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Dear Shaun:

**Re: Re-evaluation of the Kizell Drain Wetland Complex**

On behalf of the City of Ottawa, I am pleased to submit to the Ontario Ministry of Natural Resources a re-evaluation of the Kizell Drain Wetland. The Kizell Drain Wetland was originally evaluated in 1994, at which time it was assessed as a non-provincially significant wetland complex. Since then, the landscape context of the wetland has been changed greatly by urban development. In addition, at least one animal species known to exist in the wetland has been designated as “threatened”: Blanding’s Turtle. These changes suggested to the City that a re-evaluation of the wetland would likely result in the wetland qualifying as provincially significant.

The status of the Kizell Wetland is important because the City of Ottawa has begun a Class Environmental Assessment Master Plan to identify options for stormwater management on development lands to the north of the wetland. A much earlier Master Drainage Plan for the area – the Marchwood – Lakeside Master Drainage Plan (Cumming Cockburn and Associates Inc. 1984) – proposed the diversion of stormwater flows in the proposed development from the Shirley’s Brook subwatershed to the Kizell Drain/Watt’s Creek subwatershed. The Master Drainage Plan proposed to use the Kizell Wetland as a stormwater management pond, including the construction of berms to raise normal water levels by approximately 1 m and to eliminate existing drainage west across the First Line Road Alignment into the Carp River watershed. However, the subsequent Shirley’s Brook – Watt’s Creek Subwatershed Study (Dillon 1999) recommended retention of the existing subwatershed boundaries. The current environmental assessment will revisit these analyses and identify a preferred stormwater management solution. The status of the wetland is relevant to this study, because the Provincial Policy Statement and the City of Ottawa Official Plan prohibit development and site alteration within Provincially Significant Wetlands.

The attached wetland evaluation and scoring record show that the Kizell Wetland qualifies as provincially significant on basis of two criteria: (1) a score of over 250 points in the special features component of the evaluation, based on the presence of a provincially endangered species (Blanding’s Turtle); (2) an overall score of exactly 600 points (exclusive of the score

for Blanding's Turtle), resulting primarily from high scores in the social and hydrology components of the evaluation.

My re-evaluation of the Kizell Wetland consisted mainly of a desktop review, based upon secondary information. However, I did conduct fieldwork early in the autumn of 2010 to reassess the wetland boundaries and communities. The re-evaluation also had to reflect the very significant changes in land use and drainage patterns south of the Kizell Wetland since the original evaluation in 1994. In particular, the re-evaluation needed to account for the new stormwater management functions of the Kizell wetland, which have substantially increased its catchment area and provision of ecological services. In addition, the original evaluation included several mistakes, which I have corrected. Finally, I have updated the evaluation and scoring to include the presence of Blanding's Turtle in the wetland.

Several features and decisions of the wetland re-evaluation warrant further explanation.

### *Wetland Boundaries*

I have revised the boundaries of the wetland as follows:

- (a) I have excluded those wetland units lost since 1994 through urban development of the lands to the south of the main Kizell – Beaverpond wetland area;
- (b) I have expanded areas of swamp on the north side of the wetland (communities 4 and 8 in Figure 1);
- (c) I have included new areas of wetland within the floodplain of the Carp River, near the west end of the main Kizell – Beaverpond wetland unit (communities 1, 2 and 3 in Figure 1).

I identified and mapped the expanded areas of communities 4 and 8 in the field using a GPS in early autumn 2010. The expanded areas include several groundwater seepage locations.

Communities 1, 2 and 3 were not included in the 1994 evaluation. However, my field observations in 2010, as well as work on the Terry Fox Drive Environmental Assessment (Dillon 2009, Appendix 1), clearly show that they form a contiguous part of the Kizell Wetland. Although they receive periodic inundation from the Carp River, it is clear that they are maintained primarily by sheet flow from the remainder of the Kizell Wetland to the east. They also provide an important local landscape linkage for wildlife to the Carp River floodplain, which will be intentionally maintained through the placement and design of both wet and dry culverts under Terry Fox Drive (Dillon 2009).

Both the Beaverpond (community 7, Figure 1) and the large marsh west of Goulbourn Forced Road (community 6, Figure 1) have been partially modified to serve as stormwater facilities. Based on my discussions with you, I understand that the policy of the Ministry of Natural Resources with respect to inclusion of stormwater facilities in provincially significant wetlands can be summarized as follow:

- Provincially significant wetlands should not be used as stormwater management facilities.

- Existing stormwater facilities, which originated as man-made structures and have acquired the physical characteristics of wetlands through deliberate design or lack of maintenance, *should not* be included in PSWs.
- Existing stormwater facilities, which originated as natural features and which have retained the physical characteristics of wetlands, *can be* included in PSWs.

The Beaverpond and the western marsh (communities 6 and 7, Figure 1) both originated as natural features. They occupy a distinct, topographic depression, and they are supported by a number of springs and areas of groundwater seepage. Historical aerial photography shows them as existing in this location, and in roughly the same form, for more than forty years. Soil mapping shows the presence of organic soils under both features, indicative of long-term wetland conditions. The past modifications to the wetlands for stormwater management purposes have not significantly altered their form or function. In short, there is no ecological reason or policy reason to exclude them from a provincially significant wetland.

### *Biological Component*

The score for the biological component has dropped slightly in the re-evaluation, from 102 points to 94 points. The drop in score results mainly from lower scores for interspersion and open water type. The lower score for interspersion reflects the elimination of three of the four original wetland units, and the elongate shape of the remaining wetland. The lower score for open water type appears to reflect a general closure of the marsh vegetation, possibly as part of a long-term trend resulting from water level controls and higher nutrient inputs.

In the re-evaluation, I have updated and simplified the wetland community mapping, merging several of the communities identified in the 1994 evaluation, but expanding the number of vegetation forms. Community identification and mapping is always somewhat subjective, reflecting the tendencies of different wetland evaluators to “lump” or “split” communities. In this case, I concluded from direct observation and review of aerial photography that the large marsh areas of the Kizell and Beaverpond had become more homogenous over the past 17 years, possibly in response to increased water level control. I have less confidence in my numeration of the vegetation forms in each wetland, which I determined primarily through examination of the City’s aerial photography and “birds-eye” imagery from Bing Maps. Although I was able to verify the vegetation forms in some communities in the field, I had insufficient time to survey them all in detail. However, any changes in the number of forms in each community as a result of direct field survey would be small, and their impact on the scoring – up or down – would be minimal.

I have identified all of the wetland communities as palustrine. It could be argued that the easternmost wetland community, locally known as the Beaverpond (community 7, Figure 1) is lacustrine, because of the adjacent open water. However, the Beaverpond was partially modified for use as a stormwater pond many years ago, and it lacks many of the characteristics and ecological values associated with lacustrine environments. Functionally, the Beaverpond most resembles a palustrine feature.

### *Social Component*

The Kizell Wetland scores much higher in the Social Component in this re-evaluation than it did in the original evaluation: 201 points, up from 159 points. This increase results from higher scores in several criteria, but in particular, ownership and aboriginal values.

Ownership of the Kizell Wetland has changed dramatically since 1994, when all of the wetland was privately owned. As part of the development approvals for the KNL lands, all of the Kizell Wetland area has been conveyed to the City of Ottawa or is destined for conveyance to the City.

Unlike the 1994 evaluation, this re-evaluation includes a score of 30 points for aboriginal values. This score reflects the recent expressions of interest in the South March Highlands by the Algonquins of Ontario. During recent discussions and negotiations over the development of the KNL Phase 9 lands north of the Beaverpond, the Algonquins of Ontario and West Quebec both identified the Beaverpond area and the greater area of the South March Highlands as having historical and cultural significance to their communities.

### *Hydrological Component*

The score for the hydrological component increased only 6 points between the 1994 evaluation and this re-evaluation, despite a very large increase in the catchment area of the wetland. However, the minimal increase was due in part to a mistake in section 3.2 of the 1994 evaluation, which resulted in too high a score for water quality improvement.

The current scoring reflects the dramatic build-out of residential development on the south side of the Kizell Wetland, and the use of the Kizell Wetland for the management of stormwater from the new community. Chiefly as a result of redirection of stormwater flows from the new development, the catchment area for the Kizell wetland has increased from 159 ha to 417 ha (Figure 4, Appendix 2). Almost of this increased area consists of urban development, thereby increasing the importance of the Kizell wetland for water quality improvement.

The new catchment area does not reflect the future development of the KNL Phase 7, 8 and 9 lands north of the Kizell Wetland. Although portions of the KNL Phase 9 development will be directed to the Beaverpond, the preferred option for stormwater management in the remainder of these developments must still be determined through the planned environmental assessment. Consequently, the catchment area north of the Kizell wetland was based upon existing catchment area mapping and topographic mapping.

The new catchment area excludes the majority of the “Richardson Ridge” development property, which lies south of the Kizell Wetland between First Line Road and Terry Fox Drive. Drainage from this residential development, currently in site preparation, will be directed to a planned stormwater management pond, before discharging to the Carp River floodplain at or near the bottom of the Kizell Wetland.

### *Special Features*

The score for the special features component has increased from 106 points in the 1994 evaluation to 250 points (the maximum allowed) in the current re-evaluation. Without the upper limit, the actual score in the evaluation would have been 334 points.

The score in the original 1994 evaluation was significantly higher than it should have been, due to mistakes in the scoring for section 4.2.6, Fish Habitat.

The current score of 250 points results primarily from the presence in the wetland of breeding habitat for Blanding's Turtle, which is designated as "threatened" by both the Provincial and Federal Governments. The presence of Blanding's Turtle throughout the South March Highlands has been substantiated by numerous observations, but especially through the Terry Fox Drive Environmental Assessment and subsequent Blanding's Turtle monitoring study (Dillon 2009, Dillon 2011). The presence of Blanding's Turtle in the Kizell Wetland has been documented on at least two separate occasions (Brunton 2000, ESG 2002). In addition, the first year report of the City's Terry Fox Drive Blanding's Turtle Study (Dillon 2011) includes a habitat suitability analysis that rates the main marsh areas of the Kizell Wetland (communities 6 and 7) as moderate to moderately high quality habitat for Blanding's Turtle (ratings of 0.6 to 0.8 on a index from 0.1 to 1.0). Therefore, on the basis of both historical observations and current habitat suitability, the Kizell wetland must be considered as breeding habitat for Blanding's Turtle.

Without the score for Blanding's Turtle, the Kizell Wetland would have scored 83 points for special features.

### *The Basis for Provincial Significance*

On the basis of this re-evaluation, the Kizell Wetland qualifies as provincially significant, both on the basis of a score of 250 points in the special features component and for an overall score of more than 600 points. In fact, in the current re-evaluation, the Kizell Wetland would still qualify as provincially significant without the presence of Blanding's Turtle, with a score of exactly 600 points. I regard the latter conclusion as significant from the perspective of land use policy, because it demonstrates that a PSW designation is necessary to reflect the full range of values and services of the Kizell Wetland. It is sometimes argued that small, otherwise non-significant wetlands should be designated as PSWs due to the presence of one or more endangered or threatened species. However, in those cases, where a wetland would not otherwise come close to qualifying for provincial significance, a more appropriate planning approach would be to protect the features and functions of the wetland through designation as significant habitat for an endangered or threatened species. At first, such a distinction might not seem important, because PSWs and significant habitat endangered and threatened species enjoy the same level of protection under the Provincial Policy Statement. However, when it comes to an evaluation of the impacts of development or site alteration on lands adjacent to PSWs or significant habitat, the distinction could lead to different conclusions about what activities are acceptable, what mitigation measures might be required, and what setbacks might be necessary.

In this instance, the Kizell Wetland is significant (subject to MNR confirmation) both as a PSW *and* as significant habitat for a provincially threatened species.

*Relevancy to the Shirley's Brook – Watt's Creek Stormwater Study*

In my opinion, confirmation of the Kizell Wetland as a provincially significant wetland by the Ministry of Natural Resources should preclude the site alterations proposed within the wetland by the 1984 Marchwood – Lakeside Master Drainage Plan. Under the Provincial Policy Statement and the City of Ottawa Official Plan, development and site alteration is not permitted in provincially significant wetlands. The construction of berms within the Kizell Wetland, as proposed in the 1984 MDP, would raise permanent water levels in significant portion of the wetland and eliminate drainage to the portions of the wetland west of the First Line Road Alignment. These actions would alter the hydrology of the wetland, resulting in further degradation of its general ecological condition, as well as unpredictable changes to its vegetation communities and its wildlife habitat characteristics. In particular, these changes would threaten the suitability of the wetland as habitat for Blanding's Turtle.

Although the Class EA Master Plan process is not subject to the Provincial Policy Statement, the designation of the Kizell Wetland as provincially significant would certainly weigh heavily in any decisions, particularly as the need for the proposed stormwater diversion arises from a development proposal.

*Next Steps*

The City of Ottawa is providing copies of this wetland re-evaluation and covering letter to several adjacent property owners and interested parties for their review, with the reminder that the mapping, scoring and conclusions are subject to confirmation by the Ministry of Natural Resources. We anticipate that some of them may wish to provide you with their own comments and recommendations. Should the MNR confirm that the Kizell Wetland is provincially significant, then the City of Ottawa intends to apply the appropriate Provincial Policies and Official Plan policies in any future planning decisions affecting the wetland or the adjacent lands.

If you have any questions regarding the wetland evaluation, then please do not hesitate to contact me.

Respectfully,

Nicholas Stow, BA, BSc, PhD.  
Senior Planner  
City of Ottawa

## *References*

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