

## Memorandum

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**Date:** January 22, 2020  
**To:** Leanne Bilodeau, Associate Director Sustainability – UBCO Campus Planning and Development  
**From:** Carmen Chelick, M.Sc., B.I.T., and Mary Ann Olson-Russello, M.Sc., R.P.Bio.  
**File:** 19-3150  
**Subject:** Lower Innovation Precinct (LIP) North Multi-Use Trail Planning Meeting

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### 1.0 BACKGROUND

Ecoscape Environmental Consultants Ltd. (Ecoscape) was retained by Campus Planning and Development at the University of British Columbia Okanagan (UBCO) to provide environmental consulting services for the proposed Lower Innovation Precinct (LIP) North Multi-Use Trail. Ecoscape personnel, Carmen Chelick and Mary Ann Olson-Russello, Natural Resource Biologists with Ecoscape attended a site meeting on January 16, 2020 to discuss the scope of work and potential environmental impacts associated with the project. Other meeting attendees included Leanne Bilodeau (UBCO Campus Planning and Development), Ted Sanstra (UBCO Campus Planning and Development), Roger Bizzotto (UBCO Facilities Management) and Thomas Simkins (Urban Systems).

Due to the heavy snow coverage at the time of the site meeting, it was not possible to document the extent of native vegetation or potential for wildlife habitat/use within the disturbance footprint of the preliminary alignment of the proposed Trail (Figure 1). In addition, it was not possible to accurately evaluate the extent of the proposed trail encroachment into an existing storm ditch which is known to provide habitat for the BC Blue-listed, COSEWIC<sup>1</sup> Threatened, SARA<sup>2</sup> Threatened Great Basin Spadefoot (*Spea intermontana*). Given these limitations, this brief memo provides preliminary design considerations and mitigation procedures that should be integrated into the detailed design and planning of the LIP North Multi-Use Trail. A more comprehensive environmental impact assessment and more detailed mitigation measures will be provided after snowmelt, when the area can be properly assessed.

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<sup>1</sup> Committee on the Status of Endangered Wildlife in Canada (COSEWIC)

<sup>2</sup> *Species at Risk Act* (SARA)

## 2.0 PRELIMINARY MITIGATION MEASURES

The BC Ministry of Environment recently provided an update to the procedures and policy for mitigating impacts on environmental values (MOE, 2014). The Environmental Mitigation Policy outlines the mitigation hierarchy as: 1) avoid, 2) minimize, 3) restore on-site, and 4) offset impacts. All feasible mitigation measures should be considered during all stages of planning for this project and applied at one level before moving to the next and considerations should be documented in detailed mitigation plans (MOE, 2014).

### 2.1 *Culvert Design*

An existing culvert directs stormwater flows from the areas north and west of the project area into the stormwater ditch on the north end of parking lot H. This seasonally wetted, ephemeral ditch has been documented to provide important habitat for Great Basin Spadefoot tadpoles during their breeding season (i.e. May to July) (Environment & Climate Change Canada, 2017). Depending on the final design of the trail, this culvert may be moved, altered or replaced with an alternative structure. Regardless of the final design, it is important that the Trail alignment does not result in significant changes to flows and/or water availability in the ditch, which could result in a loss of Great Basin Spadefoot habitat. Avoiding changes to stormwater flows within this ditch is therefore the best way to mitigate impacts to Great Basin Spadefoot associated with changes to the existing culvert.

### 2.2 *Work Around the Ditch and Ditch Maintenance*

In previous years, Spadefoot tadpoles have been documented in the middle and lower (eastern) sections of the ditch, as water tends to pool more in these sections due to the lower elevation. However, the availability of water within the ditch is likely to vary on an annual basis dependent on weather conditions (i.e. rainfall, snowmelt, temperatures, etc.). While the alignment of the trail and the associated disturbance footprint have not been finalized, there is a possibility that the proposed works may result in some portions of the ditch being infilled. Since the extent of Spadefoot breeding habitat within the ditch is variable, any infilling of the ditch and impacts of construction surrounding the ditch should be avoided as a first-priority, and then minimized if complete avoidance is not possible. Based on previous observations, the upper section of the ditch (western end) is the least likely section to maintain open water habitat for Spadefoot. Therefore, if infilling of the ditch is unavoidable, infilling should be focused on the upper or western section of the ditch where impacts to Spadefoot habitat may be minimal.

Ecoscope understands that emergent vegetation within the ditch is removed on a regular basis by UBCO maintenance staff. Continual management of emergent vegetation in the ditch should continue in order to ensure adequate open water habitat for Great Basin Spadefoot. However, timing of maintenance should be avoided when tadpoles are present.



### **2.3 Hill Excavation and Amphibian Salvage**

Great Basin Spadefoots require soft, deep, loose soils in order to burrow below the frost line during the winter (Environment & Climate Change Canada, 2017). The hill on the west side of the parking lot may provide suitable overwintering and burrowing habitat for Spadefoot. Although the trail alignment has not been finalized, the current alignment would result in the need to excavate the hill along the west side of the parking lot. If excavation along this hill is unavoidable, Ecoscape recommends that an environmental monitor is on-site during the excavation to monitor the work and to carry out salvages of Spadefoot if they are encountered during the excavation. The purpose of environmental monitoring is to ensure that impacts to the environment are avoided and minimized, identified mitigation measures are implemented, and mitigation measures are effective at meeting the mitigation commitment and goals (MOE 2014b).

### **2.4 Least Risk Timing Window**

Great Basin Spadefoots enter hibernation when temperatures start to drop, typically around October, and emerge from hibernation and move into ephemeral waterbodies in March or April, triggered by warm weather and wet soil (Environment & Climate Change Canada, 2017). If excavation of the hillside and areas surrounding the stormwater ditch occur before Spadefoots emerge in the spring, there is a chance that they can be encountered during excavation, and monitoring should occur in case salvages are required. Any work occurring in the ditch during the breeding season (i.e. May to July) should be avoided to prevent direct harm to Spadefoot tadpoles.

## **3.0 FUTURE WORK**

For Phase II of this project, Ecoscape will complete a site visit in the spring, after snowmelt. The objective of this site visit will be to walk the alignment of the Trail and identify plant species that occur within the disturbance footprint of the proposed work, with a focus on the identification of native plant species with environmental and cultural significance. If plants of environmental or cultural significance are observed, it may be recommended that plants are transplanted to suitable habitats outside of the disturbance footprint. A full environmental impact assessment will be provided to identify the full scope of impacts of the project, provide mitigation measures to minimize the impacts, and provide a restoration plan to compensate for the disturbance and to enhance the establishment of native vegetation to the disturbed area.



#### 4.0 REFERENCES

Environment and Climate Change Canada. 2017. Recovery Strategy for the Great Basin Spadefoot (*Spea intermontana*) in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. 2 parts, 31 pp. + 40 pp.

Ministry of Environment. (MoE). 2014. Policy for Mitigating Impacts on Environmental Values (Environmental Mitigation Policy): Version 1.0. May 13, 2014.

Ministry of Environment. (MoE). 2014b. Procedures for Mitigating Impacts on Environmental Values (Environmental Mitigation Procedures): Version 1.0. May 27, 2014.





