



**COUGAR CREEK
DEBRIS FLOOD RETENTION STRUCTURE**

**Responses to NRCB Panel Questions for
the Town of Canmore – 14 August 2018
NRCB Application No. 1601**

SUBMITTED TO:
Natural Resources Conservation Board

SUBMITTED BY:
Town of Canmore

August 2018

Town of Canmore

TABLE OF CONTENTS

1 FOLLOW -UP QUESTIONS1

TABLE OF ABBREVIATIONS

CHT	Canadian Hydrotech Corporation
NRCB	Natural Resources Conservation Board

1 FOLLOW-UP QUESTIONS

1	The “Cougar Creek – Update of Grade Control Design Report – Issued for Permit”, dated 2016-05-04 contains a list of drawings at pages 7 and 8 (section 00.04). Please provide the listed drawings.
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Response:

The drawings were provided to NRCB via file transfer on August 15, 2018.

2	NRCB Question 3.3 (July 4, 2018) asks if any further measures are required, or proposed, to ensure the channel bed functions with the design project discharge. The Town’s response makes no mention of the channel bed; please explain if any further measures are required, or proposed, to ensure the channel bed functions with the design project discharge.
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Response:

No further measures are required, or proposed, to ensure that the channel bed functions with the design project discharge. Canadian Hydrotech Corporation (CHT) has modelled the bedload movement without any measures, as well as with several different measures within the channel bed. The modelling shows that with 45 m³/s flows downstream of the Structure, the channel, without any further measures, does not erode or aggrade to levels that are unacceptable. Drawings showing the final modelling run of the channel hydraulics and bed load transport without any further measures were provided to NRCB via file transfer on August 15, 2018.

3	In response to NRCB Question 3.4: (July 4, 2018) the Town says that further investigation of the 45 m ³ /s flow rate shows that a diverting structure is not required. The Town’s response does not identify how or why this decision was made: please explain how this decision was reached and why the diverting structure is no longer required (include any applicable reports).
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Response:

During the Option Analysis phase, Alpinfra was not aware of the full extent of the concrete mats into No Man’s Land. All options therefore required a funnel to ensure that the flow would be properly aligned at the inflow of the concrete mats lined channel. However, following the Option Analysis, CHT further investigated the configuration of the concrete mats. Following analysis and modelling by CHT, the existing configuration of the concrete mats was deemed sufficient to provide the required funnel geometry. All water discharged from the Structure will be properly aligned to enter the channel lined by concrete mats.

As previously stated, stone pitching will be required to ensure that this funnel section is robust enough. The stone-pitched concrete mats will provide a similar level of service and protection as the original funnel design would.

CHT has provided a report and associated drawings in 2016 regarding the updates required to the funnel and the culverts (CHT 2016). The report was previously provided to NRCB and the drawings are provided via file transfer on August 15, 2018.

References:

Canadian Hydrotech Corporation (CHT). 2016. *Cougar Creek, Update of Grade Control – Design Report, Issued for Permit*. May 4, 2016.