



November 2, 2018

Credit Valley Conservation
Planning and Development Services
1255 Old Derry Road
Mississauga, ON L5N 6R4

Attention: Maricris Marinas
Planner

Dear Ms. Marinas:

**RE: Port Credit West Village
Environmental Impact Study Addendum
2018 Wintering Waterfowl Survey Results and Analysis**

This letter provides the results of additional wintering waterfowl surveys completed on March 1 and 15, 2018 in support of the Port Credit West Village development in Mississauga, Ontario. This letter is being provided as an Addendum to the March 2018 Environmental Impact Study (EIS), which did not include the results of the final two surveys conducted in March 2018 due to the timing of production. In addition to providing these results, this letter also outlines the methodology and results of all wintering waterfowl surveys completed in 2017 and 2018 and provides an analysis of the results with respect to potential impacts of the proposed development on wintering waterfowl use of nearby portions of Lake Ontario.

Methodology

Wintering waterfowl surveys were completed on four occasions in March 2017. The timing of commencement of the surveys was dictated by the date of initiation of the project. Given that wintering waterfowl activity is known to occur earlier in the winter as well, Credit Valley Conservation (CVC) requested that additional wintering waterfowl surveys be completed in 2018 to ensure a complete data set of wintering waterfowl activity throughout the wintering period. To address this request, five additional wintering waterfowl surveys were completed between early January and late March 2018.

During each wintering waterfowl survey, all of the adjacent Lake Ontario shoreline to the south of the Subject Lands (as shown in Figure 3 in Appendix A of the EIS) was walked slowly with regular stops approximately every 50 m. Waterfowl species were recorded, avoiding double counting whenever possible. Observations were made with Ziess 10X50 Trinovid binoculars and a Swarovski HD 81 mm telescope. Individual birds were typically categorized as either within or beyond a particular distance (typically 200 m or 250 m) of the shoreline. This delineation was used to approximate near-shore use by the species recorded. Maximum distance of observation was used on every visit, and fly-past birds were also tallied.

Although waterfowl (i.e., ducks, geese and swans) were the target species for these surveys, based on the known use of the western end of Lake Ontario for globally significant overwintering congregations of waterfowl, other incidental species were also noted during the surveys. This included waterbird species, such as terns, gulls, loons, grebes and cormorants, as well as other

non-waterbird species. Some waterbird overwintering is known to occur in the area, but concentrations are not typically as large as those that occur for waterfowl species.

Results

Table 1 (Appendix A) summarizes the results of each wintering waterfowl survey event completed in 2017 and 2018, including the number and their location relative to the shoreline for each observed waterfowl species. Overall, a total of 16 waterfowl species and seven additional waterbird species were observed during the surveys. In 2017, a total of 15 waterfowl species were observed, along with six other waterbird species, while in 2018, 12 species of waterfowl and three other waterbird species were observed during the surveys. No species at risk wintering waterfowl were recorded in 2017 or 2018.

The 2017 and 2018 survey results are discussed in the following sections.

2017 Wintering Waterfowl Results

The most common waterfowl species observed in Lake Ontario in March 2017 included (in order of abundance) Common Goldeneye (*Bucephala clangula*), Long-tailed Duck (*Clangula hyemalis*), and Bufflehead (*Bucephala albeola*). Common Goldeneye numbers were highest in mid-March 2017, with substantially lower numbers at the end of March 2017. On March 12, 2017, this species was more prevalent offshore (>200 m), although the flock had moved closer to shore (<200 m) on March 21, 2017. Numbers of Long-tailed Duck were highest on March 12, 2017 and decreased throughout the remainder of the month. Distribution was highest offshore (>200 m) on March 12, 2017, with relatively even distribution between near shore and offshore areas later in March. Bufflehead numbers increased throughout March 2017, with higher numbers of birds typically present in the near shore zone compared to the offshore zone.

2018 Wintering Waterfowl Results

The most common waterfowl species observed in winter 2018 was the Greater Scaup (*Aythya marila*), with most individuals observed within 250 m of the Lake Ontario shoreline. High numbers of this species (up to 1740 individuals on January 9, 2018) were observed in January and February 2018, with only one individual observed in March 2018. Similarly, only five individuals of this species were observed in March 2017. These observations appear to be indicative of this species leaving the overwintering area prior to March.

Long-tailed Duck was the second most abundant species in winter 2018, with relatively even distribution between near shore and off-shore locations in January, higher distribution near shore in February and early March and higher distribution offshore in mid-March 2018. As noted previously, this species was also common during winter waterfowl studies in 2017, with generally similar numbers observed in both years.

Common Goldeneye was the third most abundant wintering waterfowl species in 2018, with the species being present throughout the January to March period. The highest numbers of this species were observed on March 15, which is consistent with the 2017 results, when higher numbers were observed in mid-March compared to early March. Numbers observed were slightly

lower in 2018 (maximum of 298 during a single event) compared to 2017 (maximum of 431 during a single event).

Wintering waterfowl typically had little interaction with the adjacent on-shore land during the main overwintering period, which is consistent with expectations, given that overwintering waterfowl in Lake Ontario are typically making use of open-water offshore areas for foraging purposes (e.g., Zebra Mussels; *Dreissena polymorpha*) and loafing purposes, with onshore conditions in winter not being conducive to productive habitat use. During the overwintering period, waterfowl use of lake areas is dynamic, with movements between different mussel beds and open water pockets throughout the wintering period.

Some limited use of the shale pond on the Subject Lands was noted for some waterfowl species in March 2017 (which was prior to commencement of site remediation activities), once ice had left the pond. As noted in **Table 1 (Appendix A)**, a total of five waterfowl species were observed in low numbers on the Shale Pond in March 2017. Waterfowl use of the Shale Pond was not noted in 2018, given that site remediation was occurring at the time.

Inter-Annual Differences in Results

Four waterfowl species that were observed in low numbers in 2017 were not observed in 2018: i.e., American Black Duck (*Anas rubripes*), Ring-necked Duck (*Aythya collaris*), Common Merganser (*Mergus merganser*) and Hooded Merganser (*Lophodytes cucullatus*), while one species (Tundra Swan, *Cygnus columbianus*) was observed in 2018, but not 2017. Given the relatively low numbers of these species observed, the lack of observations of these species during 2018 is not considered to be indicative of a trend associated with decreasing species richness on a year over year basis. Instead, the differences are considered to be a function of normal variability associated with the temporal nature of the type of monitoring study conducted as well as natural variability in bird numbers and species on a daily and annual basis throughout the wintering period.

2017 & 2018 Non-Waterfowl Observations

The focus of this survey was on waterfowl, given that globally significant concentrations of waterfowl are known to overwinter at the western end of Lake Ontario. However, a number of incidental (non-waterfowl) bird species were observed in 2017 and 2018. None are designated as species at risk and all are considered to be secure (S5 or S5B), apparently secure (S4 or S4B) or non-native (SNA) in Ontario, with the exception of Red-necked Grebe (*Podiceps grisegena*), designated as an S3B species, which was observed on one occasion in March 2017. The highest numbers of incidentals were observed on March 21, 2017 although substantially lower numbers were observed 10 days later on March 31, 2017. Early to mid-March incidental observations in 2018 are generally consistent in terms of number and species, with observations in early March 2017.

Analysis and Potential Implications of Development

The area of Lake Ontario near the Port Credit West Village Subject Lands is part of the West End of Lake Ontario Important Bird Area (IBA) ON022, which encompasses the Lake Ontario shoreline up to 5 km offshore, generally running from Port Credit around the western end of the Lake to the

mouth of the Niagara River. The area has been identified as an IBA on the basis of the globally significant congregatory waterfowl concentrations. Through the late winter and early spring, congregations of waterfowl, primarily diving ducks, can number in the thousands to tens of thousands of individuals (Bird Studies Canada undated). The most abundant species present typically include Greater Scaup, White-winged Scoter (*Melanitta deglandi*), and Long-tailed Duck. Bird Studies Canada (undated) indicates that these concentrations, which have gathered annually since around 1990, are likely drawn by the Zebra Mussel and Quagga Mussel (*D. bugensis*) concentrations in shallow water (less than 20 m deep), which provide a significant source of forage for these diving species. The results of the 2017 and 2018 wintering waterfowl studies are consistent with the description of waterfowl use of the West End of Lake Ontario IBA, with relatively high numbers of Greater Scaup and Long-tailed Duck observed.

The proposed Port Credit West Village development is not anticipated to have any direct impacts on Lake Ontario, therefore, no direct impacts on wintering waterfowl habitat are anticipated.

Construction of the proposed development, particularly the buildings in closest proximity to the lake, may result in temporarily increased noise levels at times during the overwintering period. In general, this is not anticipated to have any measurable negative effects on overwintering use of the adjacent offshore portions of the lake, given that waterfowl are primarily food driven during this period, and are generally tolerant of urban activity on the adjacent shorelands. However, waterfowl may selectively use the nearshore area adjacent to the Subject Lands for foraging at points in construction when disturbance and/or noise levels are lower. Foraging areas further offshore, or nearby areas providing similar habitat conditions may be used when construction noise levels are higher. However, overall, no negative impacts on wintering waterfowl are anticipated due to any minor temporary disruption due to higher noise levels during the construction period.

The proposed Port Credit West Village development will result in substantial change to the character of the majority of the Subject Lands (i.e., transformation of a naturalized brownfield site to an urban area). In Savanta's experience, wintering waterfowl concentrations in the western end of Lake Ontario use both naturalized and highly urbanized shorelines, so overwintering use is not overly dependent on adjacent shoreline land uses. Based on these observations, the presence of the proposed development is not anticipated to negatively impact wintering waterfowl use of adjacent portions of Lake Ontario. Further, the proposed waterfront park will provide a vegetated buffer (with a minimum width of approximately 50 m from the adjacent urbanized areas), which will further mitigate any effects on offshore wintering waterfowl use of the area by buffering noise and ensuring taller buildings are set back from the water's edge. Overall, no long-term impacts on offshore wintering waterfowl use of the adjacent portions of Lake Ontario are anticipated to occur due to the proposed development.

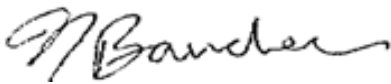
Overwintering waterfowl typically migrate over open-water portions of the lake, as opposed to movements associated with the shoreline or inland areas, and therefore, negative impacts on wintering waterfowl movements aren't anticipated to occur as a result of the proposed development. However, the proposed enhancements to the migratory corridor function of the southern end of the Subject Lands noted in the EIS are anticipated to result in an overall benefit to some other species of migratory birds and insects.

Waterfowl are typically diurnal migrators and are not generally subject to the same mortality concerns associated with buildings as other species that migrate at night. Regardless, bird friendly design is recommended for the buildings on the Subject Lands to minimize potential impacts on migratory birds.

Savanta understands that a water feature could potentially be constructed within the waterfront park area on the Subject Lands (if desired by the City as part of park programming). This feature may promote some late winter (e.g., March) use by waterfowl that have overwintered in adjacent areas of Lake Ontario, similar to the function of the Shale Pond area in 2017. However, given the anticipated level of anthropogenic disturbance in the area, such use is anticipated to be generally restricted to species tolerant of urban interactions. Opportunities to enhance the water feature for waterfowl or shoreline birds (i.e., sandpiper species, Killdeer, etc.), if desired by the City and CVC, should be considered during detailed design of the park and water feature.

Overall, the proposed Port Credit West Village Development is not anticipated to have any significant negative impact on the concentrations of wintering waterfowl known to use adjacent areas of Lake Ontario.

Yours truly,
SAVANTA INC.



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Attachment (1)

- Appendix A – Wintering Waterfowl Survey Results

Common Name	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	COSSARO (MNRF)	COSEWIC (Federal)	Location	1-Mar-17	12-Mar-17	21-Mar-17	31-Mar-17	9-Jan-18	25-Jan-18	14-Feb-18	1-Mar-18	15-Mar-18
Brant	<i>Branta bernicla</i>	S4N	G5												
Canada Goose	<i>Branta canadensis</i>	S5	G5				32	6	66	13	7	16	18	4	4
Mute Swan	<i>Cygnus olor</i>	SNA	G5				2	2	1	1	2	1		4	1
Trumpeter Swan	<i>Cygnus buccinator</i>	S4	G4					1						1	
Tundra Swan	<i>Cygnus columbianus</i>	S4	G5			Flyover						4			
Gadwall	<i>Anas strepera</i>	S4	G5			<250 m	8				1				
						>250 m					4				
						Shale Pond				3					
American Black Duck	<i>Anas rubripes</i>	S4	G5			<250 m	10	2	4						
						Shale Pond	6		2	2					
Mallard	<i>Anas platyrhynchos</i>	S5B	G5			<200 m	10	5	4	6	2				2
						Shale Pond	4		2						
Ring-necked Duck	<i>Aythya collaris</i>	S5	G5			<200 m				2					
Greater Scaup	<i>Aythya marila</i>	S4	G5			<200 m	3								
						>200 m		2							
						>250 m					508	42			
						<250 m					1232	800	1180	1	
Lesser Scaup	<i>Aythya affinis</i>	S4	G5			>200 m									
White-winged Scoter	<i>Melanitta fusca</i>	S4B,S4N	G5			<200 m	19	36	35				35		
						>200 m		9			38	6			
						<250 m								35	
						>250 m								5	2
						>500 m	17								
Long-tailed Duck	<i>Clangula hyemalis</i>	S3B	G5			<200 m	51	111	130	33	122	90	210	145	17
						>200 m		230	120	3	140	80	50	90	260
						>500 m	29								
Bufflehead	<i>Bucephala albeola</i>	S4	G5			<200 m	45	23	45	65	7	14	2	7	22
						>200 m		52							35
Common Goldeneye	<i>Bucephala clangula</i>	S5	G5			<200 m	75	37	340	45	110	39	45	74	18
						>200 m		394	85		21	20		60	280
						>500 m	30								
Hooded Merganser	<i>Lophodytes cucullatus</i>	S5B,S5N	G5			<200 m		2							
						Shale Pond	2			2					
Common Merganser	<i>Mergus merganser</i>	S5B,S5N	G5			<200 m			2						
Red-Breasted Merganser	<i>Mergus serrator</i>	S4B,S5N	G5			<200 m	4	6	35			5	1	6	7
						>200 m		3	50		2	4		6	11
Rock Pigeon	<i>Columba livia</i>	SNA	G5						17						
Mourning Dove	<i>Zenaida macroura</i>	S5	G5				1	1	5				1		
Killdeer	<i>Charadrius vociferus</i>	S5B, S5N	G5							4					
Gull sp.							15								
Ring-billed Gull	<i>Larus delawarensis</i>	S5B,S4N	G5				50	35	15	26			6	6	23
Herring Gull	<i>Larus argentatus</i>	S5B,S5N	G5					1	1	5	3	7	9	5	4

Common Name	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	COSSARO (MNRF)	COSEWIC (Federal)	Location	1-Mar-17	12-Mar-17	21-Mar-17	31-Mar-17	9-Jan-18	25-Jan-18	14-Feb-18	1-Mar-18	15-Mar-18
Common Loon	<i>Gavia immer</i>	S5B,S5N	G5							2					
Pied-billed Grebe	<i>Podilymbus podiceps</i>	S4B,S4N	G5			Shale Pond				1					
Red-necked Grebe	<i>Podiceps grisegena</i>	S3B,S4N	G5			<200 m			110						
						>200 m			35					1	
Western/Clark's Grebe	<i>Aechmophorus occidentalis</i>		G5			>200 m			1						
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	S5B	G5			<200 m				1					
Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5	G5							1		1			
Downy Woodpecker	<i>Picoides pubescens</i>	S5	G5				1	1	1						1
Hairy Woodpecker	<i>Picoides villosus</i>	S5	G5												2
American Kestrel	<i>Falco sparverius</i>	S4	G5				1								
Northern Shrike	<i>Lanius excubitor</i>	SNA	G5									1			1
Blue Jay	<i>Cyanocitta cristata</i>	S5	G5						2	1					
American Crow	<i>Corvus brachyrhynchos</i>	S5B	G5				1		67	3				2	
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	G5				4	2	4			3		1	
Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	G5												
White-breasted Nuthatch	<i>Sitta carolinensis</i>	S5	G5						1						1
American Robin	<i>Turdus migratorius</i>	S5B	G5				7		12	7	2				2
European Starling	<i>Sturnus vulgaris</i>	SNA	G5				5		16	9					
House Sparrow	<i>Passer domesticus</i>	SNA	G5				1		4	2				1	
House Finch	<i>Carpodacus mexicanus</i>	SNA	G5						2	2					
American Goldfinch	<i>Spinus tristis</i>	S5B	G5						9	1				1	1
American Tree Sparrow	<i>Spizella arborea</i>	S4B	G5				1		6					1	1
Song Sparrow	<i>Melospiza melodia</i>	S5B	G5						3						2
Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	G5						3						
Northern Cardinal	<i>Cardinalis cardinalis</i>	S5	G5				1	1	3					1	3
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S4	G5				3	3	68	11				6	4
Common Grackle	<i>Quiscalus quiscula</i>	S5B	G5						151						
Brown-headed Cowbird	<i>Molothrus ater</i>	S4B	G5						10						

Species Code: consistent with the American Ornithologists' Union. 2012. Species 4-Letter-Codes. Accessed May 25, 2012.

Available online: www.birdsontario.org/atlas/codes.jsp?lang=en&pg=species/

Location: refers to the location of the observation with respect to offshore distance from the Lake Ontario shoreline. Use of the Shale Pond on the Subject Lands is also noted where appropriate

S ranks: Provincial ranks are from the Natural Heritage Information Centre; S1 (critically imperiled), S2 (imperiled), S3 (vulnerable), S4 (apparently secure), S5 (secure); ranks were updated using NHIC species list October 2013

G ranks: National ranks are from the Natural Heritage Information Centre; G1 (extremely rare), G2 (very rare), G3 (rare to uncommon), G4 (common), G5 (very common); ranks were updated using NHIC species list October 2013

COSSARO (MNRF): Ontario Species at Risk as listed by the Committee on the Status of Species at Risk in Ontario (from NHIC Table October 2013); END - Endangered, THR - Threatened, SC - Special Concern, NAR - Not at Risk; Candidate Species at Risk to be assessed by COSSARO are listed online: www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/STDPROD_068707.html/.

COSEWIC: Assessed Species at Risk at the national level as listed by the Committee on the Status of Endangered Wildlife in Canada (from NHIC Table October 2013); END - Endangered, THR - Threatened, SC - Special Concern, NAR - Not at Risk; Candidate Species at Risk to be assessed by COSEWIC are listed online: www.cosewic.gc.ca/enq/sct3/index_e.cfm/.