

# Memorandum

**To:** Lisa-Beth Bulford, Lake Simcoe Region Conservation Authority

Shauna Fernandes, Lake Simcoe Region Conservation Authority

**From:** Kim Baker, Carolyn Glass and Don Fraser

**Date:** September 2, 2015

**Ref:** 213346

**Re:** Response to LSRCA Comments - Aurora Highlands Comments (Pond and Watercourse)

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We have prepared this letter in consultation with SCS Consulting Group in response to LSRCA's comment # 1 (dated April 10, 2015) relating to the proposed watercourse realignment of Tannery Creek adjacent the proposed High Density Block 224.

As outlined in the comprehensive response letter prepared by the Highland Gate Developments Inc. consulting team, as submitted by MGP and dated August 11, 2015, the proposed works include the removal of the existing dam structure and replacement of the existing upstream pond with a new naturalized channel and enhanced floodplain areas from Brookland Avenue to Golf Links Drive.

The realignment of the creek as proposed will permit the upstream pond to be taken offline, providing fish passage and enhancement and restoration to this portion of Tannery Creek. The removal of online ponds is consistent with section 9.2.2 of the LSRCA's Guidelines for the Implementation of Ontario Regulation 179/06, which encourages the removal of online ponds and restoration of the site.

The proposed works will provide the following benefits.

1) Removal of the existing dam structure will accomplish the following:

**a. Allow migration of fish**

Removal of the weir structure will provide an opportunity for fish passage to upstream reaches that currently cannot be accessed due to the existing obstruction.

**b. Decrease flow velocity through dam area and downstream reach**

We understand there is currently an issue with the velocity of flow over the weir and potential for erosion of the downstream reach of the creek. Removal of the weir will create an opportunity to decrease the velocity of flows through the dam structure and downstream channel reach, thereby decreasing the potential for erosive flows.

2) Replacement of the existing pond and enhancement and restoration to this portion of Tannery Creek will accomplish the following:

**a. Improve overall fish habitat**

Online ponds can provide fish habitat; however, they are more suited for warmwater, non-native fish (e.g., goldfish). By removing the pond and creating a natural channel, habitat is improved for native species found within the current downstream system. The weir at the downstream end of the online pond is a fish migration barrier. It is proposed through the restoration initiative that this barrier be removed to allow for migration of fish to the uppermost reaches of Tannery Creek. In total, approximately 160 m of fish habitat will be created for the resident native fish population in Tannery Creek, opening up approximately 400 m of additional habitat in the upstream reach, south of the subject property.

**b. Decrease in the amount of standing water**

Eliminating open water will increase safety and decrease potential for mosquito breeding habitat. Standing water will be confined to offline pocket wetlands.

**c. Provide an opportunity to improve the riparian vegetation community**

Riparian areas will be planted with native woody and herbaceous species to increase diversification within the vegetation community and provide water filtering and polishing for stormwater runoff to improve overall water quality. Offline wetlands can be created to provide flood storage, and provide habitat for local wildlife, including the potential for breeding amphibians.

**d. Facilitate the removal of accumulated sediment**

The sediment that has accumulated within the pond will be removed as part of the channelization. This will improve the aesthetics of the area as well as the water quality within the newly created channel as well as downstream.

**e. Potentially improve flooding hazard**

With the removal of the accumulated sediment in the existing pond and creation of the natural channel, an opportunity will be created to provide an increase in the available storage volume within the floodplain which can result in flood hazard benefits (i.e. a potential reduction in flood elevations).

**f. Potentially decrease downstream water temperature**

Online ponds have the potential to warm downstream water, as the large surface area of the pond provides additional exposure to the sun. By removing the ponds, it is likely that temperatures within the downstream reaches can be expected to decrease, providing a more stable thermal regime for the existing fish community.

**g. Improve community connectivity**

The removal of the pond will allow for the extension of the proposed off-road trail system from Golf Links Drive through to Brookland Ave. The human health benefits of spending time in naturalized landscapes are well documented.

- 3) Allow for opportunities for further enhancement and restoration of the existing channel and its riparian area adjacent to Block 224 through establishing diversified native vegetation, which will in turn provide habitat for urban wildlife.
- 4) Provide a continuous and cohesive plan to achieve the benefits outlined above.