



KICKING HORSE CANYON PHASE 4

We Closed Canada's National Highway – *Did it Go According to Plan?*

Mars Otten-Andrew, P.Eng., PTOE
Lead Traffic Engineer KHCP4
Principal Consultant - Transportation, WSP



transportation
investment
corporation



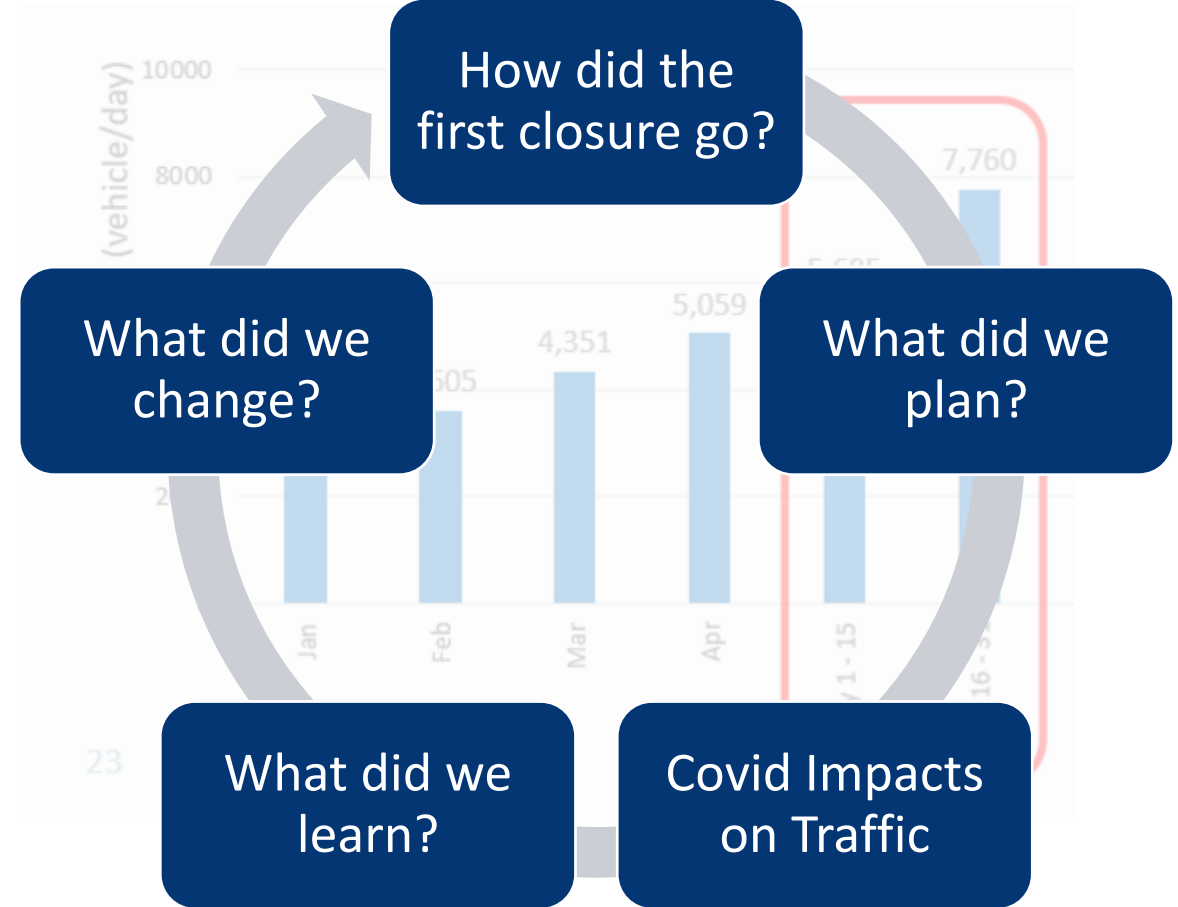


KICKING HORSE CANYON PHASE 4

Welcome to the Canadian Rockies



What are we building?
Why close the Highway?



How did the first closure go?

What did we change?

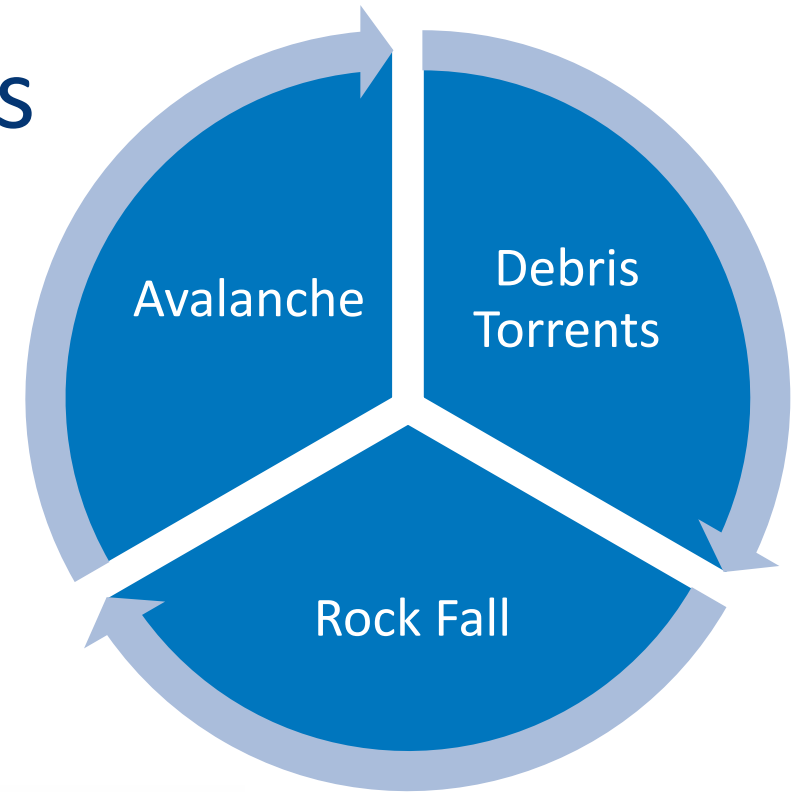
What did we plan?

What did we learn?

Covid Impacts on Traffic



Trans Canada Highway in the Rockies

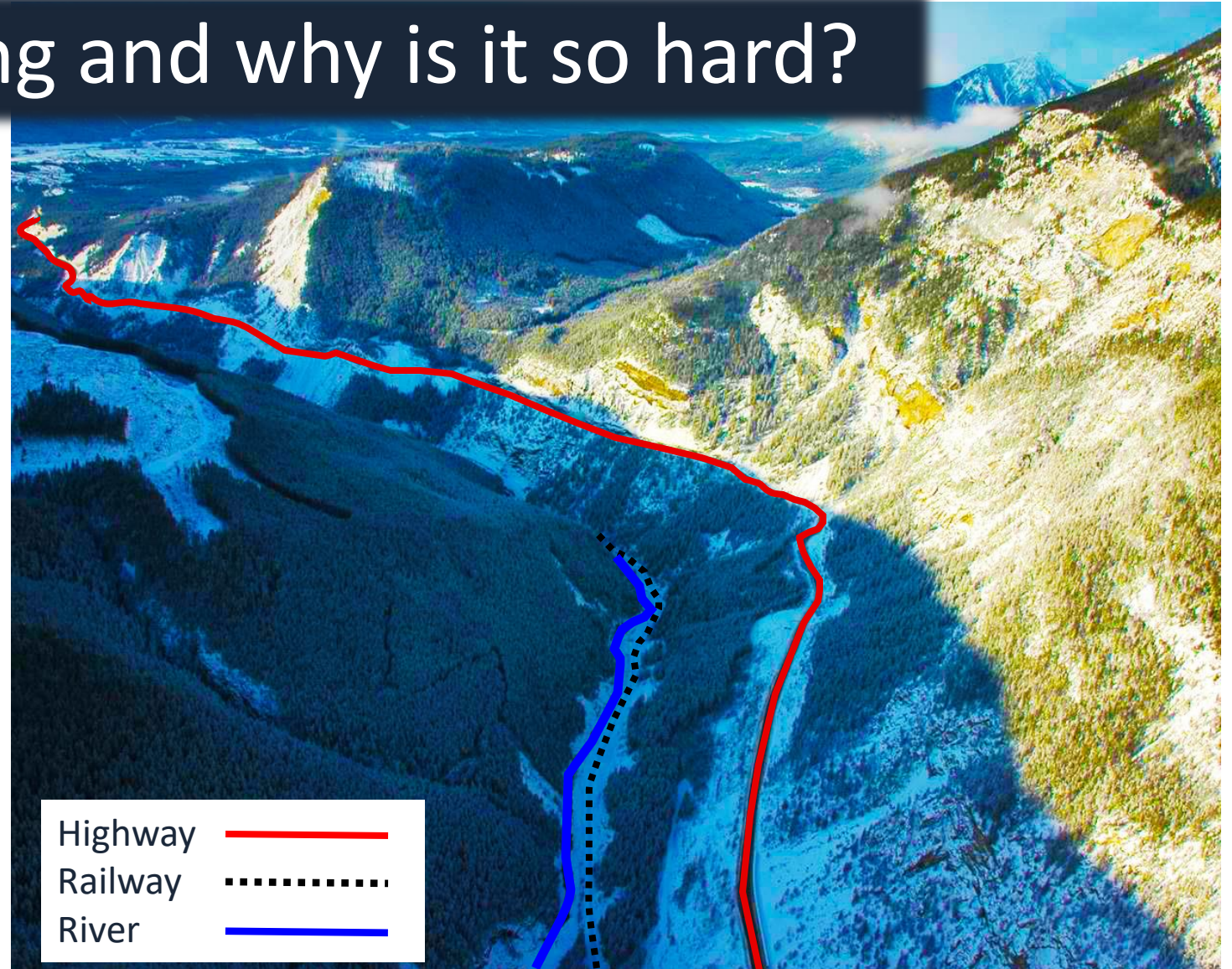


DANGER
AVALANCHE CONTROL USING EXPLOSIVES MAY BEGIN WITHOUT WARNING
 <small>BRITISH COLUMBIA The Best Place on Earth</small> <small>Ministry of Transportation and Infrastructure</small>

What are we building and why is it so hard?

Upgrading the 1950's vintage winding two lane highway to a modern four lane 100 km/h (60mph) standard.

- *Physically constrained*
- *Unstable rock*
- *Sheer rockface up and down*
- *Canadian Pacific Railway*
- *Whitewater river*

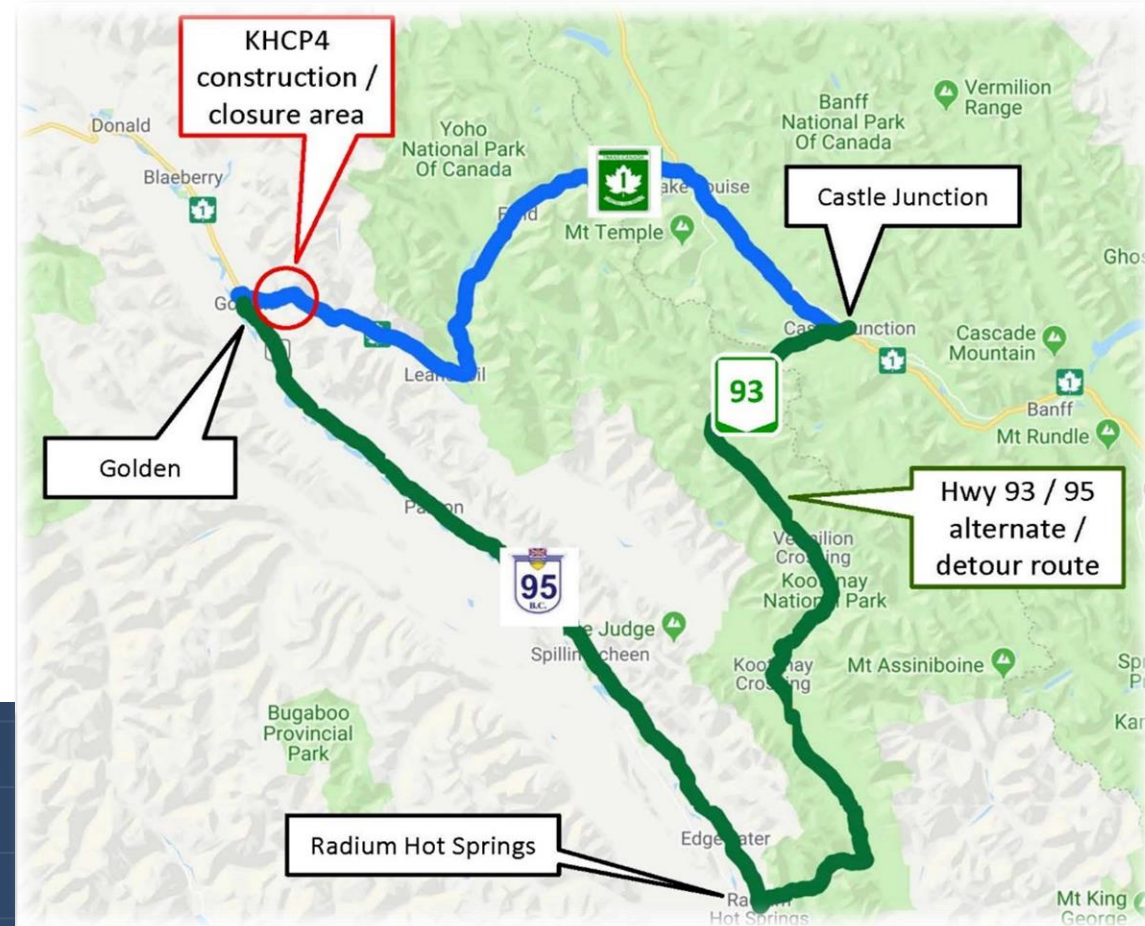




Why did we have to close the Highway?

- Safety of public and workers
- No working area for removal of large sections of mountainside
- Unstable, steep slopes both above and below
- Must not impact the Canadian Pacific Railway line and the Kicking Horse River

What did we plan?

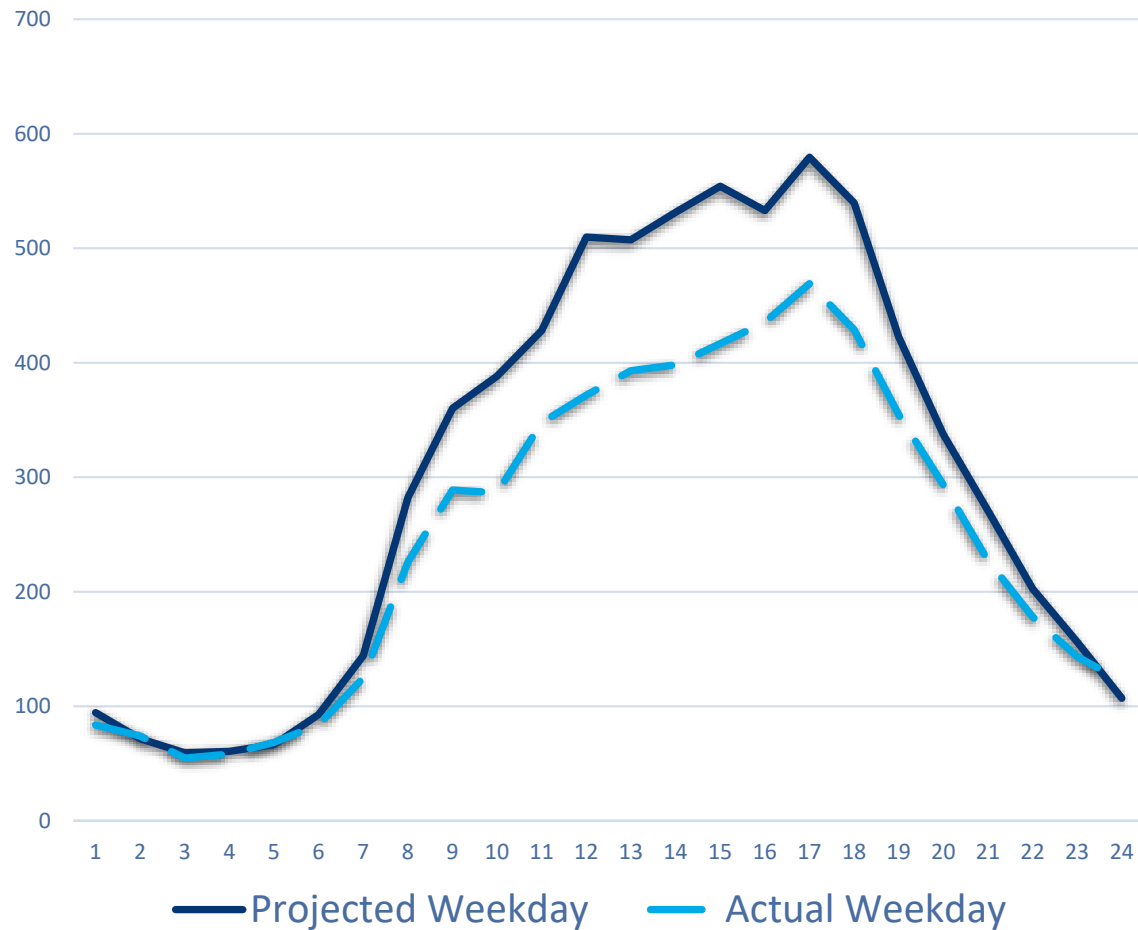


Closures restricted to two specific windows (Spring and Fall) based on traffic volumes and stakeholder requirements

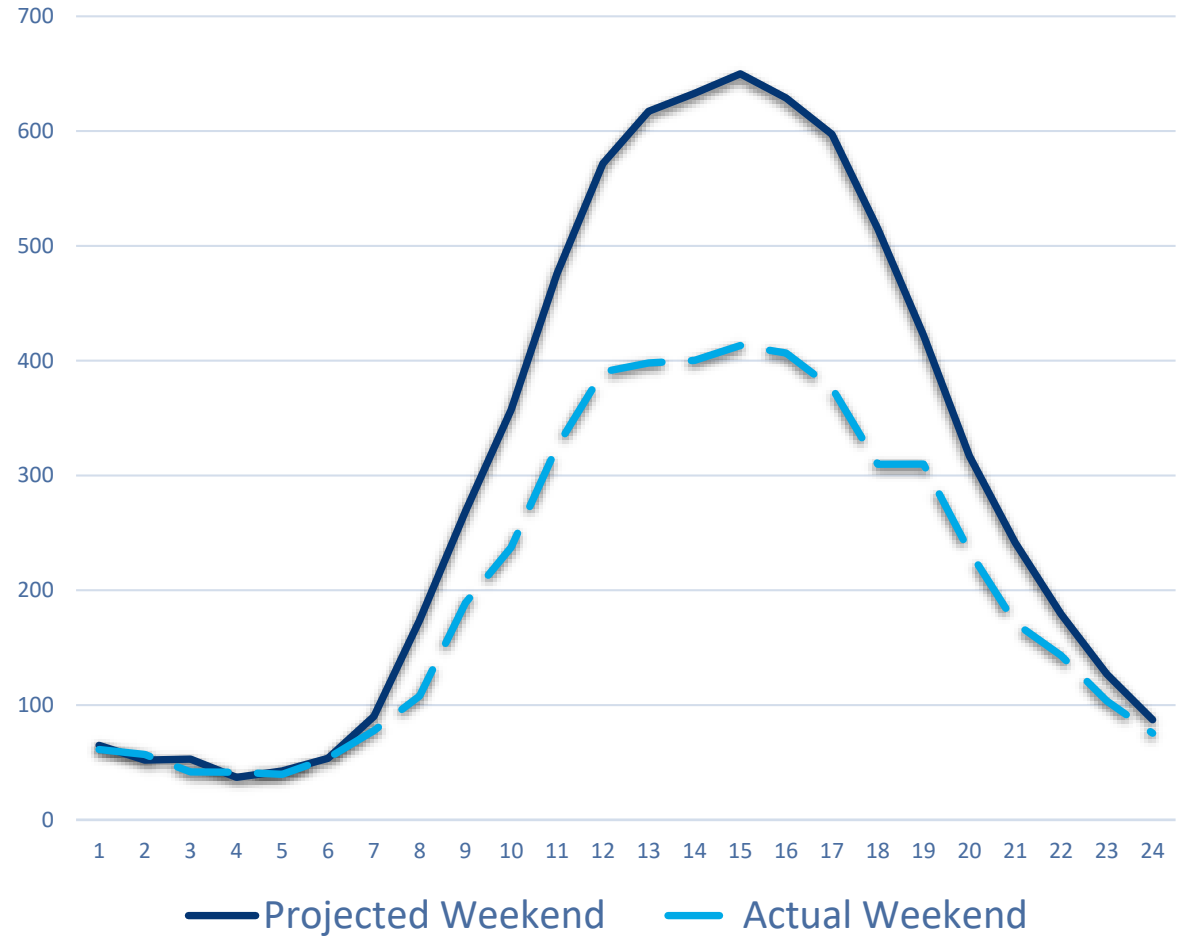
What did we see in April?

Volumes notably lower than predicted

WEEKDAY



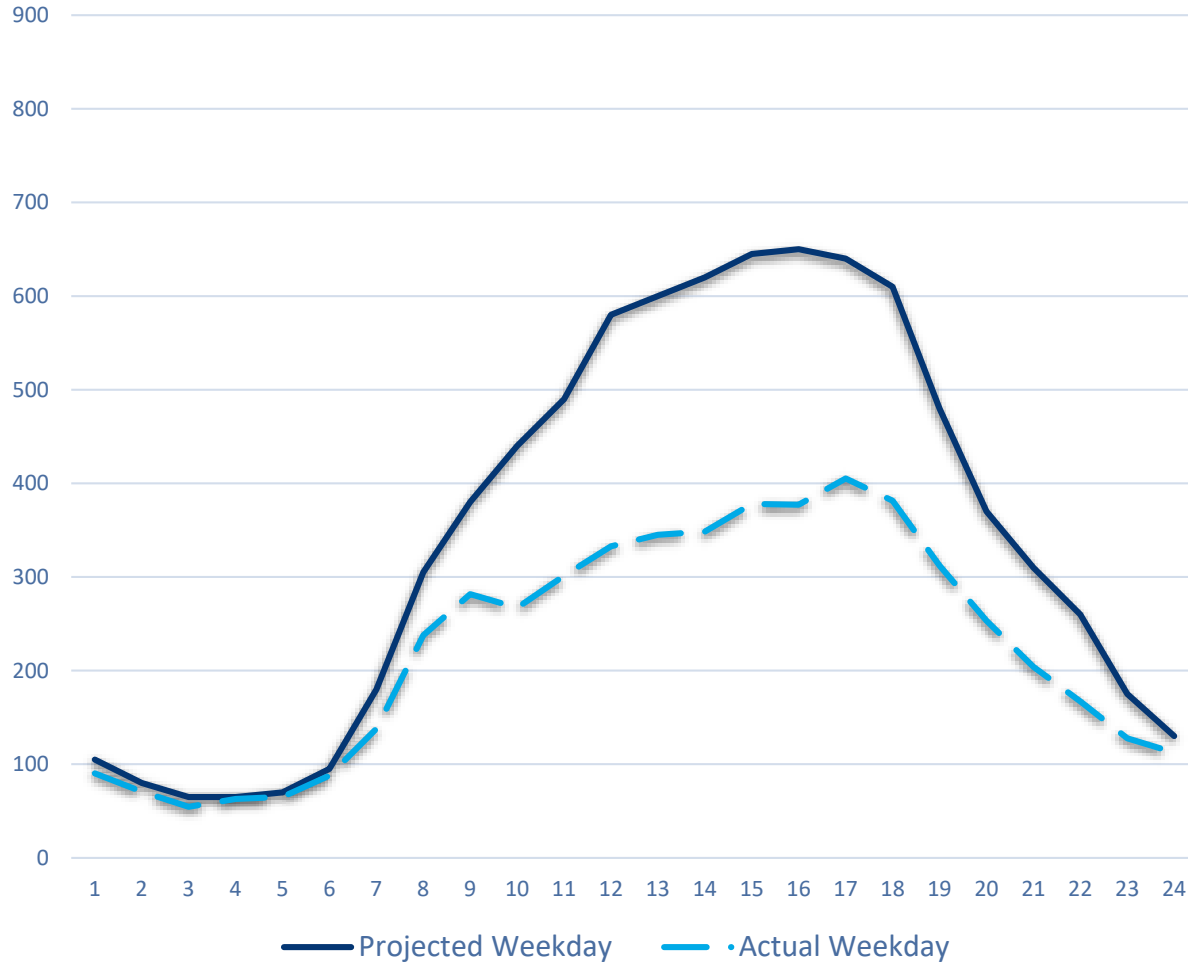
WEEKEND



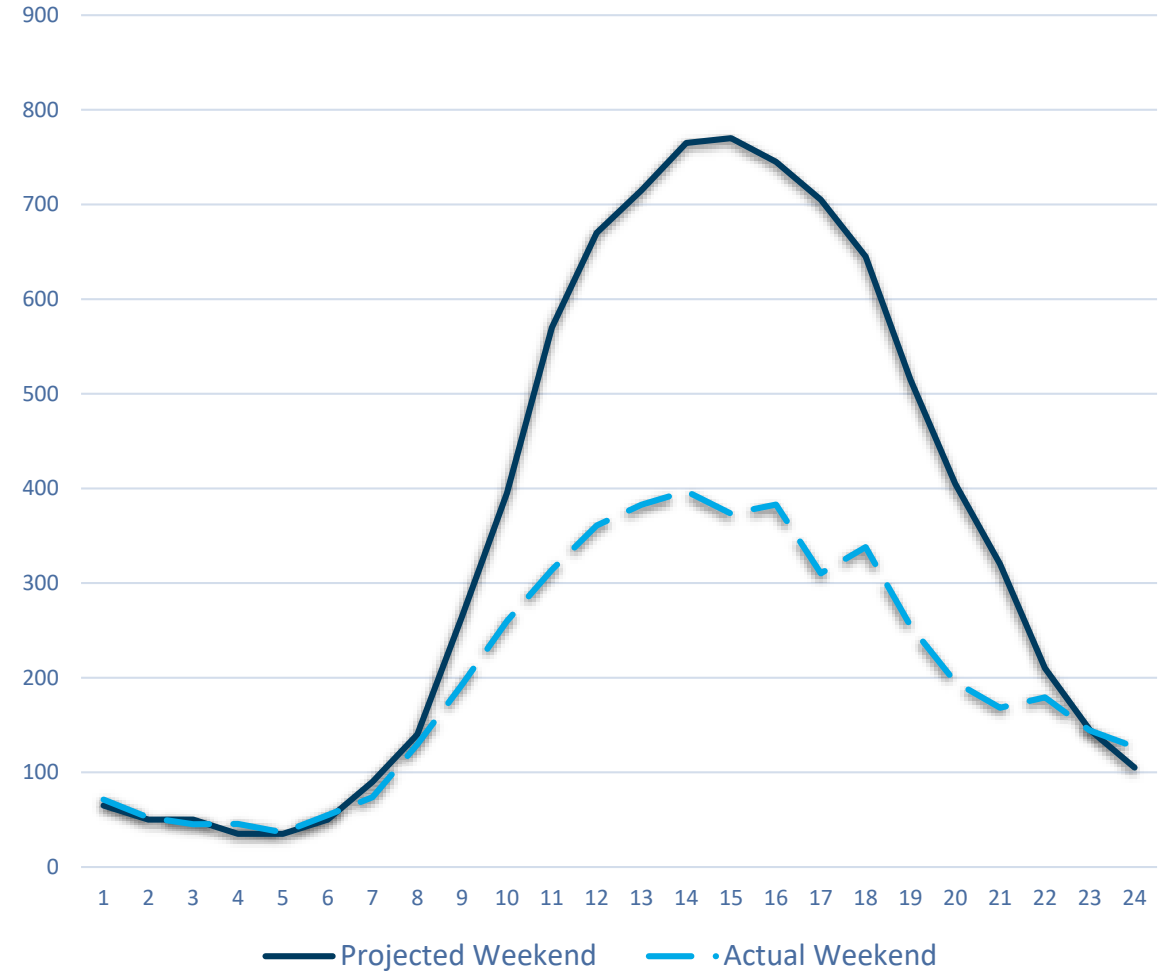
What did we see in May?

Volumes lower than predicted by an even greater margin

WEEKDAY



WEEKEND



Why the difference?

VANCOUVER | News

Travel ban: Site-specific road checks to be used for enforcement of B.C.'s new COVID-19 rules

COVID travel restrictions remain through May long as B.C. hints at easing of rules

BY MONIKA GUL AND HANA MAE NASSAR

Posted May 21, 2021 6:17 am PDT Last Updated May 21, 2021 at 10:52 am PDT



Both Alberta and British Columbia were experiencing surges in Covid 19 infections, resulting in increased travel restrictions during Spring

- We expect a significant increase in traffic heading into the summer.
- Initial observations confirm this.
- On the July long weekend, **Golden ran out of petrol** due to the high volumes of tourist traffic!

British Columbia

Tourism operators anticipate rush as recreational travel ban lifts in B.C.



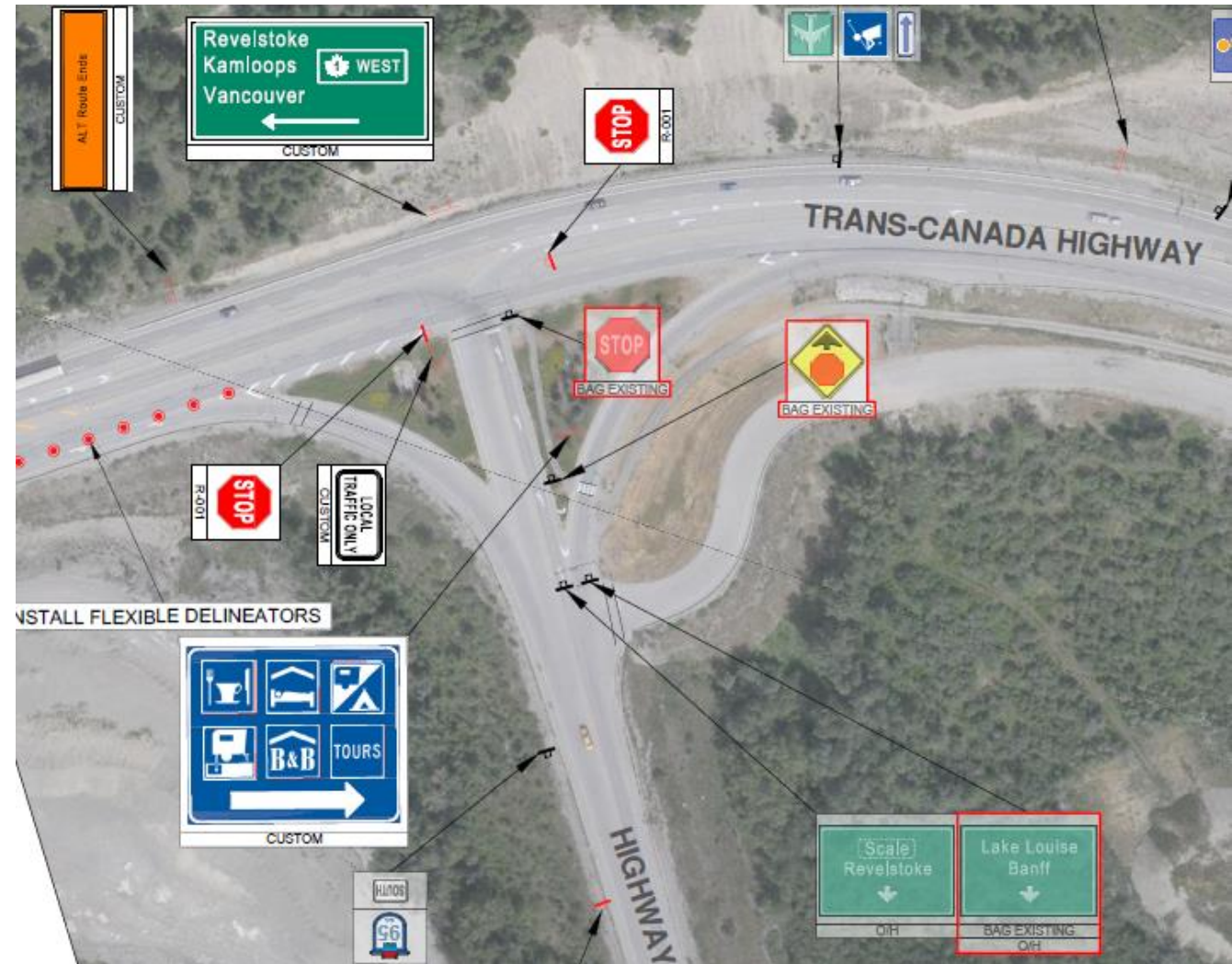
70 per cent of tourism revenue disappeared during the pandemic, but boom is expected for summer 2021

What did we Learn?

Driver Behaviour – Trans Canada / Highway 95

Altered intersection priority based on altered dominant movement:

- makes sense
- works in theory
- BUT**
- locals would not obey STOP



What did we change?

Reverting the Stop Sign

- Ultimately decided that for safety, we would revert to existing arrangement
- Meaning hundreds of vehicles Stop and tens of vehicles have priority
- This arrangement meets driver expectations and has been working
- Used VISSIM model to test operation
- Platoons and queues match our site observations



April Detour Conditions – VISSIM Extract

3 minute AVI File Available – Huge File Size

Let me know if you would like to check it out and I can screen share 😊

- Entering Golden from the south
- Platoons form due to high proportion trucks
- Platoons often disperse in town due to signals
- Queues can build at Highway 95 approach to Highway 1 Intersection, but disperse quickly.