Basic Impact Analysis
(BIA)

Trans-Canada Highway
Rock Slope Reprofiling
2015 Works

Addendum #1

Trans-Canada Highway: Sherbrooke Creek, Lower Sherbrooke Creek, Little Topple and Phyllite Rock Slopes,
Yoho National Park, BC
May 2015

July 2015

This Document is an Addendum to:
❑ Best Management Practice X Basic Impact Analysis
This Addendum includes changes to:
❑ Project Description X Valued Components to be Affected ❑ Effects Analysis X Mitigation Measures ❑ Effect Significance

1. PROJECT TITLE

Rock Slope Reprofiling 2015 Works
Trans-Canada Highway: Sherbrooke Creek, Lower Sherbrooke Creek, Little Topple and Phyllite Rock Slopes.

2. PROJECT LOCATION

Yoho National Park, BC (YNP)

3. PROJECT SITE(S)

The overall Project will occur along the Trans-Canada Highway (TCH), between km 88 to 91 and between km 114 to 128. The 2015 Project works are occurring at four sites. Table 1 below identifies all locations in the overall Project to provide large-scale context, and highlights the areas where work will occur this year (2015). To identify slopes along the highway, the start and end points of existing and proposed slope cuts are provided relative to the eastern park boundary. This station system, provided by McElhanney Consulting (MCE), is measured in kilometres along the road centreline and uses the east gate of Banff National Park as Sta. 0+000.

Table 1: Slope Reference Table

Project (km)	Colloquial Name	Station Start (km)	Station End (km)	Included in 2015 Works?	Approximate Volume (m^3)[1]
88 to 91	Sherbrooke Creek Soil Slope	88+200	88+500		
	Sherbrooke Creek Rock Slope	88+500	89+090	?	161,800 (55,380 in this year's program)
	Lower Sherbrooke Creek Rock Slope	89+090	89+420		15,730
	Upper Dustin's	89+540	89+900		
	Dustin's Slide	89+900	90+150		
	Spiral Tunnels Hill	90+150	90+900		
114 to 128	Through Cut (Left)	114+800	115+120		
	Through Cut (Right)	114+900	115+050		
	Big Topple	115+380	115+580	*	
	Little Topple	115+650	115+860		17,970

Table 1: Slope Reference Table

Project (km)	Colloquial Name	Station Start (km)	Station End (km)	Included in 2015 Works?	Approximate Volume (m^3)[1]
	Mount Vaux	116+150	116+470		
	Lower Mount Vaux	116+910	117+200		
	Mount Vaux	116+470	116+900		
	Leanchoil East	123+100	123+400		
	Phyllite Slope	124+280	124+580	?	43,190
	Western Boundary	125+820	125+940		
*As of April 30, 2015 Big Topple was flagged and logged but no other resloping works will occur at this site in 2015.					
[1]Exact volumes are subject to change as the Rock Cut designs are finalized. Approximate volumes current as of April 20, 2015. Future work may be included in this year's program if schedules permit.					

Additionally, two locations were identified near the project areas to be used for material storage during the 2015 Project.

Table 2: Storage Site Locations, Volumes and Areas

Project (km)	Storage Site Name	Station (km)	Location (UTM, zone 11U)	Approximate Storage Capacity Volume (m^3) based on 2H:1V*	Approximate Footprint (m^2)*
88 to 91	AB/BC Border	82+000	5700586.07 N 549850.58 E	65,000	9,500
114 to 128	Mount Vaux	119+500	5675948.29 N 529622.31 E	Up to 986,000	Up to 80,000
* Numbers based on information available in Tetra Tech EBA's Design Report, *Yoho National Park Trans-Canada Highway – Slope Reprofiling Km 88 To Km 91 And Km 114 To Km 128* as of April 1, 2015. Exact numbers subject to change with design finalization.					

4. PROPONENT

Parks Canada Agency: Ryan Syme, P.Eng. Engineer II – Highway Engineering Services

BIA Author: Tetra Tech EBA Inc.

5. PROPONENT CONTACT INFORMATION

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6. PROJECT DATES

Work for the Project is expected to occur over the summer and fall of 2015 and will be limited by snowfall.

Planned commencement for 2015 work: 2015-08-05
Planned completion for 2015 work: 2015-10-31

Tetra Tech EBA Inc. (Tetra Tech EBA) notes that these works are part of a larger project anticipated to occur over the next three years (ending in 2017).

7. INTERNAL PROJECT FILE #

8. INTRODUCTION

Tetra Tech EBA was requested by Parks Canada Agency (PCA) to conduct environmental studies for road improvements along the TCH in YNP, including investigation of a proposed (i.e.,) storage site at the foot of Mount Vaux near TCH kilometre (KM) 119+500 (measured westwards from the Banff National Park East Gate). The terrain at this site is very hummocky and is probably deposits from Mount Vaux placed after debris flood/ flow events. During field surveys conducted on June 6, 2015, an isolated marsh wetland (i.e., not surficially connected to other waterbodies), of temporary to seasonal inundation was observed within the southern limits of the proposed Mount Vaux debris storage area (Figure 1).

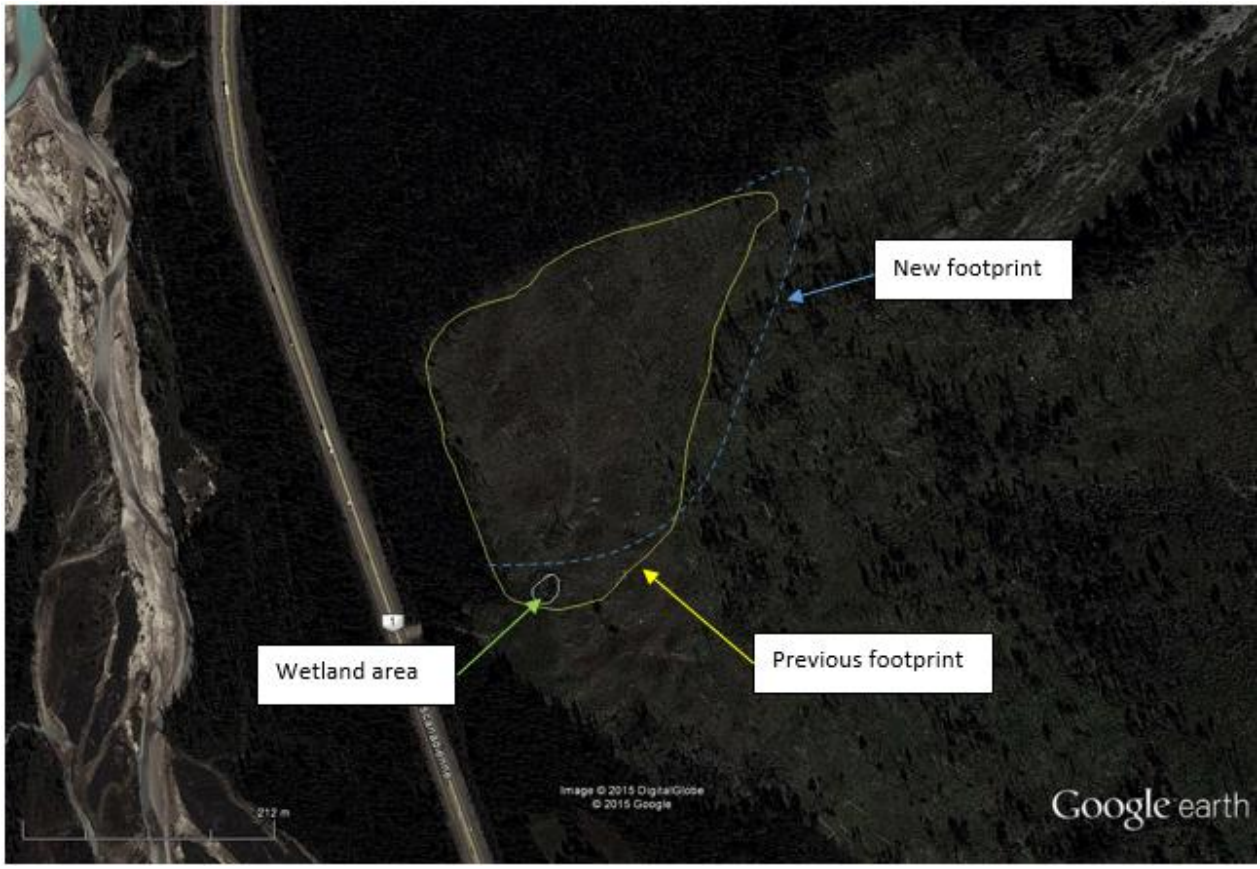

Figure 1 Aerial photograph of the proposed Mount Vaux debris storage area (outlined in yellow) and delineated boundary of the temporary to seasonally in undated marsh (outlined in white) detected during the field survey

The wetland was characterized by a dominant vegetation cover of bluejoint reedgrass (*Calamagrostis canadensis* var. *canadensis)* and beaked sedge (*Carex utriculata*) surrounded by a margin of regenerating trembling aspen (*Populus tremuloides*) and balsam poplar (*Populus balsamifera*) (Figure 2).

9. ENVIRONMENTAL PROTECTION MEASURES

Tetra Tech EBA recommends that PCA maintain a 5 m vegetated buffer from the delineated margin of the wetland area, preventing infill and sedimentation of the wetland throughout the execution of associated debris storage activities. In the event that extensive erosion from stored debris piles is anticipated, silt fencing should be installed to provide protection from sedimentation of the wetland.

To the greatest extent feasible, natural drainage patterns should be maintained throughout the Mount Vaux debris storage area, preventing alteration of localized hydrology outside of the development area.

The storage site footprint shall be altered to avoid material being stored within 5 m of the observed boundary. Boulders shall be placed outside the 5 m buffer zone to avoid accidental encroachment.

Figure 2 View southwest of the temporary to seasonally inundated marsh detected during the field survey conducted on June 6, 2015.

10 CONCLUSION

Through the implementation of previously recommended environmental protection measures, Tetra Tech EBA anticipates direct impacts to the detected wetland can be prevented.

SIGNATURES AND APPROVAL

EA Author *(Add additional signature blocks for multiple authors as required)*

Name: Bryan Hensel, B.Sc., P.Biol.	Date: 2015-07-16
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EA Review

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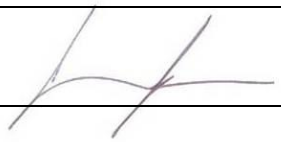
Signature: 	

Decision Approval

Name: Dan Teleki, acting for Alex Kolesch	Date: 2015-07-16
Position: Manager of Integrated Land Use Planning	
Signature: