

## **Roading and Transport Assessment**

Bendigo-Ophir Gold Project

Review by Peter Martineau

Date: 6 April 2026

### **Executive Summary**

1. The Integrated Transport Assessment that underpins the application transport network impact has a number of shortcomings and while highlighting several areas of concern, moves rapidly to a set of incomplete interventions while failing to address their combined impact.
2. Key issues detailed below combine to present significant safety, access, and amenity concerns for the local community and should be addressed in detail before any construction work is permitted for mining activities. It is important that access concerns are adequately mitigated **before** increased traffic effects are realised as these can be reasonably foreseen. As a minimum this should include:
  - Design and construction of a new 2 lane bridge adjacent to the SH6 and Ardgour Road Intersection
  - Detailed Design for the SH6 and Ardgour Road Intersection (integrated with bridge design and approach layout and Ardgour Road and Thomson Gorge Road (TGR) Intersection design and construction
  - Detailed Design and Construction of the Ardgour Rise Road which should be to a similar standard to the existing access track.
  - Detailed Design and Construction of Thomson Gorge Road and Ardgour Road. This should include minimum width of 6.5m, appropriate surfacing for heavy vehicles (and maintenance plan). As well as a safety assessment to ensure suitability for vulnerable road users such as cyclists and horses.
  - Safety assessment of the final, integrated design then completion of mitigating works before any further increase in construction or mine operation traffic.
3. The community should be engaged with CODC at the design stage to ensure these requirements are met before any construction at the mine.

### **Summary of Expertise**

4. I am an experienced civil engineer with 30 years in the civil infrastructure design, management, construction and consulting disciplines I have a degree in Civil Engineering from Heriot Watt University (BEng). I worked on large scale construction contracts in the UK before moving to New Zealand in 2004. I worked for NZTA (then Transit New Zealand) for 4 years between 2004 and 2008 before setting up my own consultancy business (41South) and have spent the past 14 years working across the

country for NZTA and various local authorities on business cases, road safety assessments, and project performance reviews.

5. I live in Wanaka and have driven and cycled to the top of Thomson Gorge Road

### **Code of conduct**

6. I have read the Environment Court's code of conduct for expert witnesses in Part 9 of the Environment Court Practice Note, and I have complied with it.
7. I have read the following reports:
  - B.30 Stantec Integrated Transport Assessment (hereafter referred to as ITA)*
  - B.39 Rob Greenaway & Associates Recreation Assessment*

### **Key Issues Requiring further clarification**

#### **a. One Lane Bridge (SH8 / Ardgour Intersection)**

**Safety** – The one-lane bridge, which is adjacent to the SH8/Ardgour intersection (main access for the majority of vehicles) is considered inadequate for the proposed increased traffic volumes and should be widened to 2 lanes. The bridge already has a poor safety record (~2 crashes per year) and this safety risk will be significantly increased with the increase in traffic volumes especially large, heavy vehicles. The design should also consider the interaction of a new bridge with the Ardgour road intersection (see below).

Note, the NZTA Bridge Manual (App A) does not identify triggers to go from a 1 lane to a 2 lane bridge, but identifies that a 2 lane bridge with AADT>4000vpd is a "high volume road". With the development (adding 400vpd), likely the 4000vpd threshold would be met - but this is ultimately guidance for a cross-section and not a standard.

**Capacity (bridge Strength)** – The ITA includes no information on the capacity (strength) of the bridge to support the proposed high volume of heavy trucks, and how this influences the structural integrity and lifespan of the bridge (which would become an NZTA cost to mitigate in the future).

The structural capacity of the existing bridge structure does not appear to have been assessed for additional loading from additional traffic, especially heavy vehicles.

**Efficiency (traffic delays)** – Increased traffic volumes by an estimated 250-400 VPD will reduce efficiency of SH6 traffic crossing the one lane bridge. This will be further compounded with traffic tending to arrive at the same time (start and end of work shifts) resulting in additional delays (as noted in the ITA) at peak times.

The Increased number of heavy vehicles will further impact traffic flows over the bridge. Heavy vehicles will take considerably longer to slow, stop and accelerate to and from the give way at the single lane bridge resulting in additional travel time and frustration for other road users.

The above factors should also be considered with item d. and the **SH6 and Ardgour Road Intersection**. Increased delay at the bridge will also impact on the safe and efficient operation of this intersection.

It is my view that appropriate mitigation for additional traffic volumes should include a new 2 lane bridge structure that is designed to accommodate larger vehicles before any work commences at the mine. This should also consider the design of the SH6 and Ardgour Road Intersection.

#### **b. Thomson Gorge Road Upgrade**

The ITA proposes upgrading **Thomson Gorge Road** to 6.5m which is needed. However, Ardgour Road is only 5.5m (below current standards) and should also be widened to 6.5m. Heavy vehicles can be up to 2.55m wide plus mirrors, so 5.5m leaves no room for error. The proposed design also includes an upgrade of the Thomson Gorge and Ardgour Road intersection. This includes a new T intersection and changing road priority.

While this widening is necessary to accommodate heavy vehicles, the design also needs to consider wider safety implications. The speed environment for heavy vehicles traveling downhill, mixed with local access must be carefully considered during detailed design. We need width to accommodate wider vehicles but also appropriate signage and design to ensure a safe speed, especially for downhill traffic on Thomson Gorge Road which now has priority.

**Recommendation:** Widening of Ardgour Road to 6.5m in line with Thomson Gorge Road. Detailed design of the widened Thomson Gorge road and Ardgour road intersection needs to provide additional width but also consider how speed will be managed with a combination of signage and positive traffic management to accommodate heavy vehicles and local access including recreational use.

#### **c. Alternative Route - Ardgour Rise Road**

Since Thomson Gorge Road south of Matilda Rise traverses the proposed mining areas, a new road will be constructed around the mine site to provide access to local walking tracks, conservation area and other public amenities. The new route should be constructed to;

*“a similar level of public access through the Dunstan Mountains as Thomson Gorge Road has provided”<sup>1</sup>.*

Very limited information is given in the ITA about the form, gradient, speed environment or safety standards for the replacement Ardgour Rise Route.

Information included in the

*Rob-Greenaway-and-Associates-Recreation-Assessment-Greenway-2025* document

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<sup>1</sup> B.30 Stantec Integrated Transport Assessment (Stantec) p51

suggests this is going to be significantly steeper<sup>2</sup> than the existing route and has to traverse some challenging topography and environmentally sensitive land. As detailed in the Recreation Assessment Report, the preliminary design for Ardgour Rise is significantly steeper for considerable lengths of the proposed route when compared to the existing Thomson Gorge Road. Most notably, the proposed Ardgour Rise Road includes over **3250m** of road with a gradient over **16.7%** compared with 262m on the existing route, and a significant **1764m** is over **20%** gradient compared with only 20m on existing route.

The proposed alternative route is also more exposed than the existing route with a section of almost 4km over 900m compared with 2km on the existing track.

Noting the statement in the ITA - 4.5 Ardgour Station Route

*"Details of the design will be worked through with CODC to ensure that the route achieves acceptable design features for its low use function (broadly comparable to Thomson Gorge Road).<sup>3</sup>*

*It is expected that the design process leading to a road suitable for public access and vesting will consider road surfacing and width, design speed, gradient, road reserve, signage, safety features, and future maintenance requirements."*

Given the challenging terrain and condition of the existing track, this is likely to require significant earthworks to achieve an acceptable standard for the new track. This in turn will have wider environmental impacts and more detailed assessment is required to support this application.

I have also read the evidence of Johnathan Kennett and concur with his view that this is a significantly worse (more challenging and unable to be ridden by most cyclists in parts) alignment and further work is required for this to be considered as an alternative for Thomson Gorge Road. Further, it is my experience that roads at this early concept design stage often end up taking quite different alignments during detailed design and construction and the effects on the adjoining land should be assessed in more detail before this can be considered a viable alternative route.

I also note that the Recreation Assessment refers to an "Appendix 5"<sup>4</sup>, a longitudinal section of Ardgour Rise, which is not included in the report, yet would have assisted with the comparison of TGR against the proposed Ardgour Rise.

#### **d. Safety of vulnerable Road users**

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<sup>2</sup> Rob Greenaway & Associates Recreation Assessment table 1 P30

<sup>3</sup> Stantec p31

<sup>4</sup> Greenaway p30

Ardgour Road is a relatively quiet road, with generally good site lines and low volumes of heavy traffic (other than seasonal short periods of increased activity related to agricultural contracting). This route is used by horse-riders, cyclists and pedestrians for exactly this reason, with some Cromwell and Wanaka road cyclists using it regularly.

With a significant increase in traffic, especially heavy vehicles it is essential that the design of the upgraded road and intersection carefully considers these vulnerable road users.

This proposal seeks to significantly increase the volume of traffic and use by heavy vehicles. This will have a considerable impact on this quiet country road, particularly on and between Thomson Gorge Road and SH8. I note the comments from NZTA<sup>5</sup> outlining their requirements, including

*“widening Ardgour Road to ensure two-way movements of trucks can take place;”*

While this has been interpreted to mean at the intersection only, it will not support the increased volume of heavy traffic. With the relatively lower quality pavement width and surface present in that stretch of Ardgour Road, which is sufficient for the low volumes currently, this upgrade work must be undertaken before more work takes place on the site. To not upgrade until construction is underway will only exacerbate a negative impact on the community. A car and a truck passing each other on that stretch of road and any recreational user will have to be off the edge of the road or be struck. Nor should the remaining community have to fund the increase in heavy road traffic causing damage. Perversely the Report recommends a 6.5m wide carriageway for the lower volume Thomson Gorge upgrade, but not anything for the 5.5m wide higher volume Ardgour Road with no shoulder in many places.

While physical work has begun on Thomson Gorge Road, any work on Ardgour Road, outside of the intersection, is not included in this application, except an expectation that issues will be raised through the Traffic Management Plan<sup>6</sup>.

It also appears that Stantec have approached any issues with lane width on this section as basically a maintenance problem (i.e. increased edge break) and don't recognise the inherent increased risk to other road users (see photo in Figure 6-3 on p42)

**e. Safety at key Intersections**  
**SH6 and Ardgour Road Intersection**

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<sup>5</sup> Email from Gemma Kean to Andrew Metherell of Stantec in Appendix E of B.30 Stantec Integrated Transport Assessment.

<sup>6</sup> 6.3.2 Page 43 of B.30 Stantec Integrated Transport Assessment.

There is an absence of traffic modelling in relation to the SH6/Ardgour intersection and across the single lane bridge (SH6). The modelling should capture that there will be a "pulse" of demand, with most people arriving in shifts - so arriving and departing at similar times. Likely still however the modelling shows LOS A or B.

Largest traffic effects (delays) would be across the bridge itself. The increased number of trucks will reduce the effective capacity across the bridge, as they travel slower and require more clearance time.

The ITA does talk about queueing at the bridge, so the single lane restriction is having an effect on efficiency, and this will only be exacerbated by the proposal.

### **Thomson Gorge Road and Ardgour Road Intersection.**

While the ITA includes widening of Thomson Gorge Road and intersection improvements at the Ardgour Road and SH6 intersections, the design needs to carefully consider the combined impact of these improvements. How will they work together to ensure safety and efficiency for the various road users – heavy vehicles, local access, cyclists and other recreational users. The current design is focussed on efficiency of intersections for mine traffic rather than a complete design solution that ensures safety for all.

8. The above key items combine to present significant safety, access, and amenity concerns for the local community and should be addressed in detail before any construction work is permitted for mining activities. It is important that access concerns are adequately mitigated before increased traffic effects are realised as these can be reasonably foreseen.
9. This should include as a minimum
  - Design and construction of a new 2 lane bridge adjacent to the SH6 and Ardgour Road Intersection
  - Detailed Design for the SH6 and Ardgour Road Intersection (integrated with bridge design and approach layout and Ardgour Road and Thomson Gorge Road Intersection design and construction
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10. I also note that the ITA includes limited assessment of impacts on the wider transport network. With the majority of mine staff likely to travel along two main routes to site, SH 8A (from Wanaka Luggate/Hawea) or SH 8 (Cromwell/Alexandra), and arriving/departing at similar times (start and finish of shifts). This will put

additional pressure on existing network “pinch points” such as the single lane “red bridge” crossing the Clutha Mata Au at Luggate on SH8A, which is already under strain.

11. More consideration should be given to the provision of buses for mine workers to reduce traffic volumes and controlling times for heavy vehicle movements. While this is alluded to in the application, the consent should include enforceable conditions and not simply be dealt with in a future Traffic Management Plan. See *Buller District Council Application for Resource Consent RC130025B*<sup>7</sup> in Appendix A.
12. The community should be engaged at the design stage to ensure these requirements are met before any construction at the mine.

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<sup>7</sup> Buller district Council Snowy River Mine RC130025B (S127 Variation) Roading, Conditions 58-75 including Advice Note on p15

APPENDIX A – Snowy River Mine Resource Consent