

Moncton City Council
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September 10, 2020

RE: Proposed rezoning of 211 Maple Road (PID 70543632) from P1 (Community Use Zone) and P2 (Open Space and Conservation Zone) to SC (Suburban Commercial Zone) by Skipper Jack's Maritime Restaurant on July 20, 2020

Dear City Council of Moncton,

Our organization is concerned with the proposed development project by Skipper Jack's Maritime Restaurant on the ecological integrity of Rabbit Brook. Historically, Rabbit Brook was considered as a prime habitat for cold-water fish species, such as Brook Trout (*Salvelinus fontinalis*) and Atlantic salmon (*Salmo salar*), because it is fed by groundwater from a bog and therefore remains cold all year, and had little streambed sedimentation. However, Rabbit Brook is currently under threat due to urban land-use which has significantly altered its geomorphology and resulted in a reduction of its capacity to provide food and habitat for local fish and wildlife populations, protect against floods, filter pollutants, recycle potentially-harmful nutrients, maintain the quality and supply of drinking water and recharge underground aquifers. Urban streams are part of the city's natural heritage because they provide ecological services and should be protected. The City of Moncton's Integrated Community Sustainability Plan with the goal of reducing our environmental footprint is a step-forward for the protection and improvement of urban streams, and this proposed developmental project would go against some of the plan's policies, such as reducing the amount of stormwater runoff by creating zero-increase development, ensuring stream buffers are respected, including recreation/ trail developments, and control/protect existing water resources.

Since the 1970s, infilling, including the infilling of the small bog where the source for Rabbit Brook began in 1995, pipping, installation of storm sewer outlets, inadequate culvert installation, and streambed modification have changed the brook's substrate which is now made up mainly of fine sediments and is knee-deep in certain areas. Rabbit Brook is approximately 3 kilometers in length and infilling and pipping has impacted close to 1 kilometer of the brook and is causing sedimentation, as it changes the hydrodynamics of the brook, and it turns this accelerates the water velocity during rain events or snow melting, leading to unnatural stream bank scouring. Our long-term water quality monitoring program shows that these infrastructures have also contributed to higher than normal specific conductivity, salinity, total dissolved solids, and levels of E.coli and fecal coliforms. Levels of E.coli and fecal coliforms are routinely above the recommended guidelines for wildlife, including recreational use by humans.

Other Canadian provinces have implemented policies to protect and improve their watercourses. The province of Ontario, for example, have mapped floodplains in the past few years and conservation authorities have a legal mandate to ensure that development does not occur in areas that are susceptible to flooding and erosion, and is actively removing filling from floodplains. Infilling of Rabbit brook's floodplain from the proposed developmental project will further impact the hydrodynamics of the brook and the capacity of the stream to capture stormwater runoff, and the proposed addition of trees on the property will not play a significant role to offset this loss. The City of Moncton should follow in the steps of other Canadian provinces for the protection and

improvement of watercourses, and not allow development in urban streams floodplains which would further reduce our watercourses capacity to provide ecological services.

Furthermore, culverts can change water velocity, river hydrology, and often create barriers to fish migrating upstream due to debris build up, high water velocity, shallow water, and the presence of waterfall into or out of culverts. This becomes a problem when culverts prevent fish from migrating upstream to spawning grounds or when coldwater species need to access coldwater habitats in upper portions of coldwater streams when the water temperature rises in summer months and will result in the loss of aquatic species populations. Over the past five years, our organization completed over 285 culvert assessments and our results demonstrate that 72.6% of these crossings are barriers to fish passage which is consistent with what other organizations from Canada have found. Although cost-effective in comparison to other road-watercourse crossings (e.g. bridges), the environmental impact of these barrier culverts equates to over 500 kilometres of aquatic habitat that is lost or inaccessible to migrating fish species within the Petitcodiac watershed. There is already a 50-meter closed-bottom culvert installed under Mapleton road which is currently a barrier to fish migrating upstream because of its length and the lack of baffles resulting in the loss of 500 meters of upstream habitat. A closed-bottom culvert of more than 20 meters in length is considered a barrier to fish passage because many fish species can only swim for short periods of time before they need areas to rest while swimming against the water current. Culverts of over 20 meters in length should have baffles installed in them to provide resting areas for fish. The addition of a 58-meter closed-bottom culvert with baffles should only be considered if baffles are installed in the existing 50-meter culvert on Mapleton road. The installation of open-bottom culverts or an embedded closed-bottom culverts are also being recommended over closed-bottom culverts by some provincial governments in Canada (i.e. Alberta, British Columbia and Ontario) because it provides natural resting areas for fish and allow for a more natural water flow.

Despite signs of habitat degradation that resulted in aquatic species loss, such as the endangered inner Bay of Fundy Atlantic salmon, the water temperature and flow of Rabbit brook remains strong due to the current overhanging vegetation. Therefore, the potential for watercourse improvement is high. Your decisions regarding the proposed development project will play a major role in the future of this urban stream and other urban streams by either contributing to the destruction or the protection of the city's natural heritage and that of future generations.

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