

Wyssen Reference Project

# Avalanche Detection Network at Rogers Pass



**Safety** through **innovation**

**WYSSSEN** switzerland **avalanche control**



## Avalanche Detection Network at Rogers Pass

**Project:** Avalanche Detection Network ADN at Rogers Pass

**Place:** Glacier National Park, BC

**Country:** Canada

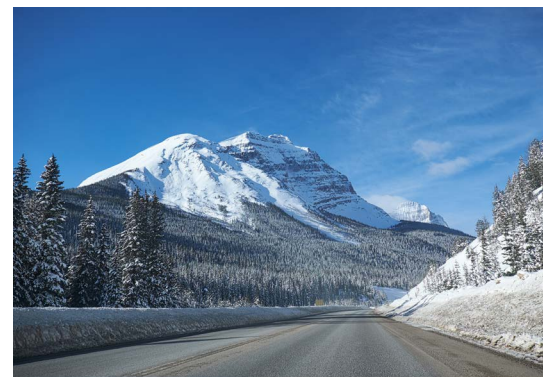
**Year:** 2018 - 2021

**Customer:** Parks Canada

**Protected Object:** Trans Canada Highway #1

**Installed Systems:**

- 13 IDA®
- 4 LARA®
- WAC.3®



### Initial Situation

The Trans-Canada Highway is a critical transportation corridor within British Columbia and a vital link in Canada's national highway network. The operational efficiency of this section of highway in Glacier National Park (GNP) in the winter months relies heavily on effective avalanche control using both passive and active mitigation strategies. 134 avalanche paths endanger the Trans-Canada Highway and railway throughout the park.

In 2015, the Government of Canada launched the Trans-Canada Highway - Avalanche Mitigation Project for Glacier National Park. The objectives of this project are to reduce closures and improve winter road safety through numerous strategies including traffic storage expansion, snow shed rehabilitations, improved signage, and upgraded avalanche mitigation structures and systems. The Avalanche Detection Network ADN is realized within this framework project and is the worlds largest and a unique avalanche detection project.



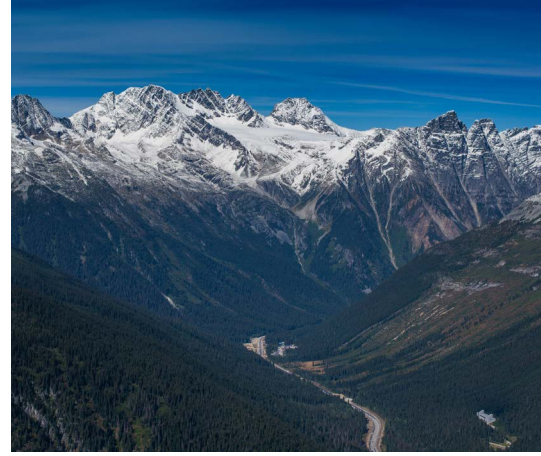
## Our Solution

The objective of the ADN is to provide the GNP Avalanche Control Section (ACS) with information of avalanche activity in specific paths, improving avalanche forecasting and timing of winter road closures. The result is expected to be improved winter avalanche control and a reduction in winter road closure hours.

**IDA®** - Infrasound detection system arrays will cover the whole highway corridor through GNP and deliver a complete picture of natural avalanche activity during every day and night time as well as confirmation of results of artificial avalanche control with artillery and other means to the forecasters. IDA® arrays are installed at the valley bottom and listen for infrasound waves produced by avalanches on all surrounding slopes.

**LARA®** - Long range avalanche radars deliver detailed information about slopes and paths which are of specific interest to the forecasters and used as indicator paths to determine the start of an avalanche cycle. LARA® is installed on the counter slope with a direct line of sight of the slope or path and monitors a pre-defined area. A high resolution camera is triggered to take pictures as soon as an event is detected and provides additional visual information of the event.

**WAC.3®** - The large amounts of data are processed automatically and displayed on a map in a simple and intuitive way. The web-based platform WAC.3® is comfortably accessible from any web-enabled device independent of the forecasters' location. An integrated alert system sends automatic emails and text messages to the forecasters with details of the detected avalanche event.

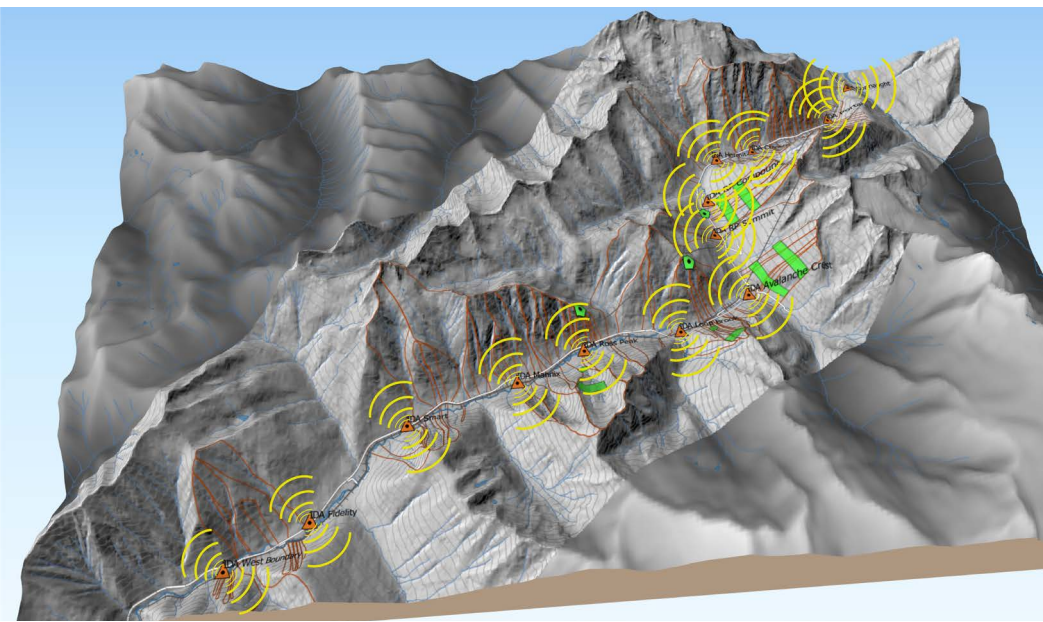


### ADN at Rogers Pass

- ✓ 134 avalanche paths
- ✓ 13 IDA®'s
- ✓ 4 LARA®'s
- ✓ 24/7 monitoring

### Future

With the realization of the whole project „Trans-Canada Highway - Avalanche Mitigation Project for Glacier National Park“ closures should be reduced and winter road safety should be improved.



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## A Project of:

### Wyssen Canada Inc.

201A-306 First Street West

P.O. Box 99

VOE 2S0 Revelstoke BC

Canada

Tel.: +1 250 814 3624

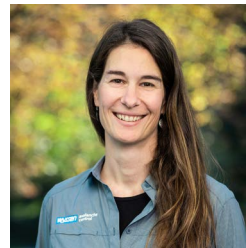
canada@wyssen.com

[www.wyssenavalanche.com](http://www.wyssenavalanche.com)

### Lisa Dreier

Tel.: +1 250 814 3624

[lisa@wyssen.com](mailto:lisa@wyssen.com)



In collaboration with:



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