



Southern Alberta Rock Slope Stabilization Project

March 7, 2018

Rishi Adhikari

Photo: Danila Spitsyn

Crowsnest Lake Rock Cut Site

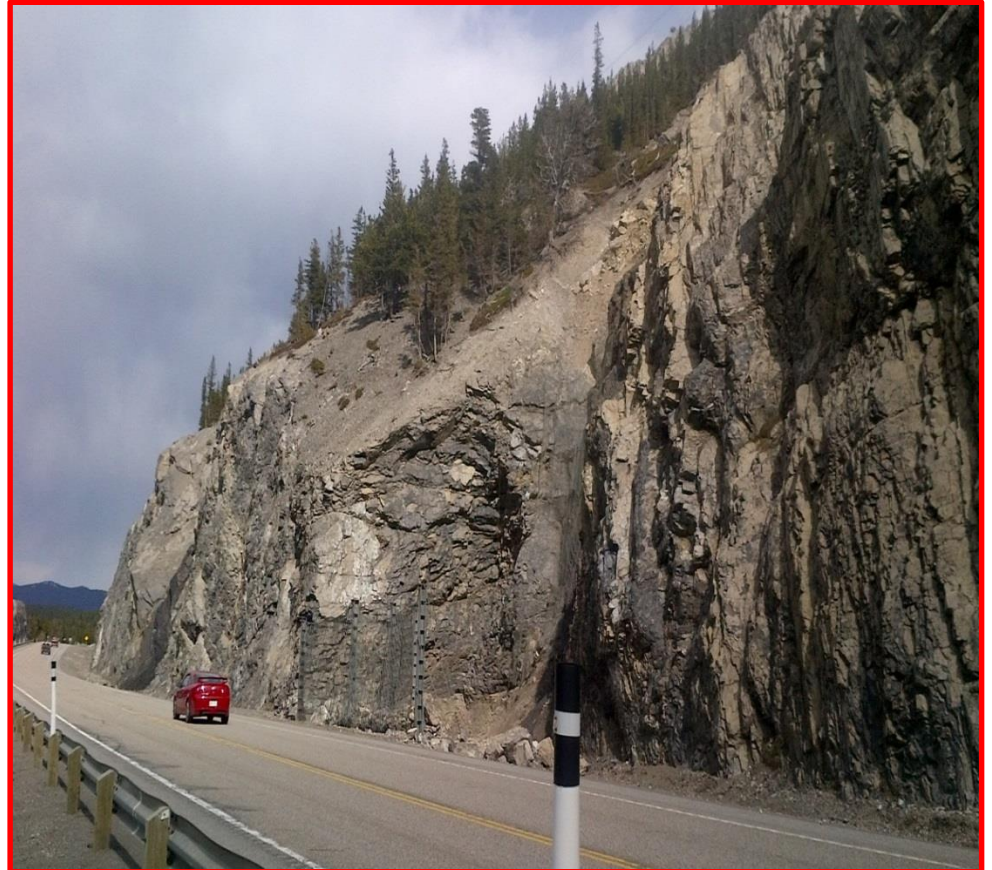
Location:

HWY3:02,
east of BC Border

Length: 700m

Rock Cut Face Height:
Varies - up to 55m

Rock Rolling Distance: ~
350m from the Highway
and >225m elevation
difference



Crowsnest Lake Rock Cut Site



Mt Baldy Rock Cut Site

Location:

HWY40:12, @ Kananaskis

Length: 300m

Rock Cut Face Height:

Varies - up to 14m

Rock Rolling Distance: ~
100m from the Highway and
>40m elevation difference



Galatea Creek Rock Cut Site

Highway: 40:12, @
Kananaskis

Length: 400m

Rock Cut Face Height:
Varies - up to 15m

Rock Rolling Distance: ~
60m from the Highway and
>30 m elevation difference



Issues Identified

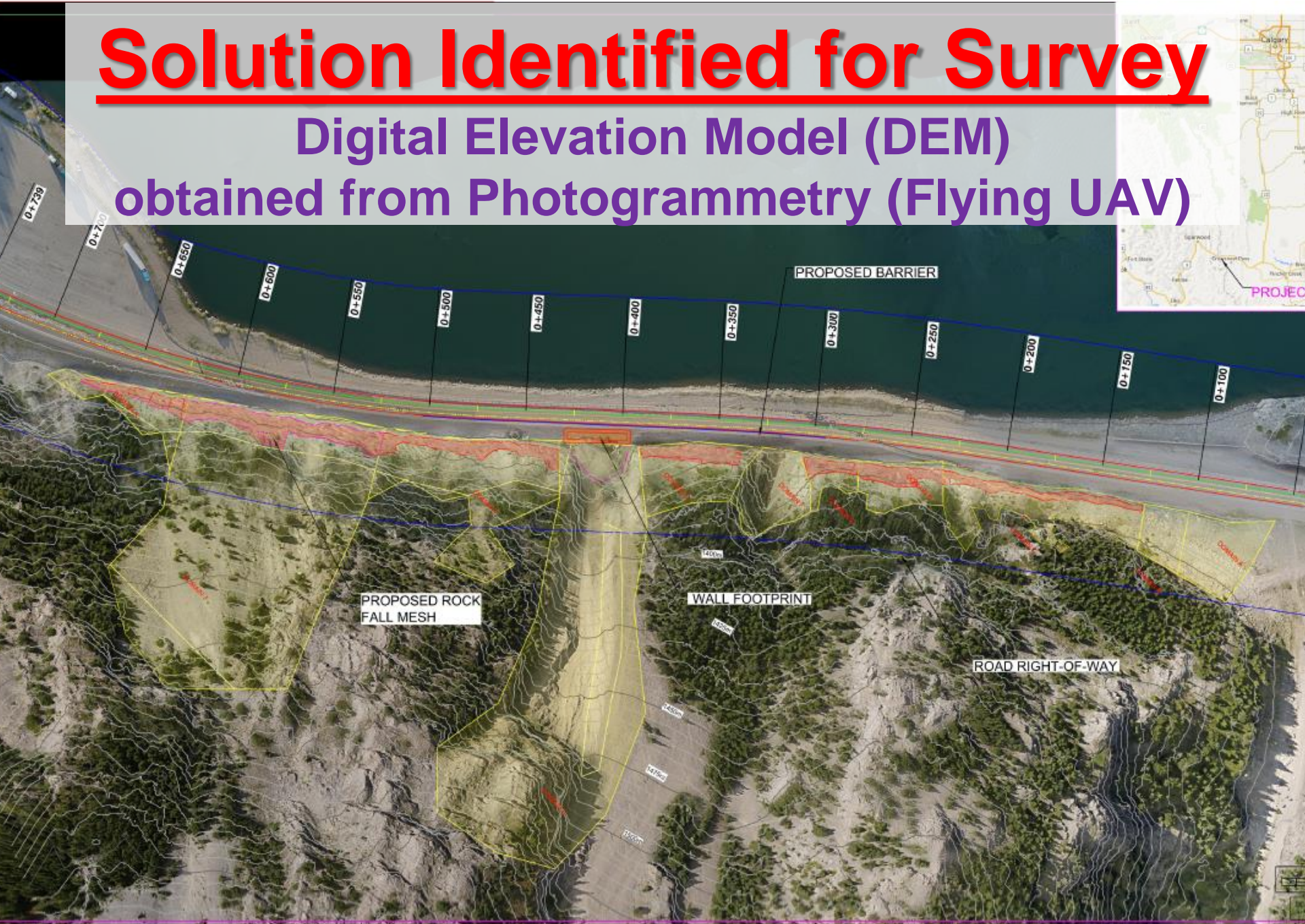
Risk

- Rock of different sizes falls / rolls down to the pavement
- Debris flows down the hill to the road
- Environmental issues – Lake and river near by.
- Difficult terrain for surveying and construction



Solution Identified for Survey

Digital Elevation Model (DEM)
obtained from Photogrammetry (Flying UAV)



Solution Identified for Debris Flow



**Earthen Wall with gabion facings.
Impact surface lined with recycled conveyor belt.**

Solution Identified for Rock Fall



Solution Identified for Construction



Photo: Danila Spitsyn

Lifting workers and materials including anchors and steel mesh by boom.

Constrain to the Solution



Alberta Environment – No animals be trapped in mesh and no trails of Bighorn sheep be disturbed.

Wildlife Monitoring



- Motion detecting Cameras at Mt. Baldy and Galatea Creek Rock Fall sites.
- Monitored the motion of Wild Life for a year.
- Identified the trails taken by Bighorns.
- Left the trails undisturbed.

Acknowledgements

- **Consultant: Amec Foster Wheeler**
- **Contractor: McKnight Enterprises Ltd.**

