to March 15 (or periods of no flow)
Diemer Kwiatkowski Drain	S41	Duck Creek	Standing water in spring Wetted width x depth: 0.60m x 0.10 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
West 2nd Concession Road N of Cty Rd 46 Drain	S42	Duck Creek	Standing water in spring Wetted width x depth: 0.30 m x 0.03 m (spring) Thermal Regime: Unknown DFO Drain Classification: F DFO SAR Identified: Yes DFO Critical Habitat Identified: No	July 1 to March 15 (or periods of no flow)
Bondy Drain	S43	Moison Creek	Flowing water in spring Wetted width x depth: 1.3 m x 0.10 m (spring) Thermal Regime: Unknown DFO Drain Classification: F DFO SAR Identified: Yes DFO Critical Habitat Identified: No	July 1 to March 15 (or periods of no flow)



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017)1
Middle Road Drain Extension	S44 S45	Ruscom River	Flowing water in spring Wetted width x depth: 1.30 m x 0.20 m (SC44 – SC45) (spring) Thermal Regime: Unknown DFO Drain Classification: F DFO SAR Identified: Yes DFO Critical Habitat Identified: No	July 1 to March 15 (or periods of no flow)
Middle Road Drain	S46	Ruscom River	Flowing water in spring Wetted width x depth: 2.0 m x 0.20 m (spring) Discharge into Ruscom River – fish migration barriers not observed Thermal Regime: Unknown DFO Drain Classification: F DFO SAR Identified: Yes DFO Critical Habitat Identified: No	July 1 to March 15 (or periods of no flow)
Armstrong Brown Drain	S47	Ruscom River	Flowing water in spring Wetted width x depth: 1.5 m x 0.20 m (spring) Thermal Regime: Unknown DFO Drain Classification: F DFO SAR Identified: Yes DFO Critical Habitat Identified: No	July 1 to March 15 (or periods of no flow)
Knister Drain	S48 S49 S50	Ruscom River	Flowing water in spring Wetted width x depth: 1.5 m x 0.25 m (SC48 – SC50) (spring) Discharge into Ruscom River – fish migration barriers not observed Thermal Regime: Unknown DFO Drain Classification: F DFO SAR Identified: Yes DFO Critical Habitat Identified: No	July 1 to March 15 (or periods of no flow)
Bellmore D&W Drain	S51	Ruscom River	Flowing water in spring Wetted width x depth: 0.40 m x 0.05 m (spring) Thermal Regime: Warm DFO Drain Classification: T	July 1 to March 15 (or periods of no flow)



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017)1
Malden Road Drain	S52	Ruscom River	Standing water in spring Wetted width x depth: 0.6 m x 0.05 m Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Bellemore Drain	S53	LTVCA 1	Standing water in spring Wetted width x depth: 1.0 m x 0.2 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Metz-Calder Drain	S54	LTVCA 1	Standing water in spring Wetted width x depth: 1.0 m x 0.2 m (spring) Thermal Regime: Unknown DFO Drain Classification: T	July 1 to March 15 (or periods of no flow)
Government Drain #2	S55	LTVCA 1	Standing water in spring Wetted width x depth: 2.0 m x 0.30 m (spring) Discharges into Big Creek Drain – fish migration barriers not observed Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Mellow Drain Branch	S56	LTVCA 1	Flowing water in spring Wetted width x depth: 1.0 m x 0.15 m (spring) In culvert underground at confluence with Big Creek Drain – possible fish migration barrier Thermal Regime: Unknown DFO Drain Classification: T	July 1 to March 15 (or periods of no flow)
Lathuille Drain	S57	LTVCA 1	Dry in spring No channel Thermal Regime: Unknown DFO Drain Classification: T	N/A



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017)1
East 9 th Concession Drain	S58	LTVCA 1	Dry in spring No Connection to Big Creek Thermal Regime: Unknown DFO Drain Classification: T	N/A
Labonte – Breault Drain	S59	LTVCA 1	Standing water in spring Wetted width x depth: 1.0 m x 0.10 m (spring) Thermal Regime: Unknown DFO Drain Classification: T	July 1 to March 15 (or periods of no flow)
18-19 Sideroad & Hill Drain	S60	LTVCA 1	Flowing water in spring Wetted width x depth: 1.0 m x 0.15 m (spring) Fish migration barrier at confluence with East Branch of Big Creek Thermal Regime: Unknown DFO Drain Classification: NR	July 1 to March 15 (or periods of no flow)
Keith Drain	S61	LTVCA 1	Flowing water in spring Wetted width x depth: 1.0 m x 0.20 m (spring) Discharges into East Branch of Big Creek Drain – fish migration barrier not observed Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Broulette – Donais Drain	S62	LTVCA 1	Standing water in spring Wetted width x depth: 2.2 m x 0.30 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Dawson Drain	S63	LTVCA 1	Standing water in spring Wetted width x depth: 0.30 m x 0.03 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017)1
Baker Drain	S64	LTVCA 1	Flowing water in spring Wetted width x depth: 0.80 m x 0.15 m (spring) Thermal Regime: Unknown DFO Drain Classification: NR	July 1 to March 15 (or periods of no flow)
Horton Drain	S65	LTVCA 1	Flowing water in spring Wetted width x depth: 0.80 m x 0.10 m (spring) Thermal Regime: Unknown DFO Drain Classification: NR	July 1 to March 15 (or periods of no flow)
Trembley Drain	S66	LTVCA 1	Flowing water in spring Wetted width x depth: 0.40 m x 0.05 m (spring) Thermal Regime: Unknown DFO Drain Classification: NR	July 1 to March 15 (or periods of no flow)
Government Drain	S67	LTVCA 1	Flowing water in spring Wetted width x depth: 2.0 m x 0.30 m Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Cook Drain & Branch	S68	LTVCA 1	Flowing water in spring Wetted width x depth: 0.80 m x 0.10 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Philip Drain	S69	LTVCA 1	Flowing water in spring Wetted width x depth: 0.50 m x 0.10 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Philip Drain	S70	LTVCA 1	Flowing water in spring Wetted width x depth: 1.3 m x 0.20 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017)1
Burton Drain	S71 S72	LTVCA 1	Standing water in spring Wetted width x depth: 1.0 m x 0.05 m (SC71-SC72) (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Unnamed Drain	S73	LTVCA 1	Flowing water in spring Wetted width x depth: 0.30 m x 0.10 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Unnamed Drain	S74	LTVCA 1	Flowing water in spring Wetted width x depth: 0.30 m x 0.05 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Burton Drain	S75	LTVCA 1	Flowing water in spring Wetted width x depth: 1.0 m x 0.10 m (Burton Drain) (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Cooper Drain East	S76	LTVCA 3	Flowing in spring Wetted width x depth: 1.3 m x 0.15 m Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
McKim Drain West 71-72	S77	LTVCA 3	Flowing water in spring Wetted width x depth: 1.2 m x 0.20 m (McKim Drain West) (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Shuttleworth Drain	S79	Little River	Standing water in spring Wetted width x depth: 1.0 m x 0.10 m (spring) Thermal Regime: Unknown DFO Drain Classification: T	July 1 to March 15 (or periods of no flow)



Appendix D Aquatic Habitat Assessment for the Enbridge Gas Windsor Pipeline Replacement

Watercourse Name	Station ID	Subwatershed	Habitat Observations and Background Information at Crossing Location	In-Water Window (DFO 2017) ¹
Brady Outlet Drain	S81	Puce River	Flowing water in spring Wetted width x depth: 0.80 m x 0.25 m (spring) Discharges into Puce River – migration barriers not observed Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)
Armstrong Brown Drain	S82	Ruscom River	Flowing water in spring Wetted width x depth: 0.50 m x 0.15 m (spring) Thermal Regime: Unknown DFO Drain Classification: F	July 1 to March 15 (or periods of no flow)

Notes:

1. Timing windows were determined using DFO's Guidance for Maintaining and Repairing Municipal Drains in Ontario Version 1.0 (DFO 2017). MNRF may provide revised dates following consultation.
2. Spring habitat assessment took place from April 3 – 5, 2019

