



## **SNOWY VALLEYS COUNCIL MEETING**

### **LATE REPORTS**

**21 FEBRUARY 2019**

THE MEETING WILL BE HELD AT 2.00PM  
IN THE TUMUT ROOM, 76 CAPPER STREET, TUMUT

## **Disclosure of Pecuniary Interests at meetings**

- Item from Bluet Local Government Handbook

**[14.125]** A Councillor or a Council Committee member who has a pecuniary interest in any matter with which the council is concerned, and who is present at a meeting of the council or committee at which the matter is being considered, must disclose the nature of the interest to the meeting as soon as practicable. The person must not be present at, or in the sight of, the meeting either at any time during which the matter is being considered or discussed or at any time during which a vote is being taken on any question relating to the matter (s 451). A Councillor who has declared a pecuniary interest in a matter before the council but has withdrawn from the meeting because of that declaration is not counted in considering whether the meeting is quorate for that matter.

## **Disclosure of Political Donations and Gifts**

The Environmental Planning and Assessment Act 1979 places obligations on Councillors, staff, applicants and any person who makes a public submission, to disclose information relating to political donations and gifts during the environmental plan making or development assessment process.

Furthermore, for each planning decision made at a Council or Committee Meeting, the names of Councillors who supported the decision and those that oppose the decision must be recorded.

The fact that political donations or gifts have been made by applicants / proponents of a planning application should not affect whether an application is approved or refused. Political donations or gifts should not be relevant in making a determination. The matter should be determined on its merits. Nor do they provide grounds for challenging the determination of any applications.

For further information, visit [www.planning.nsw.gov.au/donations](http://www.planning.nsw.gov.au/donations)

## **Public Recording of Meetings prohibited without Council authority**

A person may use any recording device, including audio and visual recording and any device capable of recording speech, to record the proceedings of a meeting of a council or a committee of a council only by the resolution of the council or committee.

A person may, be expelled from a meeting of a council or a committee of a council or using or having used a tape recorder without consent.

## **Livestreaming of Meetings**

Please be aware that this meeting will be recorded and livestreamed.

## **Photography**

Flash photography is not permitted at a meeting of the Council or a Committee of the council without the consent of the General Manager.

## **Public Forum (extract from the Code of Meeting Practice)**

Residents, ratepayers, applicants, consultants or other persons may request to address Council in relation to any matter which is listed for consideration on a Council Agenda. A person will be permitted to address a meeting of the Council, if the Council so resolves.

- a) A Public Forum may be scheduled prior to each Ordinary Council Meeting.
- b) There is a time limit of five (5) minutes per speaker. One extension of time (maximum 1 minute) may be granted at the discretion of Chairperson. The subject matter only is to be discussed.
- c) Council may limit the number of speakers to address agenda items if there are a large number wishing to speak.
- d) Public Forum should not be used to raise questions, routine matters or complaints. Such matters should be forwarded in writing to Council where they will be responded to by appropriate Council officers.
- e) All requests to speak at a Council meeting must be received by the General Manager (or his or her delegate) no later than 12pm on the day of the Meeting and are listed in order of receipt. Accepting requests received after this time will be at the discretion of the Chairperson.
- f) Speakers on agenda items will be called to address Council by the Chairperson and must provide their full name and suburb of residence before speaking, so that these details can be recorded in the minutes.
- g) Councillor questions to speakers are at the discretion of the Chairperson and for clarification purposes only. Speakers are under no obligation to answer any question put to them.
- h) Speakers will be made aware that their address will be recorded and will be streamed live over the internet. The commencement of their public address will be their agreement of such recording.
- i) The Mayor/Chairperson has the discretion to withdraw the privilege to speak where a speaker makes inappropriate or offensive comments about another person.
- j) Speakers may use and distribute information; photos, maps etc. if submitted to and approved by the General Manager (or his or her delegate) by 12pm on the day of the meeting.



**Thursday 21 February 2019**  
**Snowy Valleys Council Chambers**  
**76 Capper Street, Tumut**  
**2.00pm**

## **LATE REPORTS**

### **10. MANAGEMENT REPORTS**

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**10. MANAGEMENT REPORTS****10.8 PETITION - BRINDABELLA ROAD UPGRADE**

**REPORT AUTHOR:** DIVISION MANAGER ASSET PLANNING & DESIGN  
**RESPONSIBLE DIRECTOR:** ACTING DIRECTOR ASSETS AND INFRASTRUCTURE

**EXECUTIVE SUMMARY:**

Council has received a petition of 1,434 signatures requesting the following;

*Upgrade the Brindabella Road – Tumut to Canberra – The Economic Link to the future.*

*Open up economic development, education, tourism, health, professional services and road safety.*

The petition was formally presented to Council prior to the Council meeting held on the 22 November 2018 by members of the *Brindabella Road – Economic Link Group*.

In accordance with Councils Petitions Policy (SVC-COR-PO-42-1), this report is provided to ensure that the views of the community are effectively communicated to the Council and considered by Council as part of the decision making process.

This report also provides an update on the projects to undertake survey and detailed design for upgrading Brindabella Road between Brindabella Valley Road and the NSW/ACT border along with the preparation of a business case to upgrade the road.

**RECOMMENDATION:****THAT COUNCIL:**

1. **Receive this report on the petition from Brindabella Road – Economic Link Incorporated to upgrade Brindabella Road.**
2. **Receive and note the petition formally presented to Council on the 22 November 2018 from Brindabella Road – Economic Link Incorporated to upgrade Brindabella Road.**
3. **Notify the chief petitioner in writing, recognising that the upgrade of Brindabella Road is a high priority strategic aim for Council.**
4. **Receive and note the Business Case prepared by SC Lennon & Associates Pty Ltd for the upgrade of Brindabella Road, noting that the business case is based on high level assumptions only at this stage.**
5. **Note the completion of the detailed design for the 10.6km section of Brindabella Road between the Brindabella Valley and the ACT border as detailed in this report.**

**BACKGROUND:**

Brindabella Road is considered critical enabling transport infrastructure that provides access for residents, businesses and tourists to and from the Snowy Valleys region.

In its current condition, significant sections of the roadway are unsuitable for large vehicles, caravans, campervans, motorcycles and bicycles.

Brindabella Road has varying conditions along its length. Some segments of the roadway traverses very steep terrain, is very narrow - not sufficient for two way traffic and is regularly impacted by extreme weather events. Around 45 kilometres of the road is unsealed.

It currently takes an estimated 2 hours and 39 minutes to travel the 128 kilometres from the Snowy Valleys to Canberra using the link that Brindabella Road provides, upgrading this roadway could significantly reduce this travel time.

It is intended that upgrading Brindabella Road would significantly improve connectivity for businesses with the Canberra market, enable the further development of the tourism industry and assist with growing the region's economy.

## REPORT:

The petition referenced in this report, was formally presented to Council prior to the Council meeting held on the 22 November 2018 by members of the Brindabella Road – Economic Link Group.

The *Brindabella Rd – The Economic Link Incorporated* are a group of interested and passionate individuals from within and outside the Snowy Valleys Local Government Area, who actively support and lobby all levels of Government and potential investors for the upgrade of the Brindabella Road.



The upgrade of Brindabella Road is also a priority project for Snowy Valleys Council which has dedicated significant resources to advocating and supporting for the upgrade of the road.

This work, most recently included, the completion of survey and detailed designs for upgrading last section of Brindabella Road between Brindabella Valley Road and the NSW/ACT border. The delivery of this project included specialist survey, geotechnical, civil, structural and environmental engineering input.

The brief for the detailed design included the development of options to manage road safety through widening, sealing, provision of guardrails, stormwater drainage, slope stability and improving environmental impacts. The following provides a summary of the considerations that were incorporated into the detailed design:

- 5.0 metre wide carriageway with 0.5 meter shoulders and a full width seal. This will permit for light vehicles to pass with the overall seal width being 6 metres.
- Current alignment of the road corridor remain generally unchanged with the horizontal geometry improved to accommodate a desired 40km/h posted (advisory) speed limit, noting that there may be some small areas where the topography would impose additional unnecessary construction cost to achieve these minimums.
- Vertical geometry will generally be raised to improve the vertical grading, sags and crests for optimum sight distance along the alignment of the roadway. Similar to the horizontal restraints, the vertical geometry is constrained by the existing mountainous environment and will compromise on the maximum vertical grades on the straights for

the adopted design speed in lieu of introducing cost prohibitive and considerable road cuttings.

- Cut batters design based on the geotechnical investigations, at a slope of 1:1 maximum with a table drain at the base. Fill batters designed at a slope of 1:4 and where unachievable safety barrier on 1:2 slopes have been adopted.
- Use of construction materials sourced from site, noting that the importation of suitable material is not viable – cost prohibitive.
- Use of a double/double seal approach to ensure pavement longevity especially during winter.
- Earth and rock lined table drains design to provide the required freeboard to the underside of the new embankments and pavement layers. Surface runoff is directed to either the high side of the roadway or to sheet flow on the low side. Stormwater captured on the high side is directed to culverts that undercross the roadway. The design also included aquaplaning checks to confirm compliance with the maximum water film depth of 4mm.
- Roadside barriers provided where required for road safety.
- Ecological assessment and review of environmental factors, notes that the proposed road widening will require removal of vegetation in a narrow linear area along Brindabella Road and will increase the width of an existing break in vegetation connectivity.

A copy of the general arrangement drawing for the detailed design for upgrading the last 10.6 kilometre section of Brindabella Road between Brindabella Valley Road and the NSW/ACT border is attached to this report.

A copy of the business case undertaken by SC Lennon & Associates on behalf of Snowy Valleys Council is also attached to this report under separate cover. The purpose of the business case was to assess the reasoning and justification for upgrading Brindabella Road.

In summary the business case identifies that:

*Investing in an upgrade of Brindabella Road would deliver a multitude of economic and community benefits, including improvements in travel efficiency and road safety, amenity and liveability and access to business, education and employment opportunities. In addition to a range of direct road user benefits, upgrading Brindabella Road will deliver significant regional economic benefits including:*

- *Liveability for residents;*
- *Business productivity improvements; and*
- *Visitation uplift.*

The report by SC Lennon & Associates includes a detailed Cost-Benefit analysis the outcomes of which are summarised in the report as:

*The project's benefit-cost ratio and the estimated regional economic and employment benefits demonstrate a strong and robust business case for upgrading Brindabella Road.*

It should be noted that the business case prepared by SC Lennon & Associates is based on high level assumptions only at this stage, which will be further refined as the project to upgrade Brindabella Road progresses through the initiation and development phases.

**LINKS TO COMMUNITY STRATEGIC PLAN AND DELIVERY AND OPERATIONAL PLAN:****Integrated Planning and Reporting Framework:****CSP Outcome 2028**

Theme 2: Growth through Innovation

Theme 5: Our Infrastructure

**Delivery Outcomes**

2.2 Encourage sustainable tourism initiatives which create employment and boost the local economy

5.3 Provide and partner with other agencies to deliver an effective, safe local transport network

**Operational Actions**

2.2.1 Implement priority actions from the Destination Management Plan

5.3.4 Advocate for funding to improve local transport network

**SUSTAINABILITY ASSESSMENT:**

	<b>Positive</b>	<b>Negative</b>
Social	Upgrading Brindabella Road would improve travel efficiency, road safety, amenity and overall liveability for residents that rely on the road to access services.	The cost and resources to upgrade and maintain Brindabella Road could impact negatively on the provision of other services.
Environmental	The diversity of the natural environment and nature experiences on offer in the Snowy Valleys Region would be made more accessible by upgrading Brindabella Road	Construction works associated with upgrading Brindabella Road could impact negatively on the local Flora and Fauna. These potential impacts would be assessed further as the project is developed.
Economic	Investing in an upgrade of Brindabella Road would deliver a multitude of economic benefits, including improvements in access to business, education and employment opportunities.	The cost to upgrade and maintain Brindabella Road could impact negatively on the provision of other services.
Governance	The project to upgrade Brindabella Road is in the initiation/development phase which is being undertaken in accordance with the relevant provisions of the NSW Local Government Act 1993 and the NSW Local Government (General) Regulation 2005 and Councils accredited Integrated Management System.	Failure to comply with the relevant legislation could expose Council to both legal and reputational risk.

**Financial and Resources Implications**

There are no financial or resource implications associated with this report, noting that the proposal to upgrade Brindabella Road is currently in the initiation/development phase and dependent on securing funding.

**Costs and Benefits:**

The Business Case prepared by SC Lennon & Associates includes a detailed Cost-Benefit analysis for the upgrade of Brindabella Road, the outcomes of which are summarised in their report as:

*The project's benefit-cost ratio and the estimated regional economic and employment benefits demonstrate a strong and robust business case for upgrading Brindabella Road.*

**Policy, Legal and Statutory Implications:**

The project to upgrade Brindabella Road is in the initiation/development phase which is being undertaken in accordance with the relevant provisions of the NSW Local Government Act 1993 and the NSW Local Government (General) Regulation 2005 and Councils accredited Integrated Management System.

Failure to comply with the relevant legislation could expose Council to both legal and reputational risk.

**RISK MANAGEMENT – BUSINESS RISK/WHIS/PUBLIC:**

Noting that the proposal to upgrade of Brindabella Road is currently in the initiation/development phase there are no direct WHS and Public Risk implications associated with this report.

However in its current condition Brindabella Road presents some safety concerns for the traveling public with significant sections of the roadway being unsuitable for large vehicles, caravans, campervans, motorcycles and bicycles.

Brindabella Road has varying conditions along its length. Some segments of the roadway traverses very steep terrain, is very narrow - not sufficient for two way traffic and is regularly impacted by extreme weather events. Around 45 kilometers of the road is unsealed.

WHS and Public risk implications associated with the delivery of upgrade works will be managed in accordance with Council's Integrated Management System

**OPTIONS:**

The Council may determine not to proceed with the recommendations referred to in this report or alternatively amend the recommendations.

- Receive and note the petition formally presented to Council on the 22 November 2018 from the Brindabella Road – Economic Link Incorporated to upgrade Brindabella Road
- Notify the chief petitioner in writing, recognising that the upgrade of Brindabella Road is a high priority strategic aim for Council
- Receive and note the Business Case prepared by SC Lennon & Associates Pty Ltd for the upgrade of Brindabella Road, noting that the business case is based on high level assumptions only at this stage

Note the completion of the detailed design for the 10.6km section of Brindabella Road between the Brindabella Valley and the ACT border as detailed in this report

**COUNCIL SEAL REQUIRED:**

Council seal is not required.

**COMMUNITY ENGAGEMENT AND COMMUNICATION:**

Community and stakeholder consultation and engagement for the upgrade of Brindabella Road has been ongoing.

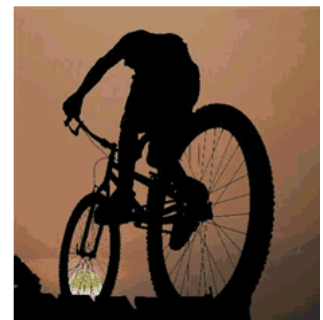
This includes the preparation of an advocacy plan to assist in seeking funding and support for the proposal.

**Attachments**

- 1 Brindabella Road Petition (under separate cover) - Confidential
- 2 Brindabella Road Business Case [↓](#)
- 3 Brindabella Road Detailed Design General Arrangement Drawings [↓](#)

# Brindabella Road Upgrade Business Case

November 2018



This Business Case has been prepared by:



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#### Acknowledgement of Country

We acknowledge the Traditional Owners and custodians of the land within the Snowy Valleys Council local government area and we pay respect to their Elders past, present and emerging.

#### Disclaimer

This report was prepared by SC Lennon & Associates Pty Ltd on behalf of Snowy Valleys Council. It has been prepared on the understanding that users exercise their own skill and care with respect to its use and interpretation. Any representation, statement, opinion or advice expressed or implied in this publication is made in good faith. SC Lennon & Associates Pty Ltd and the individual authors of this report are not liable to any person or entity taking or not taking action in respect of any representation, statement, opinion or advice referred to above.

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## Executive Summary

The purpose of this project is to demonstrate the business case for upgrading (sealing) Brindabella Road, a critical item of enabling infrastructure providing access for residents, businesses and tourists to and from the Snowy Valleys Council region and beyond. Currently, Brindabella Road is unsuitable for large vehicles, two-wheel drive cars, caravans, campervans, motorcycles and bicycles. It takes an estimated 2 hours and 39 minutes to travel the 128 kilometres from the Snowy Valleys to Canberra – an average speed of 48 km/hr. With sealing, and assuming a speed limit of 70 km/hr, a travel time saving of 50 minutes could be achieved.

Recognising the region's comparative advantages, which stem from its diverse landscape and natural resource base, and its potential for economic diversification, Snowy Valleys Council is committed to implementing a range of initiatives to address the region's economic development challenges and opportunities for growth. To this end, sealing Brindabella Road, to improve connectivity for businesses to the Canberra market and to enable development of the tourism industry to diversify and grow the region's economy, is a priority project.

The business case considers the estimated costs of upgrading Brindabella road using informed benchmarks. Together with an assessment of user and non-user benefits of an upgraded road, it estimates the net benefits of upgrading Brindabella Road, including potential regional economic and employment benefits.

The business case applies **cost-benefit analysis** techniques to quantify the net benefits of the road upgrade on the assumption that Brindabella Road is sealed and where data is available, it expresses benefit uplifts in quantitative terms. The cost-benefit analysis is complemented by a **regional economic impact analysis** using a model of the regional economy. It includes an estimate of the 'productivity uplift' the sealed road will deliver to the regional economy in order to quantify the wider economic benefits that the road upgrade will facilitate. A key element of the business case is an estimate of the industry value-added and regional employment benefits to be generated as a result of the proposed Brindabella Road upgrade.

The importance of tourism and its potential to diversify and grow the Snowy Valleys (and wider regional) economy is highlighted in a number of key strategic documents. Sealing Brindabella Road is a priority project in Snowy Valleys Council's economic development strategy, which highlights the importance of road transport infrastructure as a critical enabler of the region's economic development and its fundamental role in underpinning a prosperous economy.

The Brindabella Road upgrade and development of a new touring route to Canberra is also identified as a 'game-changer' project in the *Snowy Valleys Destination Management Plan*, while the *Riverina Murray Destination Management Plan* prioritises the upgrading of Brindabella Road as a 'Tier 1' project. The NSW Government's *Snowy Valleys Regional Economic Development Strategy 2018-2022* recommends upgrading Brindabella Road as a priority to support the continued development of the tourism sector to diversify the Snowy Valleys' economy.

Investing in an upgrade of Brindabella Road would deliver a multitude of economic and community benefits, including improvements in travel efficiency and road safety, amenity and liveability and access to business, education and employment opportunities. In addition to a range of direct road user benefits, upgrading Brindabella Road will deliver significant regional economic benefits including:

- Liveability for residents;
- Business productivity improvements; and
- Visitation uplift.

*Brindabella Road Upgrade Business Case /  
Executive Summary*

A cost estimate of \$123.6 million has been arrived at by reference to Independent Pricing and Regulatory Tribunal (IPART) NSW Guidelines. It is assumed construction of the road upgrade will be completed by 2020 and that the full benefits will begin to be realised by 2025 after allowing for a five-year 'ramp-up' period. The benefits have been estimated as follows:

	<b>Road Maintenance Savings</b>	<b>Visitor Benefits</b>	<b>Travel Time Savings</b>	<b>Vehicle Kilometre Savings</b>
Year 2025 after 'Ramp-up'	\$13,500 pa	\$27,036,324 pa	\$1,210,720 pa	\$843,150 pa
Year 2050 after 2% pa Growth	\$13,500 pa	\$50,246,230 pa	\$1,986,314 pa	\$1,383,277 pa

The largest category of benefits from upgrading Brindabella Road is derived from visitors to the region. These benefits are estimated on the basis of what visitors are 'willing to pay' for their experiences. Other benefits include: better health outcomes from improved access to health services; better social outcomes with improved access to support services and recreational and entertainment opportunities; better education outcomes with improved access to education services; higher incomes and improved lifestyle from better access to jobs and improved business investment opportunities; and fewer accidents. These and other benefits are difficult to quantify and value, but they are nevertheless very important.

The costs and benefits of sealing Brindabella Road are projected to 2050 and the following results are derived:

- Net Present Value at a discount rate of 7% is \$393 million.
- Benefit to Cost Ratio (BCR) at 7% discount rate is 4.8:1.
- Internal Rate of Return is 18.52%.

When value-added to the economy is considered, the benefit-cost ratio is increased from 4.18:1 to 8.99:1, meaning the project delivers \$8.99 of value for every dollar spent. Sensitivity analysis has been carried out on discount rates and a number of key variables. This confirms a project 'well worth doing' and a robust result.

A regional economic and employment benefits analysis has also been carried out to complement the findings of the cost-benefit analysis and to highlight the regional economic and employment benefits of upgrading Brindabella Road. The analysis shows that, from the direct investment of \$123.6 million, it is estimated there will be:

- An uplift in total economic output of \$205.41 million;
- An uplift in value-added to the Snowy Valleys economy of \$82.99 million;
- An increase in wages and salaries of \$42.13 million; and
- The creation of 378 jobs.

When the Brindabella Road upgrade project is complete and operational, and allowing for a five-year ramp-up period, it is estimated there will be, on an ongoing basis and with a 2% growth factor:

- An uplift in the Snowy Valleys' total output of \$84.61 million;
- An uplift in value-added to the Snowy Valleys economy of \$35.98 million;
- An increase in wages and salaries of \$16.55 million; and
- The creation of 286 jobs throughout the Snowy Valleys economy.

The project's benefit-cost ratio and the estimated regional economic and employment benefits demonstrate a strong and robust business case for upgrading Brindabella Road.

## 1. Introduction

### 1.1 Project Objective and Rationale for Investment

The purpose of this project is to demonstrate the business case for upgrading (sealing) Brindabella Road, a critical item of enabling infrastructure providing access for residents, businesses and tourists to and from the Snowy Valleys Council region and beyond.

The Snowy Valleys Council region, located in the western foothills of the Snowy Mountains and bordered by the Kosciuszko National Park and Murray River, covers 8,960 square kilometres. According to the 2016 Census data, the Snowy Valleys, with a population of 14,395, is home to 5,895 jobs. Data from the Department of Jobs and Small Business (June 2018) shows the Snowy Valleys Council area has an unemployment rate of 5.5% compared to the NSW average of 4.8% and a national average of 5.5%.

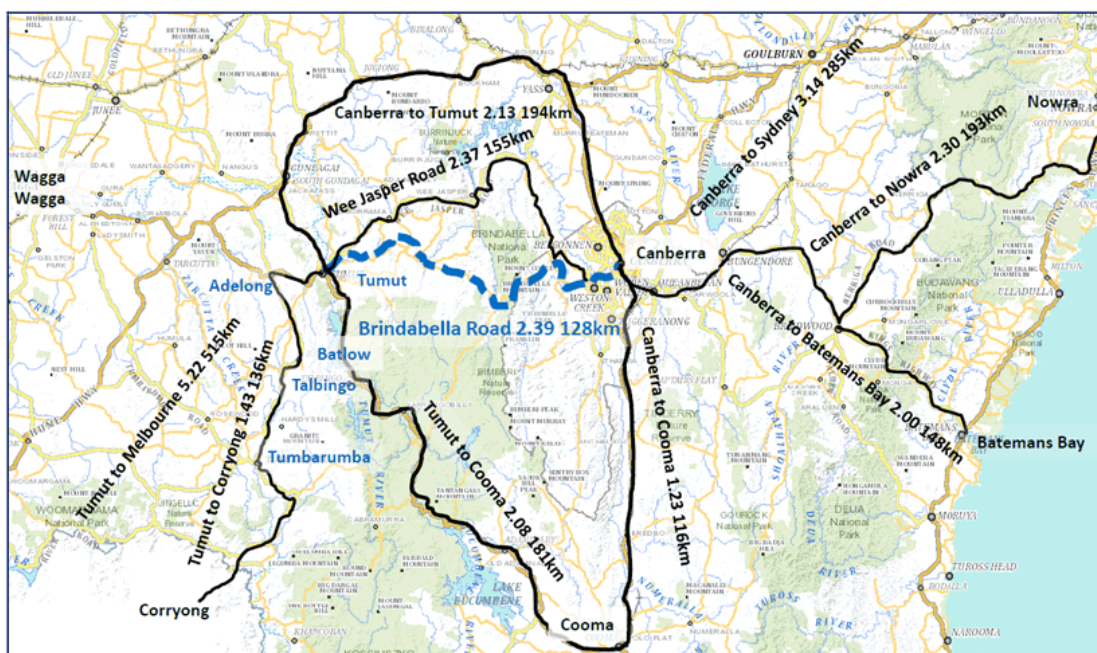
The 2016 New South Wales State and Local Government Area Population Projections (prepared by the NSW Department of Planning and Environment) indicate that the population of the Snowy Valleys Council region is expected to decline by 9.1% from 14,750 in 2011 to 13,400 in 2036. If this eventuates there will be serious consequences for the level of commercial and public services available in the region. The region's growth prospects and population profile present some challenges for economic development with regard to generating investment, business development and job creation, but decline is not inevitable.

Recognising the region's comparative advantages - which stem from its diverse landscape and natural resource base - and its potential for economic diversification, Snowy Valleys Council is committed to implementing a range of initiatives to address the region's economic development challenges. To this end, sealing Brindabella Road, to improve connectivity for businesses to the Canberra market and to enable development of the region's tourism industry to diversify and grow the local economy, is a priority project.

Brindabella Road links the Snowy Valleys in the west to Canberra in the east and crosses the Brindabella Ranges. It provides access from the ACT to the National Parks of Brindabella, Namagi, and Kosciuszko, to the townships of Tumut, Adelong, Batlow, Tumbarumba and other settlements, and further west into the Riverina-Murray tourist region and beyond. 45 kilometres of the 128-kilometre route is unsealed with narrow sections, sharp curves and rough surfaces. It can be slippery in wet conditions and as such it provides an unsafe driving environment. Piccadilly Circus just west of Canberra at the ACT/NSW border is a bottleneck and a high-accident area.

Currently, Brindabella Road is unsuitable for large vehicles, two-wheel drive cars, caravans, campervans, motorcycles and bicycles. It takes an estimated 2 hours and 39 minutes to travel the 128 kilometres from Tumut to Canberra – an average speed of 48 km/hr. With sealing, and assuming a speed limit of 70 km/hr, a travel time saving of 50 minutes could be achieved. Figure 1 shows the location of Brindabella Road in the context of other key routes in the region.

Investing in an upgrade of Brindabella Road would deliver a multitude of economic and community benefits, including improvements in travel efficiency and road safety, amenity and liveability and access to business, education and employment opportunities. Tourism is an emerging industry and future economic driver of the Snowy Valleys region. By providing a shorter and more desirable scenic touring route from Canberra through to Tumut, other towns in the Snowy Valleys and the broader Riverina-Murray region, upgrading and sealing Brindabella Road would be a game changer for the development of the Snowy Valleys and the broader region to the west as a tourist destination.

**Figure 1. Brindabella Road in Context**

Source: NSW Six Maps and Google Maps with interpretations by SC Lennon & Associates

## 1.2 The Case for Change

Brindabella Road's sub-standard quality represents an unrealised opportunity in the form of potential access from east to west and vice-versa for local residents and businesses, visitors and tourists. It can be seen from Figure 1 that sealing Brindabella Road would make it viable as a strategic link that would:

- Connect the Snowy Valleys region and beyond more directly to Canberra;
- Integrate the Snowy Valleys region more effectively into the 'daytrip catchment' of Canberra;
- Provide a more attractive touring route via the Snowy Valleys Way (i.e. from Corryong) to Canberra;
- Provide a more attractive touring route via the Hume Highway to Canberra catering for regional and capital city originating traffic;
- Provide a more attractive touring route from Canberra to Cooma to Tumut and back to Canberra; and
- Link in with wider touring routes such as from Omeo and Benambra and including the Upper Murray region and the whole of north-east Victoria

The existing conditions on the road are documented by Diana Gibbs and Partners (June 2017) and are represented in Figure 2. Snowy Valleys Council has engaged an engineering firm to design an upgrade of the 11 kilometres 'worst section' as shown in the figure. This section is subject to washouts and related hazards. The gravel section to the west of that has some isolated sealed sections and works are underway to address some of the safety issues concerning alignment and surface conditions.

*Brindabella Road Upgrade Business Case***Figure 2. Brindabella Road's Existing Conditions by Location**

Sealed		Gravel		Worst Section	Gravel	Sealed
12.8km	28.7km	8.2km	16.7km	11.0km	8.5km	16.5km
Snowy Mountains Hwy	Bombowiee Creek		Ridge Road	Brindabella Valley	Picadilly Circus	Cotter Road
Snowy Valleys Council		Buccleuch State Forest (FCNSW)		Snowy Valleys Council		ACT Government
Vol 2493pd 1997 volumes	Vol 2103pd	Vol 3563pd	Vol 773pd	Vol 923pd	Vol 2333pd	

Source: Diana Gibbs and Partners (June 2017) with interpretations by SC Lennon & Associates

The conditions on the unsealed sections of the road are illustrated in Figures 3 and 4 overleaf. It can be seen that the 'worst section' is unsuitable for normal clearance two-wheel drive cars while the section further west, while it may be acceptable for these types of vehicles, cannot be used by hire cars. Even the smoother sections of the unsealed road are not suitable for caravans due to tight corners and steep sections. This is not to say that these vehicles do not use the road on occasion, but safety concerns preclude the road from being designated a 'scenic route'.

Figure 5 illustrates a sealed section of Brindabella Road at the ACT end of the route. It is reported that this was designed as tourist road, although as shown in the image, no allowance was made at the time of construction for a verge for bicycles nor was allowance made for facilities including tourist stops and picnic areas.

Figure 6 illustrates a currently-sealed section of Brindabella Road at the eastern end at the Buccleuch State Forest in the Snowy Valleys Council area. This section of road is owned and managed by the Forestry Corporation of NSW. Similarly, although sealed to a high standard, no allowance has been made for associated infrastructure to facilitate the movement of tourists.

Upgrading the currently-unsealed sections of Brindabella Road to a standard which can facilitate the safe and efficient movement of tourists and other vehicles including residents and the movement of goods would provide a safer and more efficient road link resulting in:

- Enhanced level of safety for road users (fewer accidents).
- Lower maintenance costs for Council.
- More efficient travel for local residents, businesses, visitors and tourists (travel time savings), opening-up business opportunities between the Snowy Valleys and the ACT.
- Growth in the visitor economy (tourism) through higher levels of visitation to the Snowy Valleys and its various towns and settlements.
- Potential growth in the movement of produce (e.g. apples from Batlow) and goods from west to east and vice-versa.
- Amenity improvements for residents of the region with more convenient travel / better access to Canberra for medical, educational, cultural and recreational purposes.
- Convenient access to Canberra International Airport from west to east.
- Potential enhanced access to infrastructure associated with 'Snowy 2.0'.
- Enhanced access to critical communications infrastructure.
- 'Flow-on' benefits in the form of more business activity and employment throughout the Snowy Valleys regional economy and beyond.

**Figure 3. Part of the 'Worst' Section of Brindabella Road**



Source: Diana Gibbs and Partners (June 2017)

In addition to direct road user benefits outlined above, upgrading Brindabella Road will deliver significant regional economic benefits including:

- **Liveability for residents** - This will have direct benefits for existing residents and it will make the region more attractive to new residents. This in turn will create demand for new housing and demand for local goods and services. The jobs that are created will attract more residents with a ripple effect through the regional economy. This will be reflected in investment in businesses, again with a multiplier effect.
- **Business productivity improvements** - Businesses in the region will benefit from more efficient supply chains and delivery times and from access to an expanded labour pool. Productivity will also be enhanced by efficiencies in moving goods and services out of the region to markets - to the Canberra market and beyond, including exports of produce via Canberra Airport. The uplift in business productivity will in turn attract investment in business expansion and new business establishments, again with a multiplier effect.
- **Visitation uplift** - There will be an uplift in the numbers of domestic and international visitors staying in and moving through the region. This will increase spending in retail, hospitality and accommodation businesses as well as in businesses providing services directly to visitors. The uplift in visitor spending will in turn attract investment in 'visitor economy' business expansion and new business establishments, again with a multiplier effect.

**Figure 4. Brindabella Road, West of the 'Worst' Section**



Source: Diana Gibbs and Partners (June 2017)

**Figure 5. Sealed Section of Brindabella Road, Australian Capital Territory**



Source: Brindabella Road – The Economic Link Inc. (October 2018)

**Figure 6. Sealed Section of Brindabella Road, Buccleuch State Forest**



Source: Brindabella Road – The Economic Link Inc. (October 2018)

### 1.3 Strategic Alignment

Sealing Brindabella Road is a priority project in Snowy Valleys Council's economic development strategy, *Preparing for Prosperity: Snowy Valleys Council Region Economic Development Strategy, 2018-2022*. The economic development strategy highlights the importance of road transport infrastructure as a critical enabler of the region's economic development and its fundamental role in underpinning a prosperous economy.

The major industries that currently drive and support economic activity in the Snowy Valleys are agriculture (with the largest employer of Snowy Valleys residents being the beef cattle farming sector) and the softwood timber production and processing industry. The agriculture and softwood timber industries, including Australia's largest softwood processing mill, underpin the Snowy Valleys Council region's economic base. Specialised beef cattle farming employs more working residents of the Snowy Valleys than any other industry. The softwood timber industry is the Snowy Valleys' largest employer, centred around the Visy and Carter Holt Harvey softwood processing mills in Tumut and the Hyne mill in Tumbarumba.

Based on the Snowy Valleys region's comparative and competitive advantages, emerging opportunities include apple cider, premium cool climate wine, cool climate horticulture (such as chestnuts and blueberries), biomass energy using plantation timber residues, hydro-electricity generation, aged care and tourism. The Federal Government's announcement of a \$2 billion expansion of the Snowy Hydro Scheme and the associated upgrade of transmission lines will also provide a significant economic boost to the region. The Brindabella Road connection is a key piece of facilitating infrastructure for these projects.

Although relatively small in terms of its contribution to industry output and value-added compared to the region's economic drivers of agriculture, forestry and timber production, the Snowy Valleys' tourism industry is a significant provider of local jobs and is an industry which offers significant potential for growth. For example, the Tumbarumba to Rosewood Rail Trail has been approved by the NSW Government to be a pilot NSW rail trail, and there are likely

*Brindabella Road Upgrade Business Case*

to be food, wine and cycle tourism opportunities created by this. Australia's tourism industry continues to grow as new markets emerge, both domestically and overseas, particularly in Asia where the Indian, Malaysian and Chinese middle-class is driving much of the industry's income growth. According to IBISWorld (October 2017), over the five years through 2022-23, Australia's tourism industry revenue is expected to increase by an annualised 3.0% to total over \$150 billion.

Regional Australia's visitor economy is on an upward trajectory with visitors increasing on average by 4.1 per cent per annum over the past five years.<sup>1</sup> The drive tourism market is generating new income opportunities for many regions throughout Australia, which are taking full advantage of the growth in demand for drive tourism experiences by promoting touring routes and providing the facilities and services that visitors seek.

A large proportion of visitation to Snowy Valleys is generated by regional NSW and in particular, visitation from Albury and Wagga Wagga. However, Canberra, which is also in close proximity, currently has a low level of visitation to the region. Initiatives such as sealing, and safety improvements of Brindabella Road could have a large impact in attracting the Canberra market. An opportunity exists to expose the region to the Canberra market by sealing the Brindabella Road to create a critical mass of visitor expenditure to support the investment required to take full advantage of the region's tourism potential.

The Brindabella Road upgrade and development of a new touring route to Canberra is identified as a 'game-changer' project in the *Snowy Valleys Destination Management Plan* (July 2018), while the *Riverina Murray Destination Management Plan* (2018) prioritises the upgrading of Brindabella Road as a 'Tier 1' project. A large proportion of visitation to Snowy Valleys is generated by regional NSW and in particular, visitation from Albury and Wagga Wagga. However, Canberra which is also in close proximity, currently has a low level of visitation to the region. The strategy determines that initiatives such as sealing, and safety improvements of Brindabella Road could have a large impact in attracting the Canberra market.

The NSW Government's *Snowy Valleys Regional Economic Development Strategy 2018-2022* recommends upgrading Brindabella Road as a priority to support the continued development of the tourism sector to diversify the Snowy Valleys' economy. This and the other key strategic documents referred to above, recommend that a business case be prepared to explore the economic and tourism benefits of the road in order to inform investment and progress the development of the Brindabella Road upgrade.

## 1.4 Business Case Fundamentals: Productivity Uplifts and Wider Economic Benefits

The business case considers the estimated costs of upgrading Brindabella road using informed benchmarks. Together with an assessment of user and non-user benefits of an upgraded road, it estimates the net benefits of upgrading Brindabella Road, including potential regional economic and employment benefits.

The business case applies **cost-benefit analysis** techniques to quantify the net benefits of the road upgrade on the assumption that Brindabella Road is sealed and where data is available, it expresses benefit uplifts in quantitative terms. The cost-benefit analysis is complemented by a **regional economic impact analysis** using a model of the regional economy. It includes an estimate of the 'productivity uplift' the sealed road will deliver to the regional economy in order to quantify the **wider economic benefits** that the road upgrade will facilitate. A key element of the business case is an estimate of the industry value-added and regional employment benefits to be generated as a result of the proposed Brindabella Road upgrade.

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<sup>1</sup> <http://www.tourisminvestment.com.au/en/investment-opportunities/Regional-Australia.html>

## 1.5 The Significance of 'Productivity Uplift' and Wider Economic Benefits

The tool most often applied to evaluate the economic and community benefits of road infrastructure projects or project upgrades is cost-benefit analysis (CBA). While this delivers positive results for high-volume roads in urban areas, it is often the case that proposals in Australia's rural and remote regions tend to 'not stack up'. In fact, investment in most roads in rural areas in Australia is difficult to justify only by reference to the traffic volumes they carry. The fundamental reason for this is that the road infrastructure benefits that are normally measured (e.g. aggregate travel time savings, accident cost savings, vehicle operating cost savings, etc.) rely on high traffic volumes to justify the capital and ongoing costs of building or upgrading a road.

It is stated by Austroads (2016, *Reforming Remote and Regional Road Funding in Australia*) that "The rationale for remote and regional roads is typically related to improving accessibility to a particular region, leading to associated improvements in wider social and economic outcomes".

Moreover, according to the Queensland Department of Transport and Main Roads (2011, *Cost Benefit Analysis Manual*), "International experience suggests that these wider economic benefits for transport projects add between 10% and 40% to the conventionally measured benefits". However, this relates to urban projects where the direct benefits measured by conventional means are significant. In rural and remote areas, the aggregate of direct user benefits is lower, so the relative significance of the wider economic benefits in Australia's regional, rural and remote areas is much greater.

This means travel time and vehicle operating cost savings are often not the primary reason for investing in remote, rural and regional roads. Accepting that the principal purpose of building roads is the wider economic benefits they generate, it follows that the emphasis of evaluations of road projects in remote, rural and regional areas should be on estimating the value of the productivity dividend delivered to the regional economy.

Transport for NSW (2016, *Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives*, NSW Government) explains the concept of wider economic benefits in terms of four categories:

- Agglomeration Economies - As a city/region grows and becomes denser, its firms become more productive. The productivity benefits arise from proximity and clustering explained by economies of scale, access to more customers, access to more suppliers, knowledge spill overs and access to the workforce, enabling better job matching.
- Increased competition as a result of better transport - Lower transport costs will increase firms' market coverage enabling them to compete in new markets.
- Increased output in imperfectly-competitive markets - When a transport project reduces business travel time, firms can respond to cost savings by increasing output.
- Economic welfare benefits arising from improved labour supply - Transport investments reduce the generalised travel cost that leads to the following labour market impacts:
  - More people choose to work as a result of commuting travel time savings;
  - Some people choose to work longer hours because they spend less time commuting; and
  - Some people change to a higher-paid and more productive job, as better transport improves the accessibility of firms and workers.

Australian Transport Assessment and Planning (<https://atap.gov.au/about/index.aspx>) has developed the concept of 'productivity metrics'. In this framework it is stated that productivity benefits directly affect Gross Domestic Product (GDP), a key indicator of economic activity. They lead to higher wages for workers, higher profits for businesses, lower prices for consumers and higher tax receipts for governments. Where they improve international

competitiveness, they lead to a higher exchange rate, which improves the purchasing power of Australians to buy foreign goods and services.

Productivity is described as the efficiency with which inputs (labour, capital, raw materials, intermediate goods and services) are transformed into outputs (goods and services). An increase in productivity is said to occur when the same output can be produced from fewer inputs or greater output can be produced from the same inputs. Productivity improvements are a source of economic growth and higher per capita income.

Efficiency (cost reduction) effects are achieved by road improvement projects through shorter distances, faster speeds and reduced incident delays for travel by workers. The more efficient movement of freight reduces transport costs, directly lowering the prices of inputs to production and the costs of distributing outputs.

## 1.6 A Methodology for Estimating Wider Economic Benefits

In order to reliably estimate the wider economic benefits generated by a road project, the following methodology has been developed by SC Lennon and Associates:

**Step 1: Document the Output of Industry Sectors** - Data on output by industry sector is sourced from the web-based product 'REMPAN Economy'.

**Step 2: Estimate Output Uplift for Industry Sectors** - This step focuses on the key sectors, which in many regional and remote areas are agriculture, mining, transport and tourism. Estimates may be informed by case studies and supply chain analysis to identify the factors of production that can be affected to deliver a productivity uplift.

**Step 3: Model the Multiplier Effect** - Uplifts in outputs in key industry sectors will have a multiplier effect in the regional economy. From a direct increase in output there will be an increase in the demand for intermediate goods and services. These 'industrial effects' include multiple rounds of flow-on effects, as servicing sectors increase their own output and demand for local goods and services in response to the direct change to the economy. The increases in direct and indirect output would typically correspond to the creation of jobs in the economy. Corresponding to this change in employment would be an increase in the total of wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. Total output, including all direct, industrial and consumption-induced effects can then be estimated. REMPLAN Economy Software provides a menu-driven model to make these estimates.

**Step 4: Estimate Value-Added** - The productivity dividend for a region is measured in terms of 'value-added' where this is defined as follows: *"Value-Added data represents the marginal economic value that is added by each industry sector in a defined region. Value-added can be calculated by subtracting local expenditure and expenditure on regional imports from the output generated by an industry sector, or alternatively, by adding the wages and salaries paid to local employees, the gross operating surplus and taxes on products and production. Value-added by industry sector is the major element in the calculation of Gross Regional Product / Gross State Product / Gross Domestic Product"* (source: REMPLAN Economy Software, December 2017). Again, REMPLAN Economy Software provides a menu-driven model to provide an estimate of value-added.

**Step 5: Cost-Benefit Analysis including Wider Economic Benefits** - The traditional variable in the cost-benefit analysis (e.g. savings in travel time, vehicle operating costs and accident costs) plus the direct benefits to visitors measured by spending (willingness to pay) forms the basis of the CBA and the estimate of value-added to the regional economy is added to the benefits side of the equation (but reported separately).

## 2. Brindabella Road Upgrade Costs

### 2.1 Estimate of Road Construction Costs

Brindabella Road upgrade construction costs have been estimated using industry-accepted benchmarks sourced from the New South Wales Independent Pricing and Regulatory Tribunal (IPART). An estimate of the cost of constructing a sealed rural road is provided in Table 1.

**Table 1. Estimate of Per Kilometre Sealed Rural Road Construction Cost**

Item	Cost / km	Comments
Construction	\$2,322,000	Item 1.6 – two-lane rural road
Guide Posts	\$5,500	Item 1.8
Safety Barriers	\$61,500	Item 1.8
<b>Total</b>	<b>\$2,389,000</b>	

Source: IPART NSW, April 2014, Local Infrastructure Benchmarking Costs

It is assumed that a high level of safety will be provided for cyclists including measures such as a widened verge on sharp corners, an appropriate speed limit and warning signs.

On this basis, the cost of constructing 45 kilometres of the Brindabella Road (\$2,389,000 x 45 kilometres) would be \$107,505,000. With an allowance on top of the construction costs for design fees, contract administration and contingencies at 15% (1.15 \* \$107,505,000), **the total Brindabella Road upgrade construction cost would be in the order of \$123.6 million.**

### 2.2 Estimate of Road Maintenance Costs

#### Unsealed Roads

There are several factors which will impact the condition of a gravel road (and the interval between when the road needs grading) these include; type of gravel in the base layer, pavement crossfall, drainage, terrain, subgrade, weather conditions and traffic volumes.

The two main activities required to keep unsealed network serviceable are gravel re-sheeting and grading. A layer of gravel is provided through gravel re-sheeting and then grading at intervals is undertaken to restore a smooth-running surface.

In addition to grading, a re-sheeting program is required because the gravel layer is continually worn away. Without a depth of gravel, a satisfactory running surface cannot be provided. Gravel is required to bridge the subgrade to prevent rutting, bogging and provide satisfactory traction under wet conditions.

A depth of gravel also allows a satisfactory cross fall to be re-established when grading is undertaken which allows water to drain from the surface and minimise damage.

It is assumed a layer of gravel on an unsealed road will last approximately 10 years. Therefore, a desirable level of service is to re-sheet one tenth of the network per year.

*Brindabella Road Upgrade Business Case***Sealed Roads**

Sealed maintenance includes pothole patching, edge patching, shoulder maintenance, and vegetation control. Sealed roads require re-sheeting every 10 years.

An estimate of maintenance costs for sealed and unsealed roads is provided in Table 2.

**Table 2. Estimate of Per Kilometre Road Maintenance Costs**

Road Type	Maintenance/km per annum	Renewal/km over 10 Years	Renewal/km per annum	Total Cost per annum
Sealed	\$500	\$22,000	\$2,200	\$2,700
Unsealed	\$2,000	\$10,000	\$1,000	\$3,000
<b>Notes</b> <ul style="list-style-type: none"> <li>- Unsealed maintenance includes table drains, mitre drains and a minimum amount of additional gravel in conjunction with a gravel re-sheeting programme and one light grade per year.</li> <li>- Sealed maintenance includes pothole patching, edge patching, shoulder maintenance, and vegetation control.</li> <li>- Unsealed renewal is complete gravel re-sheeting.</li> <li>- Sealed renewal is complete asphalt re-sheeting.</li> </ul>				

Source: Cobar Shire Council, 2018, Briefing Paper – Regional Roads

It can be seen from the table above that there is a saving in the order of \$300/ kilometre per annum with a sealed road. These road maintenance cost savings, which for 45 kilometres of a sealed Brindabella Road, amount to a saving of \$13,500 per annum, are reflected in the cost-benefit analysis in Chapter 4 of this Business Case.

### 3. Defining Economic and Social Benefits

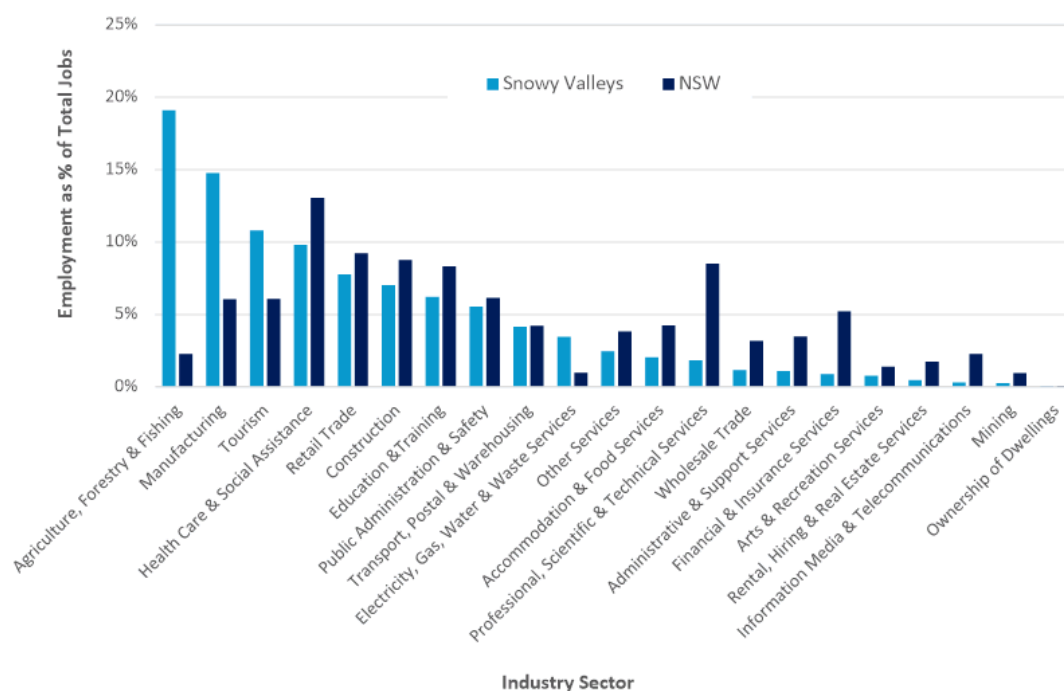
#### 3.1 Brindabella Road and the Visitor Economy

The industries that currently drive and support economic activity in the Snowy Valleys are agriculture and softwood timber production. Based on the Snowy Valleys region's comparative and competitive advantages, emerging industry opportunities include apple cider, premium cool climate viticulture and horticulture, biomass energy using plantation timber residues, hydro-electricity generation, aged care and tourism.

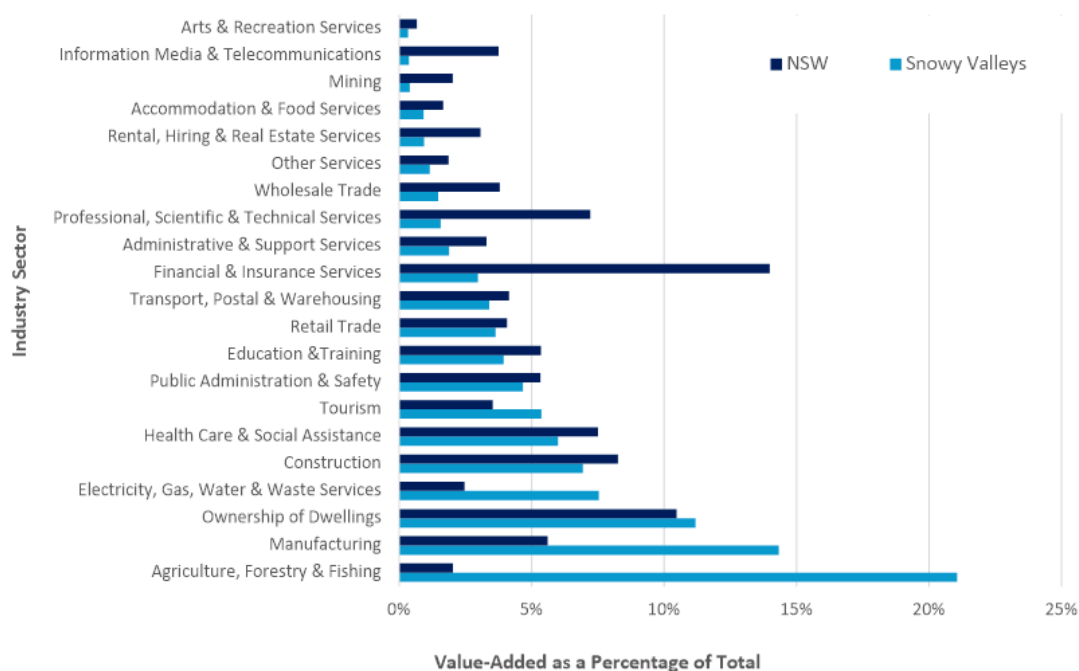
Along with the region's economic drivers of agriculture, forestry and timber production, the Snowy Valleys' tourism industry is a key sector of employment in the Snowy Valleys accounting for 663 local jobs or 10.8% of total employment (see Figure 7).

Although the local tourism industry is relatively small in terms of its contribution to industry output and value-added compared to the region's economic drivers of agriculture, forestry and timber production (see Figure 8), its contribution to employment and its potential to capture new visitor markets with investment in critical infrastructure and attractions offers significant potential for growth. For example, the Tumbarumba to Rosewood Rail Trail has been approved by the NSW Government to be a pilot NSW rail trail, and there are likely to be food, wine and cycle tourism opportunities created by this.

**Figure 7. Employment by Industry, Snowy Valleys Council Region and NSW, 2017**



Source: REMPLAN (December 2017)

**Figure 8. Value-Added by Industry, Snowy Valleys Council Region and NSW, 2017**

Source: REMPLAN (December 2017)

The Snowy Valleys' existing visitor attractions include:

- Kosciuszko National Park, the region's key attraction for camping, fishing, hiking, wildlife spotting and water sports, spans a wide area of the Snowy Valleys with the three main gateways to the Park being in the Khancoban area, the Tumut area and the Yarrangobilly area.
- Other nature-based products including a number of nature-based attractions which are widely spread across the Snowy Valleys including waterways, State parks and nature reserves.
- Adelong Falls Gold Mill Ruins - The historic township of Adelong is classified by the National Heritage Trust of Australia, with buildings dating back to the gold rush. The gold mining works at the Adelong Falls Gold Mining Ruins has interpretive signage and pools for swimming.
- Tumbarumba to Rosewood Rail Trail - Cycling in particular, is an emerging trend in the region, including identified strengths in road cycling and emerging mountain biking, and the region is now home to New South Wales' first Rail Trail development.
- The Tumbarumba Wine Region is home to award-winning Courabyra Wines and the well-established Tumbarumba Wines Escape. Other wineries include Johansen Wines, Obsession Wines, Mount Tumbarumba Wines, and Excelsior Peak.
- Festivals and Events which draw a number of visitors to the Snowy Valleys Council region every year.

The *Snowy Valleys Visitor Services Strategy* (2018) identifies opportunities to enhance the Snowy Valleys' brand recognition amongst potential visitors, including new regional-level branding supported by township place-making and destination branding initiatives. One potential aspect of branding the region that appears to be underdeveloped is the legacy of Miles Franklin (see text box).

*Brindabella Road Upgrade Business Case***Text Box – Miles Franklin**

Miles Franklin (14 October 1879 – 19 September 1954) was born at Talbingo, New South Wales, and grew up in the Brindabella Valley on the Brindabella Station. She was an Australian writer and feminist who is best known for her novel *My Brilliant Career*, published in 1901. The book tells the story of an irrepressible teenage girl, Sybylla Melvyn, growing to womanhood in rural New South Wales. It was published in 1901 with the support of Australian writer Henry Lawson.

Miles Franklin was committed to the development of a uniquely Australian form of literature, and she actively pursued this goal by supporting writers, literary journals, and writers' organisations. She has had a long-lasting impact on Australian literary life through her endowment of a major annual prize for literature about "Australian Life in any of its phases", the Miles Franklin Award. Her impact was further recognised in 2013 with the creation of the Stella Prize, awarded annually for the best work of literature by an Australian woman.

Source: [https://en.wikipedia.org/wiki/Miles\\_Franklin](https://en.wikipedia.org/wiki/Miles_Franklin)

Snowy Valleys Council is preparing a branding strategy that will strengthen the region's visitor economy. The *Snowy Valleys Destination Management Plan* (June 2018) observes that the Snowy Valleys received over 422,300 visitors in the 2016/17 financial year, capturing a higher proportion of overnight visitors (47%) than the Riverina Murray region and the regional NSW average.

The Snowy Valleys attracts a significant proportion of holiday visitors, accounting for 62% of all daytrip visitors, 58% of overnight visitors and 52% of international visitors. Visitor activity data highlights a low proportion of visitors who are eating out when compared to Regional NSW and conversely a much larger proportion who are experiencing nature-based tourism activities. This highlights the strength of the region in nature-based tourism but also the need for the Snowy Valleys to deliver an improved food and beverage experience, which can leverage the region's local produce strengths.

The diversity of the natural environment and nature experiences on offer in the Snowy Valleys is currently the primary driver of visitation to the region. However, to date, development of supporting infrastructure and products has been limited and could support further enhancement of adventure, sport and recreation product. Further development and coordination of supporting complementary products across both food and agritourism will enhance the appeal of the Snowy Valleys as a touring and nature-based destination.

Data published by the Australian Trade and Investment Commission shows that regional Australia's visitor economy is on an upward trajectory, with visitors increasing on average by 4.1 per cent per annum over the past five years. The drive tourism market is generating new income opportunities for many regions throughout Australia, which are taking full advantage of the growth in demand for drive tourism experiences by promoting touring routes and providing the facilities and services that visitors seek.

The Brindabella Road upgrade and development of a new touring route to Canberra is identified as a priority project in the NSW Government's *Snowy Valleys Regional Economic Development Strategy 2018-2022* and a 'game-changer' project in the *Snowy Valleys Destination Management Plan* (July 2018). The *Riverina Murray Destination Management Plan* (2018) prioritises the upgrading of Brindabella Road as a 'Tier 1' project. It places emphasis on touring routes and refers to the concept of 'hero routes' noting there is potential to capture greater yield and grow the length of stay from touring visitors, which should be considered a priority for the region. It can be seen from Figure 9 that the Snowy Mountains Way is a priority route. Should Tumut, Adelong, Batlow, Talbingo, Tumberumba and other settlements in the region be connected to Canberra via a fully-sealed Brindabella Road, it would become one of the 'hero routes'.

*Brindabella Road Upgrade Business Case*

A large proportion of visitation to Snowy Valleys is generated by regional NSW and in particular, visitation from Albury and Wagga Wagga. However, Canberra, which is also in close proximity to the region, currently has a low level of visitation to the Snowy Valleys. The Australian Capital Territory (ACT), with a population of 411,000, abuts the western border of the Snowy Valleys. Nearby Queanbeyan has a population of 36,000. The ACT generates over 4.5 million domestic overnight and day trips per annum and at present a low proportion of these focus on regions to the west.

Initiatives such as sealing, and safety improvements of Brindabella Road would have a large impact in attracting the Canberra market to create a critical mass of visitor expenditure to support the investment required to take full advantage of the region's tourism potential.

**Figure 9. Riverina Murray Region Touring Routes**



Source: Riverina Murray Destination Management Plan (2018)

Sealing Brindabella Road would also facilitate an increase in international visitor numbers to the Snowy Valleys region and beyond. With the arrival of Singapore Airlines and the introduction of international flights to Canberra Airport in 2016, and the subsequent arrival of Qatar Airways in February 2018, there is potential for the Snowy Valleys and the wider Riverina-Murray tourism region to tap into latent demand from a growing international visitor market.

Tourism in Australia is currently on an upward trajectory and according to IBISWorld (October 2017), over the five years through 2022-23, Australia's tourism industry revenue is expected to increase by an annualised 3.0% to total over \$150 billion. Australia's international visitor economy continues to grow as new markets emerge, particularly in Asia where the Indian, Malaysian and Chinese middle-class is driving much of the industry's income growth.

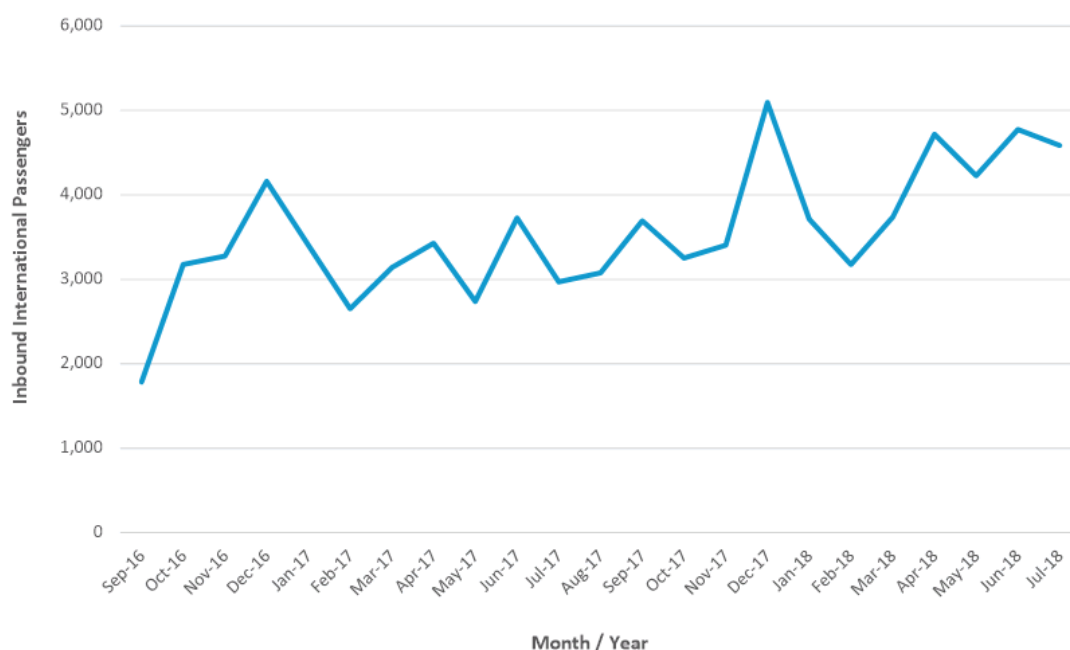
Canberra Airport functions as a 'second Sydney Airport' without a curfew and at present, the two international airlines that operate from Canberra Airport, Qatar and Singapore Airlines, have identified opportunities to grow

*Brindabella Road Upgrade Business Case*

international visitation if opportunities for tours to the west are improved. One market that has been identified is the visiting parents of overseas students who wish to spend more time in the region.

Canberra Airport currently receives 142,000 inbound domestic passengers per month (up from 123,000 per month in 2015) as well as 4,200 inbound internationals per month (up from 1,400 per month in September 2016 when international flights commenced (see Figure 10). To July 2018 Canberra Airport has received a total of 47,373 international arrivals.

**Figure 10. Monthly Inbound International Passengers, Canberra Airport, September 2016 to July 2018**



Source: Bureau of Infrastructure, Transport and Regional Economics (October 2018) with interpretations by SC Lennon & Associates

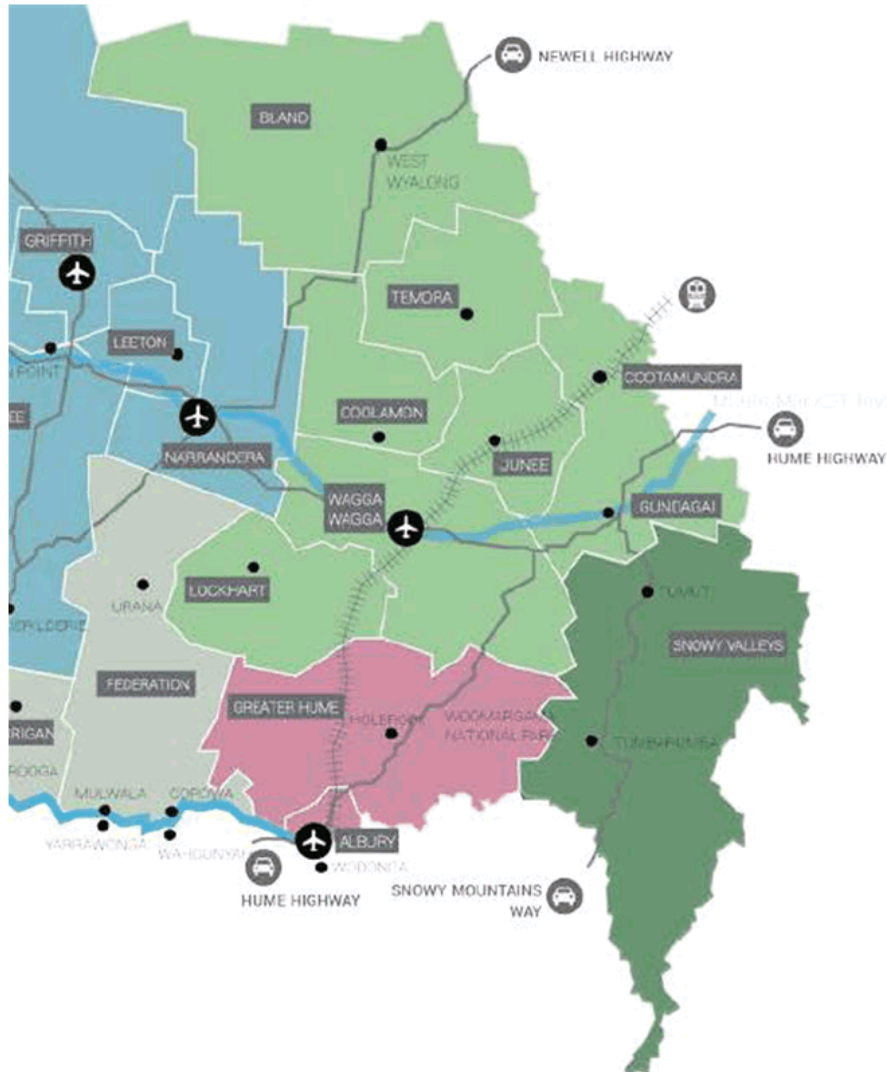
There is potential for growth and diversification of the Snowy Valleys' tourism offer, as national and international market trends support opportunities to capitalise on demand for regional experiences including food and wine experiences, historical attractions and natural attractions.

By providing international visitors to Australia with a shorter and more desirable scenic touring route from Canberra through to Tumut, Adelong, Batlow, Tumbarumba, other towns in the Snowy Valleys and the broader Riverina-Murray region, upgrading and sealing Brindabella Road would be a gamechanger for the development of the Snowy Valleys as a tourist destination, generating a substantial tourism uplift for the Snowy Valleys and the wider Riverina Murray region.

### 3.2 Potential Tourism Uplift

The preceding discussion has highlighted the lack of connectivity between areas west of the Brindabella Ranges and Canberra. The origins of visitors to the Snowy Valleys Council region and regions to the west are shown in Table 3. The regions referred to in the table are shown in Figure 11.

**Figure 11. The Snowy Valleys, Eastern Riverina and Albury Hume Tourist Regions**



Source: Riverina Murray Destination Management Plan (2018)

**Table 3. Origin of Visitors (%), Snowy Valleys, Eastern Riverina and Albury Hume Regions**

Origins of Visitors - Percent	Destinations		
	Eastern Riverina	Albury Hume	Snowy Valleys
Sydney	24%	17%	27%
Regional NSW	40%	25%	42%
Melbourne	10%	27%	10%
Regional Victoria	10%	17%	7%
Brisbane	2%	3%	1%
Regional Queensland	3%	2%	2%
Adelaide	3%	1%	1%
Regional South Australia	1%	1%	1%
ACT	6%	5%	8%
Other	1%	2%	1%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: Riverina Murray Destination Management Plan (2018)

The Snowy Valleys receives a high level of its visitation from Regional NSW (42%), reported by tourism officials to be generated from the west, from Wagga Wagga and surrounds. However, it receives only 8% from the ACT – immediately to the east. Snowy Valleys receives a small proportion of its visitors from Melbourne and Regional Victoria, reflecting the fact that it is by-passed by traffic heading for Canberra from the south. These percentages are translated into numbers in Table 4 by application to total visitation data. Hence, the numbers are totals for the main market segments – domestic day-trippers, domestic overnight and international overnight visitors. A total for all trips to the wider region is shown along with a percentage breakdown.

**Table 4. Origin of Visitors (Number) Snowy Valleys, Eastern Riverina and Albury Hume Regions**

Origins of Visitors - Numbers	Destinations				
	Eastern Riverina	Albury Hume	Snowy Valleys	Total Region Trips	Total Region %
Sydney	494,663	201,882	113,688	<b>810,234</b>	22%
Regional NSW	824,439	296,886	176,849	<b>1,298,173</b>	35%
Melbourne	206,110	320,636	42,107	<b>568,853</b>	16%
Regional Victoria	206,110	201,882	29,475	<b>437,467</b>	12%
Brisbane	41,222	35,626	4,211	<b>81,059</b>	2%
Regional Queensland	61,833	23,751	8,421	<b>94,005</b>	3%
Adelaide	61,833	11,875	4,211	<b>77,919</b>	2%
Regional South Australia	20,611	11,875	4,211	<b>36,697</b>	1%
ACT	123,666	59,377	33,685	<b>216,728</b>	6%
Other	20,611	23,751	4,211	<b>48,572</b>	1%
<b>Total Visits</b>	<b>2,061,097</b>	<b>1,187,542</b>	<b>421,068</b>	<b>3,669,707</b>	<b>100%</b>

Source: Riverina Murray Destination Management Plan (2018) and calculations by SC Lennon &amp; Associates

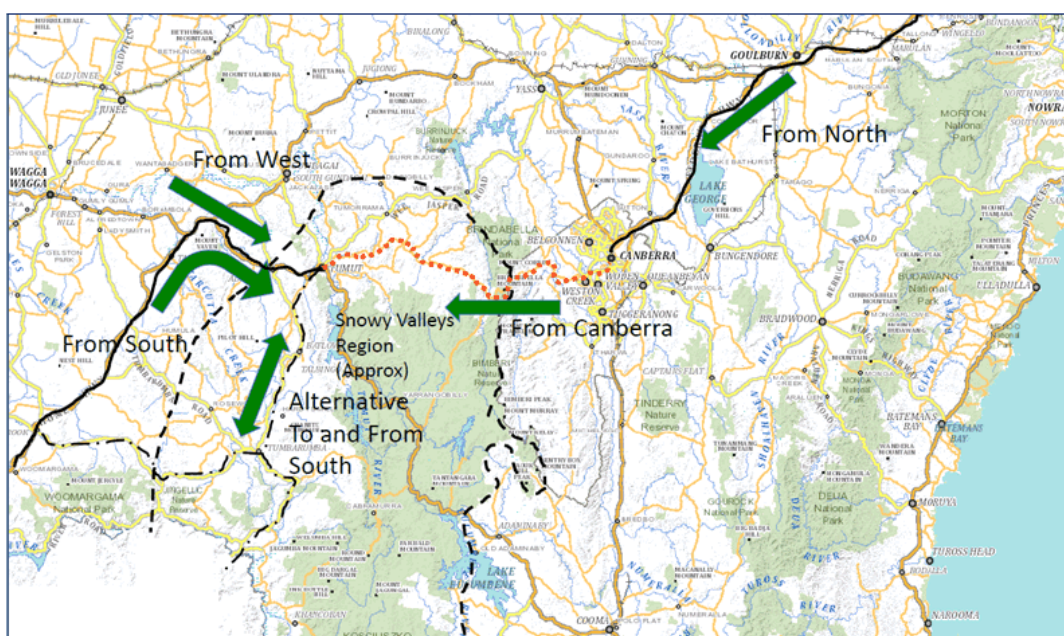
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Table 4 shows that the total region combined (Snowy Valleys, Eastern Riverina and Albury Hume) receives significantly less visitation from the ACT (6%) than it does from Regional NSW (to the west) (35%) despite the fact that the ACT is the most populous region in proximity.

Snowy Valleys attracts significantly less visitation from Sydney, Melbourne and Regional Victoria indicating isolation from Hume Highway traffic – due to the lack of connectivity to Canberra.

Upgrading Brindabella Road will provide a viable connection from the Hume Highway through the Snowy Valleys region to Canberra. This will have the effect of increasing visitation to the region from Canberra and from Hume Highway traffic. There will also be visitation uplift from the western regions of New South Wales taking the opportunity to travel to Canberra via the Snowy Valleys region. The Snowy Mountains Way can also be expected to become more attractive to visitors. The origins of the captured visitation are illustrated in Figure 12.

**Figure 12. The Snowy Valleys Region's Origins of Captured Visitation with Upgraded Brindabella Road**



Source: SC Lennon & Associates

In order to estimate the visitation uplift, the visitor numbers to the wider region (Albury Hume, Eastern Riverina and Snowy Valleys combined) are expressed as a proportion of the population in the places where they originate, as shown in Table 5 overleaf.

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**Table 5. Visitation Uplift Estimate with Upgraded Brindabella Road, Snowy Valleys, Eastern Riverina and Albury Hume Regions**

Origins of Visitors	Population	Total Region Trips	Market Penetration - Trips to Region/ Pop.	With BB Road (See Note 1)	Region Trips with BB Road	Region Trips Uplift with BB Road	Day Trip 51.5%	Dom. O/N 47.4%	Intl. O/N 1.1%
Sydney	4,694,459	810,234	17.26%	17.60%	826,438	16,205	8,345	7,681	178
Regional NSW	3,044,815	1,298,173	42.64%	43.49%	1,324,136	25,963	13,371	12,307	286
Melbourne	4,725,316	568,853	12.04%	12.28%	580,230	11,377	5,859	5,393	125
Regional VIC	1,453,933	437,467	30.09%	30.69%	446,216	8,749	4,506	4,147	96
Brisbane	1,254,209	81,059	6.46%	6.59%	82,680	1,621	835	768	18
Regional QLD	3,594,668	94,005	2.62%	2.67%	95,885	1,880	968	891	21
Adelaide	1,324,279	77,919	5.88%	6.00%	79,477	1,558	803	739	17
Regional SA	388,775	36,697	9.44%	9.63%	37,431	734	378	348	8
ACT	403,468	216,728	53.72%	64.46%	260,074	43,346	22,323	20,546	477
Other	np	48,572	np	np	48,572	-	-	-	-
		<b>3,669,707</b>		<b>Total</b>	<b>3,781,141</b>	<b>111,434</b>	<b>57,388</b>	<b>52,820</b>	<b>1,226</b>
<b>Note 1 - Market penetration for all origins increased by 2% except ACT 20%</b>									

Source: Australian Bureau of Statistics and SC Lennon &amp; Associates

Table 5 shows:

- The population (2016) of the origin areas of visitors to the region. While it is recognised that international trips do not relate to population numbers in Australia, these make up a small proportion of total trips. The population of various regions in Australia is a reasonable proxy for the trip generation capacity of the region.
- The total number of trips attracted to the region from each of the origin areas.
- An estimate of 'market penetration' – trips to the region / population of the origin area.
- An estimate of market penetration uplift with the Brindabella Road upgrade. These uplifts are based on a conservative 2% increase in market penetration for all origins and a 20% uplift for the ACT, which is an uplift of 43,346 trips. It is noted that the ACT produces in the order of 4.6 million domestic visitor trips per annum of which around 2.2 million are for 'holidays'. On this basis, the estimated uplift is 20% of all holiday trips is reasonable, given the proximity of the region to the ACT. It can be expected that a large proportion of these trips will be additional trips taken by ACT residents as the new opportunities open up following the Brindabella Road upgrade.
- An estimate of wider region trips and uplift with the higher levels of market penetration.
- A breakdown of the visitation into the main market segments – domestic day trips, domestic overnight trips and international trips – based on data from Tourism Research Australia (TRA).

The next step is to translate the estimate of visitation uplift into visitor spend – see Table 6.

**Table 6. Estimate of Visitor Spend Uplift with Upgraded Brindabella Road, Snowy Valleys, Eastern Riverina and Albury Hume Regions**

Year	Uplift - No Ramp Up +2.0%pa				Ramp Up Day Trip	Uplift - With Ramp Up				Spend per Trip Real +0.005%pa				Uplift in Spend		Total Spend Uplift
	Day Trip	Domestic Overnight	Internatn'l Overnight	Visitors Total		Domestic Overnight	Internatn'l Overnight	Visitors Total	Day Trip	Domestic Overnight	Internatn'l Overnight	Day Trip	Domestic Overnight	Domestic Overnight	Internatn'l Overnight	
2017	-	-	-	-	0%	-	-	-	-	\$75	\$336	\$1,206	\$0	\$0	\$0	\$0
2018	-	-	-	-	0%	-	-	-	-	\$75	\$338	\$1,212	\$0	\$0	\$0	\$0
2019	-	-	-	-	0%	-	-	-	-	\$76	\$339	\$1,218	\$0	\$0	\$0	\$0
2020	57,388	52,820	1,226	111,434	0%	-	-	-	-	\$76	\$341	\$1,224	\$0	\$0	\$0	\$0
2021	58,536	53,876	1,250	113,662	20%	11,707	10,775	250	22,732	\$77	\$343	\$1,230	\$895,736	\$3,693,422	\$307,646	\$4,896,804
2022	59,707	54,954	1,275	115,936	40%	23,883	21,981	510	46,374	\$77	\$344	\$1,236	\$1,836,437	\$7,572,254	\$630,736	\$10,039,427
2023	60,901	56,053	1,301	118,254	60%	36,541	33,632	780	70,953	\$77	\$346	\$1,243	\$2,823,798	\$11,643,477	\$969,851	\$15,437,125
2024	62,119	57,174	1,327	120,620	80%	49,695	45,739	1,061	96,496	\$78	\$348	\$1,249	\$3,859,566	\$15,914,304	\$1,325,592	\$21,099,463
2025	63,361	58,317	1,353	123,032	100%	63,361	58,317	1,353	123,032	\$78	\$350	\$1,255	\$4,945,552	\$20,392,191	\$1,698,581	\$27,036,324
2026	64,629	59,483	1,380	125,493	100%	64,629	59,483	1,380	125,493	\$78	\$351	\$1,261	\$5,069,685	\$20,904,035	\$1,741,215	\$27,714,936
2027	65,921	60,673	1,408	128,002	100%	65,921	60,673	1,408	128,002	\$79	\$353	\$1,268	\$5,196,934	\$21,428,726	\$1,784,920	\$28,410,581
2028	67,240	61,887	1,436	130,562	100%	67,240	61,887	1,436	130,562	\$79	\$355	\$1,274	\$5,327,377	\$21,966,587	\$1,829,721	\$29,123,686
2029	68,584	63,124	1,465	133,174	100%	68,584	63,124	1,465	133,174	\$80	\$357	\$1,280	\$5,461,095	\$22,517,949	\$1,875,647	\$29,854,691
2030	69,956	64,387	1,494	135,837	100%	69,956	64,387	1,494	135,837	\$80	\$359	\$1,287	\$5,598,168	\$23,083,149	\$1,922,726	\$30,604,044
2031	71,355	65,675	1,524	138,554	100%	71,355	65,675	1,524	138,554	\$80	\$360	\$1,293	\$5,738,682	\$23,662,536	\$1,970,987	\$31,372,205
2032	72,782	66,988	1,555	141,325	100%	72,782	66,988	1,555	141,325	\$81	\$362	\$1,300	\$5,882,723	\$24,256,466	\$2,020,458	\$32,159,647
2033	74,238	68,328	1,586	144,151	100%	74,238	68,328	1,586	144,151	\$81	\$364	\$1,306	\$6,030,379	\$24,865,303	\$2,071,172	\$32,966,855
2034	75,723	69,694	1,617	147,035	100%	75,723	69,694	1,617	147,035	\$82	\$366	\$1,313	\$6,181,742	\$25,489,422	\$2,123,158	\$33,794,323
2035	77,237	71,088	1,650	149,975	100%	77,237	71,088	1,650	149,975	\$82	\$368	\$1,319	\$6,336,904	\$26,129,207	\$2,176,450	\$34,642,560
2036	78,782	72,510	1,683	152,975	100%	78,782	72,510	1,683	152,975	\$82	\$369	\$1,326	\$6,495,960	\$26,785,050	\$2,231,078	\$35,512,088
2037	80,358	73,960	1,716	156,034	100%	80,358	73,960	1,716	156,034	\$83	\$371	\$1,333	\$6,659,008	\$27,457,355	\$2,287,078	\$36,403,442
2038	81,965	75,439	1,751	159,155	100%	81,965	75,439	1,751	159,155	\$83	\$373	\$1,339	\$6,826,150	\$28,146,534	\$2,344,484	\$37,317,168
2039	83,604	76,948	1,786	162,338	100%	83,604	76,948	1,786	162,338	\$84	\$375	\$1,346	\$6,997,486	\$28,853,012	\$2,403,331	\$38,253,829
2040	85,276	78,487	1,821	165,585	100%	85,276	78,487	1,821	165,585	\$84	\$377	\$1,353	\$7,173,123	\$29,577,223	\$2,463,654	\$39,214,000
2041	86,982	80,057	1,858	168,896	100%	86,982	80,057	1,858	168,896	\$85	\$379	\$1,359	\$7,353,168	\$30,319,611	\$2,525,492	\$40,198,272
2042	88,721	81,658	1,895	172,274	100%	88,721	81,658	1,895	172,274	\$85	\$381	\$1,366	\$7,537,733	\$31,080,634	\$2,588,882	\$41,207,248
2043	90,496	83,291	1,933	175,720	100%	90,496	83,291	1,933	175,720	\$85	\$383	\$1,373	\$7,726,930	\$31,860,757	\$2,653,863	\$42,241,550
2044	92,306	84,957	1,972	179,234	100%	92,306	84,957	1,972	179,234	\$86	\$384	\$1,380	\$7,920,876	\$32,660,462	\$2,720,475	\$43,301,813
2045	94,152	86,656	2,011	182,819	100%	94,152	86,656	2,011	182,819	\$86	\$386	\$1,387	\$8,119,690	\$33,480,240	\$2,788,759	\$44,388,689
2046	96,035	88,389	2,051	186,475	100%	96,035	88,389	2,051	186,475	\$87	\$388	\$1,394	\$8,323,494	\$34,320,594	\$2,858,757	\$45,502,845
2047	97,955	90,157	2,092	190,205	100%	97,955	90,157	2,092	190,205	\$87	\$390	\$1,401	\$8,532,414	\$35,182,041	\$2,930,511	\$46,644,966
2048	99,915	91,960	2,134	194,009	100%	99,915	91,960	2,134	194,009	\$88	\$392	\$1,408	\$8,746,577	\$36,065,110	\$3,004,067	\$47,815,755
2049	101,913	93,799	2,177	197,889	100%	101,913	93,799	2,177	197,889	\$88	\$394	\$1,415	\$8,966,116	\$36,970,345	\$3,079,469	\$49,015,930
2050	103,951	95,675	2,220	201,847	100%	103,951	95,675	2,220	201,847	\$88	\$396	\$1,422	\$9,191,166	\$37,898,300	\$3,156,764	\$50,246,230

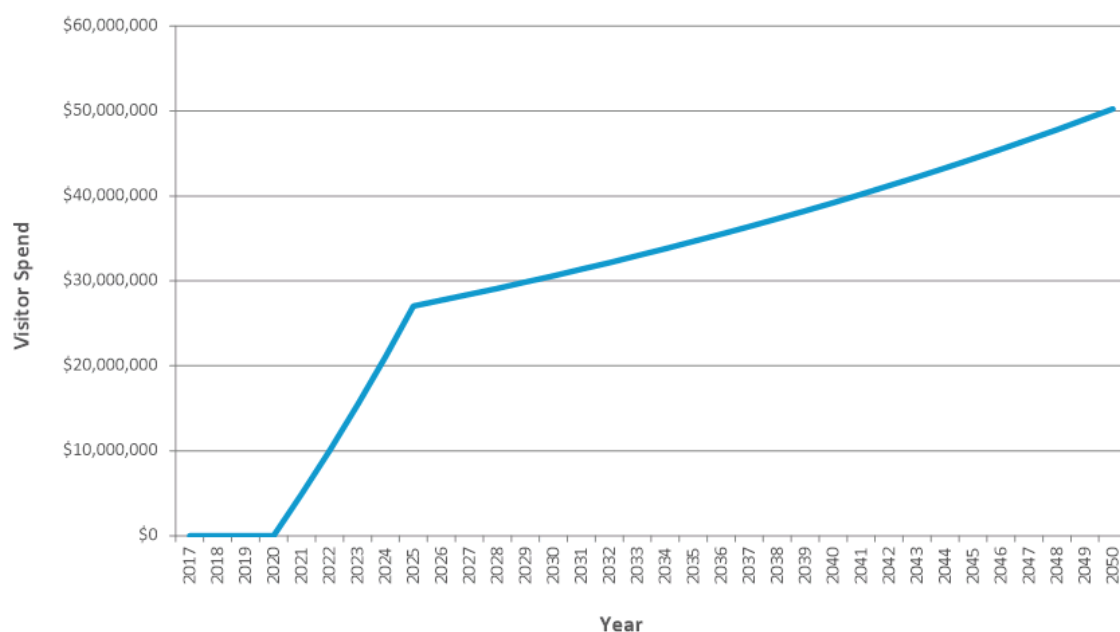
Source: SC Lennon &amp; Associates

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Table 6 shows:

- The estimated uplift commencing in 2020 with completion of the road upgrade for each of the three market segments (assuming no 'ramp up'), that is no phase in period. Growth of 2% per annum is assumed based on TRA forecasts.
- These figures ramped up by 20% per annum increments to 2025.
- An estimate of spend per trip for each of the market segments is applied from the Destination NSW market profile. This is increase by 0.005% per annum to allow for real growth.
- The consequent uplift in spend for each segment is calculated and a total is provided. The result is shown in Figure 13 below.

**Figure 13. Visitor Uplift Spend Per Annum with Upgraded Brindabella Road, Snowy Valleys, Eastern Riverina and Albury Hume Regions**



Source: SC Lennon & Associates

It is estimated that **by 2025 after full 'ramp-up' there will be an extra \$27.0 million per annum visitor spending and this will increase to \$50.2 million per annum by 2050.** Note that this estimate does not yet include an 'investment effect', that is, the new spending created by new business investment taking advantage of the visitation uplift and as a result of implementation of the initiatives and projects contained in the new destination management and branding plans. Taking these factors into account, it is feasible that the spending uplift can be in the order of 20% to 30% higher than estimated.

### 3.3 Road User Benefits – Travel Time Savings

There is a paucity of data on traffic volumes however old counts (1997) put the number of vehicles on the gravel section of Brindabella Road at around 100 vehicles per day (vpd). Council engineers report that volumes have remained relatively constant for two decades.

With sealing of Brindabella Road, traffic will be generated by:

- Tourist traffic;
- Journey to work - Snowy Valleys to Canberra and Canberra to Snowy Valleys; and
- Other traffic, including:
  - Snowy Valleys resident travel to Canberra for shopping, entertainment, recreation, social and health services;
  - Snowy Valleys resident travel to Canberra for education services;
  - Inter-regional exports of goods and services from the Snowy Valleys to Canberra; and
  - Inter-regional imports of goods and services from Canberra.

#### Tourist Traffic

It has been estimated above that there will be 123,032 additional visitor trips per annum in 2025 (after ramping up from 2020) on the Brindabella Road. Based on a survey (*Source: Parks Victoria, 2014, Point Nepean National Park Visitor Survey*), it is estimated that 94.7% of these trips will be in cars and 5.3% in buses. With an occupancy rate of 2.26 persons in cars and 20 in buses, this equates to 67% of persons in cars and 33% in buses (cycling will be a small but important component of the car numbers). Translated to vehicles per day this equates to 103 vpd (after ramping up from 2020) and this is expected to increase at 2% per annum in line with tourism forecasts.

#### Journey to Work

According to ABS Census Journey to Work data for 2016, Snowy Valleys had 5,990 employed persons of whom 5,267 (88%) worked in the local area. The number of jobs in the local area was 5,894. The main flows of workers to/from outside the LGA were:

• Snowy Valleys to Wagga Wagga	84
• Wagga Wagga to Snowy Valleys	122
• Snowy Valleys to Cootamundra – Gundagai	143
• Cootamundra – Gundagai to Snowy Valleys	156

Importantly, flows to and from Canberra for work were not registered. After sealing Brindabella Road, it can be expected that flows of workers between the Snowy Valleys and Canberra will increase to at least the current level between Wagga Wagga and Snowy Valleys. Hence, there will be around 200 two-way trips – 400 vpd (after ramping up from 2020).

#### Other Traffic

In regional areas households generate an average of 7.4 trips per day (*Source: Transport Roads and Maritime Services, August 2013, Guide to Traffic Generating Developments*). Assuming 1.4 trips for journey to work, this leaves 6.0 trips per day for all other purposes. Assuming a similar level of self-containment as there is for journey to work (88%) around 12% of trips will be to outside the Snowy Valleys LGA, of which, say (conservatively estimated), 10% will go to Canberra. Hence the number of trips to/from Canberra will be in the order of 1.2% of the trips per dwelling –  $6.0 \times 1.2\% = 0.072$  trips per dwelling.

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- Dwellings 5,388
- Trips per dwelling 0.072
- Trips to/from Canberra 400 vpd.

**All Traffic**

Based on this indicative analysis, the traffic volumes on an upgraded Brindabella Road (in 2025 after ramping up from 2020) could be in the order of:

- Tourist traffic 103 vpd.
- Journey to work 400 vpd.
- Other traffic 400 vpd.
- **Total traffic 903 vpd** (expected to increase at 2% pa).

Tourist traffic is expected to be concentrated more in the weekends. Volumes at the weekends and peak holiday times could be as high as 1,200 vpd.

**Qualification** – this estimate excludes transport of goods and produce such as fruit exports and timber haulage for which data is unavailable. These volumes will be modest but nevertheless very important to the regional economy. Bicycle traffic is included as a small component in these figures. The estimate should be viewed as being indicative to the extent that a tolerance of +/- 30% should be applied.

Assuming the estimated traffic volumes documented above, an estimate of travel time savings and vehicle kilometres savings associated with sealing Brindabella Road is provided in Table 7.

In order to calculate estimated travel time savings:

- For existing Brindabella Road users, the current volume is converted to 'persons' and the time saving per trip (49 minutes) is applied.
- For existing Hume / Barton Highway traffic that will be diverted to Brindabella Road, it is conservatively assumed this is 100 vehicles per day. As above, the current volume is converted to 'persons' and the time saving per trip (23 minutes) is applied.

In order to calculate estimated vehicle kilometre savings:

- For existing Brindabella Road users there is no appreciable saving of vehicle kilometres travelled.
- For diverted Hume / Barton Highway traffic the saving per trip is 64 kilometres.

Note that Travel Time Savings and Vehicle Kilometres Savings relate only to existing traffic volumes. The additional volumes estimated above are 'induced' traffic, therefore savings of this nature do not apply.

**Table 7. Estimate of Travel Time Savings and Vehicle Kilometre Savings After Sealing Brindabella Road**

<b>Travel Time Savings</b>	<b>Existing BB Road Users</b>	<b>Hume / Barton Hwys Traffic</b>
Vehicles	100 vpd	100 vpd
Occupancy	1.7	1.7
Persons	170	170
Current Time - Google Maps - 91 km/hr	2 hrs 39 min	2 hrs 13 min
Post BB Road Upgrade - Assume 70 km/hr	1 hr 50 min	1 hr 50 min
Time saving per vehicle trip	49 min	23 min
Time saving for persons in vehicle	83 min	39 min
Time saving all persons all vehicles per day	8,330 min	3,910 min
Time saving all persons all vehicles per year	3,040,450 min	1,427,150 min
Time saving all persons all vehicles per year	50,674 hrs	23,786 hrs
	<b>Total Time Savings pa</b>	<b>74,460 hrs</b>
<b>Vehicle Kilometres Savings</b>		
Vehicles	100 vpd	100 vpd
Current Distance Travelled	128 km	194 km
Current Total Distance Travelled per Day	12,800 km	19,400 km
Post BB Road Total Distance Travelled per Day	12,800 km	12,800 km
Distance Travelled Savings per day	0 km	6,600 km
Distance Travelled Savings per year	0 km	2,409,000 km
	<b>Total Vehicle Kilometre Savings pa</b>	<b>2,409,000 km</b>

Source: SC Lennon & Associates estimates and Transport for NSW (2016)

### 3.4 Other Benefits

In addition to the above benefits there are the following:

- Improved health outcomes from better access to health services.
- Better social outcomes with better access to support services and recreational and entertainment opportunities.
- Better education outcomes with improved access to education services.
- Higher incomes and improved lifestyle from better access to jobs and improved business investment opportunities.

These and other benefits are difficult to quantify and to value, but they are nevertheless very important.

It has been reported by members of the community that accident statistics on the existing road do include a significant number of unreported accidents. On this basis there is case that there will be fewer accidents with a sealed road. However, no statistical evidence of accident cost savings has been found in the literature. While there is no evidence of an increase in accidents with sealing a road, it appears that higher speeds may in some instances counteract accident rates associated with unsealed roads. It appears that accidents are caused in the main by

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drivers not 'driving to the conditions'. In this analysis accident cost savings are added to the above list of benefits that are difficult to value.

### 3.5 Valuing the Benefits

Valuations for the three main benefits of sealing Brindabella Road are shown in Table 8.

**Table 8. Valuation of Benefits, Brindabella Road Upgrade**

	Beneficiary		
	Visitors to Snowy Valleys and Wider Region	Snowy Valley Residents and Business Owners	Snowy Valley Residents and Business Owners
Benefit	Visitor Experience	Travel Time Savings	Vehicle Kilometres Savings
How Valued	Willingness to pay = total spending	Per km Source = Austroads	Per km – Source: Transport NSW Appraisal Guidelines
Rate		\$16.26	\$0.35
Quantity		74,460 hrs	2,409,000 km
Value	\$27,036,324	\$1,210,720	\$843,150
Notes:	At 2025 after ramp up and growing at 2% per annum	At 2025 after ramp up and growing at 2% per annum	At 2025 after ramp up and growing at 2% per annum

Source: SC Lennon & Associates estimates, Austroads and Transport for NSW (2016)

The 'benefit to visitors' is measured by reference to what they are 'willing to pay' for their experiences which equates to total tourism spend as estimated above. The benefits to Snowy Valleys residents and business owners are measured in terms of travel time savings and vehicle running cost savings.

## 4. Cost-Benefit Analysis

### 4.1 Findings

The findings of the cost-benefit analysis of upgrading Brindabella Road are shown in Table 9.

**Table 9. Cost-Benefit Analysis, Brindabella Road Upgrade**

Year	Ramping / Escalation Factor	Capital Cost	Maintenance Saving	Visitor Benefits	Travel Time Savings	Vehicle Kilometres Savings	Total Benefits	Net Benefits
	<b>Input Values</b>	<b>\$123,630,750</b>	<b>\$13,500</b>	<b>\$27,036,324</b>	<b>\$1,210,720</b>	<b>\$843,150</b>	<b>\$29,103,694</b>	
2020	0%	\$123,630,750	\$13,500	\$0	\$0	\$0	\$13,500	\$123,617,250
2021	20%		\$13,500	\$4,896,804	\$242,144	\$168,630	\$5,321,078	\$5,321,078
2022	40%		\$13,500	\$10,039,427	\$484,288	\$337,260	\$10,874,475	\$10,874,475
2023	60%		\$13,500	\$15,437,125	\$726,432	\$505,890	\$16,682,947	\$16,682,947
2024	80%		\$13,500	\$21,099,463	\$968,576	\$674,520	\$22,756,058	\$22,756,058
2025	100%		\$13,500	\$27,036,324	\$1,210,720	\$843,150	\$29,103,694	\$29,103,694
2026	102%		\$13,500	\$27,714,936	\$1,234,934	\$860,013	\$29,823,383	\$29,823,383
2027	104%		\$13,500	\$28,410,581	\$1,259,633	\$877,213	\$30,560,927	\$30,560,927
2028	106%		\$13,500	\$29,123,686	\$1,284,825	\$894,758	\$31,316,769	\$31,316,769
2029	108%		\$13,500	\$29,854,691	\$1,310,522	\$912,653	\$32,091,365	\$32,091,365
2030	110%		\$13,500	\$30,604,044	\$1,336,732	\$930,906	\$32,885,182	\$32,885,182
2031	113%		\$13,500	\$31,372,205	\$1,363,467	\$949,524	\$33,698,696	\$33,698,696
2032	115%		\$13,500	\$32,159,647	\$1,390,736	\$968,514	\$34,532,398	\$34,532,398
2033	117%		\$13,500	\$32,966,855	\$1,418,551	\$987,885	\$35,386,790	\$35,386,790
2034	120%		\$13,500	\$33,794,323	\$1,446,922	\$1,007,642	\$36,262,387	\$36,262,387
2035	122%		\$13,500	\$34,642,560	\$1,475,860	\$1,027,795	\$37,159,716	\$37,159,716
2036	124%		\$13,500	\$35,512,088	\$1,505,378	\$1,048,351	\$38,079,317	\$38,079,317
2037	127%		\$13,500	\$36,403,442	\$1,535,485	\$1,069,318	\$39,021,745	\$39,021,745
2038	129%		\$13,500	\$37,317,168	\$1,566,195	\$1,090,704	\$39,987,567	\$39,987,567
2039	132%		\$13,500	\$38,253,829	\$1,597,519	\$1,112,519	\$40,977,366	\$40,977,366
2040	135%		\$13,500	\$39,214,000	\$1,629,469	\$1,134,769	\$41,991,738	\$41,991,738
2041	137%		\$13,500	\$40,198,272	\$1,662,059	\$1,157,464	\$43,031,294	\$43,031,294
2042	140%		\$13,500	\$41,207,248	\$1,695,300	\$1,180,614	\$44,096,661	\$44,096,661
2043	143%		\$13,500	\$42,241,550	\$1,729,206	\$1,204,226	\$45,188,482	\$45,188,482
2044	146%		\$13,500	\$43,301,813	\$1,763,790	\$1,228,310	\$46,307,413	\$46,307,413
2045	149%		\$13,500	\$44,388,689	\$1,799,066	\$1,252,877	\$47,454,131	\$47,454,131
2046	152%		\$13,500	\$45,502,845	\$1,835,047	\$1,277,934	\$48,629,326	\$48,629,326
2047	155%		\$13,500	\$46,644,966	\$1,871,748	\$1,303,493	\$49,833,707	\$49,833,707
2048	158%		\$13,500	\$47,815,755	\$1,909,183	\$1,329,563	\$51,068,000	\$51,068,000
2049	161%		\$13,500	\$49,015,930	\$1,947,367	\$1,356,154	\$52,332,950	\$52,332,950
2050	164%		\$13,500	\$50,246,230	\$1,986,314	\$1,383,277	\$53,629,321	\$53,629,321
	<b>Total</b>	<b>\$123,630,750</b>	<b>\$418,500</b>	<b>\$1,026,416,494</b>	<b>\$43,187,465</b>	<b>\$30,075,924</b>	<b>\$1,100,098,383</b>	<b>NPV</b>
	<b>Present Value 4%</b>	<b>\$123,630,750</b>	<b>\$371,011</b>	<b>\$835,281,031</b>	<b>\$35,470,797</b>	<b>\$24,702,006</b>	<b>\$895,824,844</b>	<b>\$772,194,094</b>
	<b>Present Value 7%</b>	<b>\$123,630,750</b>	<b>\$232,403</b>	<b>\$481,631,173</b>	<b>\$20,675,546</b>	<b>\$14,398,534</b>	<b>\$516,937,656</b>	<b>\$393,306,906</b>
	<b>Present Value 10%</b>	<b>\$123,630,750</b>	<b>\$162,567</b>	<b>\$309,406,707</b>	<b>\$13,447,350</b>	<b>\$9,364,789</b>	<b>\$332,381,412</b>	<b>\$208,750,662</b>
	<b>Benefit / Cost Ratio 4%</b>		<b>0.003</b>	<b>6.76</b>	<b>0.29</b>	<b>0.20</b>	<b>7.25</b>	
	<b>Benefit / Cost Ratio 7%</b>		<b>0.002</b>	<b>3.90</b>	<b>0.17</b>	<b>0.12</b>	<b>4.18</b>	
	<b>Benefit / Cost Ratio 10%</b>		<b>0.001</b>	<b>2.50</b>	<b>0.11</b>	<b>0.08</b>	<b>2.69</b>	
Note - Re-sheeting costs are factored into the calculation of maintenance cost savings.						<b>IRR</b>	<b>18.52%</b>	
Note - Residual value of asset not included as asset is fully maintained.								
Note - Benefits continue beyond 2050.								

Source: SC Lennon & Associates

In the cost-benefit analysis:

- All values are entered in year 2020 dollars (i.e. 'real' dollars).
- The capital cost is entered in year 2020 (the estimated completion date).

*Brindabella Road Upgrade Business Case*

- Note that re-sheeting costs are factored into the calculation of (constant) maintenance cost savings.
- Maintenance savings commence in 2020 upon road upgrade completion and are held constant in real terms.
- Visitor benefits, travel time savings and vehicle running cost savings are all 'ramped up' to 2025 as travel patterns are established post-completion of the road upgrade. These benefits are 'escalated' by 2% per annum (real) to reflect tourism growth forecasts, population growth and business expansion.
- Table 9 shows sums for each column and present values (PVs) at three discount rates, being 4%, 7% and 10%.
- The benefit-cost ratios (BCRs) are shown for the three discount rates (PV of benefits / PV of costs).
- The Net Present Value (NPV) is shown for the three discount rates.
- The Internal Rate of Return (IRR) is shown.

The discount rate recommended by Transport for NSW (2016) is 7%. The results at this discount rate are:

- **The benefit-cost ratio (BCR) is 4.18:1**, meaning the project delivers \$4.80 of value for every dollar spent.
- \$3.90 of this value is delivered by benefits to visitors, measured by what they are willing to pay for the experiences facilitated by the Brindabella Road upgrade.
- \$0.90 of this value is delivered by benefits to 'non-visitor uplift' road users, measured by travel time savings and cost savings, which is reflective of the relatively low traffic volumes involved, as is invariably the case on rural roads.

## 4.2 Sensitivity Analysis

### Discount Rate

Table 9 shows the results of the cost-benefit analysis at alternative discount rates. At 4% the future stream of benefits is not discounted as much, increasing the BCR to 7.25:1. At 10% the future stream of benefits is heavily discounted, decreasing the BCR to 2.69:1. Importantly, at this high discount rate, the BCR is still very positive.

### Net Present Value (NPV) and Internal Rate of Return (IRR)

The NPV at 7% is \$393 million, at 4% \$772 million and at 10% \$208 million. Even at the highest discount rate the return on investment is substantial. The IRR is 18.52%

### ACT Market Penetration

In Table 6 it is estimated that uplifts are based on a conservative 2% increase in market penetration for all origins and a 20% uplift for the ACT. The 2% figure is considered to be conservative while the results are somewhat sensitive to the 20% estimate for uplift in penetration of the ACT market. Sensitivity to this variable is illustrated in Table 10 overleaf. From the table it can be seen that even if the market penetration is only 55% (a small uplift from 53.74%) the BCR remains solidly positive at 2.87:1.

**Table 10. Benefit-Cost Ratio Sensitivity to ACT Market Penetration**

Market Penetration ACT	Project BCR
	4.18
55.00%	2.847
60.00%	3.552
<b>64.46%</b>	<b>4.181</b>
70.00%	4.963
75.00%	5.668

Note: for 7% discount rate

Source: SC Lennon & Associates

### Construction Cost

A very conservative (i.e. high) estimate of road construction costs has been adopted to ensure that there are no 'surprises' down the track. In other words, the construction costs of sealing Brindabella Road are purposefully estimated at the higher end of the scale. Subject to detailed design, the construction cost could well be lower. Table 11 tests a number of alternative construction cost outcomes.

**Table 11. Benefit-Cost Ratio Sensitivity to Construction Costs**

Road Costs (\$m)	Per km	BCR	BCR Travel Only
\$123.6	\$2.75	4.18	0.29
\$100.0	\$2.22	5.17	0.35
\$80.0	\$1.78	6.46	0.44
\$60.0	\$1.33	8.62	0.59

Source: SC Lennon & Associates

### 4.3 Including Value-added in the Analysis

It has been argued (e.g. *Queensland Government (July 2015) Project Assessment Framework – Cost Benefit Analysis*) that using an input-output modelling approach should not be included in cost-benefit analysis for a number of reasons, including:

- The benefits could have been generated by an alternative use of the resources.  
*Comment – Yes, but the benefits are still produced. This is only a problem if an alternative project can be demonstrated to be much more beneficial.*
- A positive economic impact at a local level is simply a redistribution of benefits from other areas.  
*Comment – If grant funding is directed to one region the enhanced taxation basis creates resources for investment in other regions.*
- Analysis using input-output multipliers assumes that a new project can obtain unrestricted quantities of goods and labour, without altering the pre-project market prices for these inputs, which would not be realistic in many cases.  
*Comment – This could pose a problem for a billion-dollar project, but for projects of modest size there are suppliers who have inventory and can readily integrate the project into their work program.*

An argument can be made for considering value-added in a CBA on the basis that when capital is invested in a project there is a good or a service for which the community is 'willing to pay' - and this exceeds the cost. Hence the margin between the cost of inputs in an input-output model and the value produced provides a measure of net community benefit. An indicative estimate of this is to assume 20% of the value created represents the benefit as this is a margin often assumed in commercial projects. It should be reported separately as a less precise but nevertheless useful indicative measure of the value of a project.

## 5. Regional Economic and Employment Benefits Analysis

### 5.1 Scope of the Regional Economic Impact Analysis

To complement and reinforce the findings of the cost-benefit analysis, an assessment of the regional economic impacts (benefits) of upgrading (sealing) Brindabella Road has been prepared. This assessment of the economic benefits of upgrading Brindabella Road addresses the project's anticipated regional economic impacts by quantifying its estimated direct and indirect contribution to employment, wages and salaries, output and industry value-added in the Snowy Valleys regional economy.

### 5.2 Defining Economic Impacts

Economic modelling is used to examine the direct and flow-on economic activity expected to be supported in the regional economy as a result of the construction and operation of a sealed Brindabella Road. The analysis draws on the REMPLAN model of the Snowy Valleys economy (December 2017) and focuses on the following impacts as a result of sealing Brindabella Road:

- **Employment** creation, that is, an increase in the number of jobs as a result of the project. This includes the one-off construction impacts associated with sealing the road as well as the long-term sustainable employment impacts facilitated by the upgraded road connection between the ACT and the Snowy Valleys and wider region; and
- **Net Output Uplift or Value-Added**, that is, the gross revenue generated by businesses/organisations in each of the industry sectors in the Snowy Valleys region net of the costs incurred. Value-added is the marginal economic value that is added by each industry sector in the regional economy. It is calculated by subtracting local expenditure and expenditure on regional imports from the output generated by an industry sector. Value-added by industry sector is the major element in the calculation of Gross Regional Product / Gross State Product / Gross Domestic Product.

In highlighting the employment and value-added impacts of sealing Brindabella Road, the regional economic impact analysis addresses the impact of the road upgrade investment on the Snowy Valleys region's output, value-added, wages and salaries and jobs.

Job creation is fundamental to regional economic development. As explained below, the economic impacts referred to above are calculated on the basis of the employment that the Brindabella Road upgrade project will generate, both as a direct result of the sealed road's construction and, more importantly, as a result of facilitated economic development resulting from a visitation uplift and boost to the region's visitor economy once the road is sealed and operational.

### 5.3 Construction-related Impacts on Output

The Brindabella Road upgrade project has a planned construction activity worth \$123.6 million and is expected to be completed by 2020. From the direct investment of \$123.6 million, it is estimated that the demand for intermediate goods and services would rise by \$57.3 million. This represents a Type 1 Output multiplier of 1.463. These supply-chain effects include multiple rounds of flow-ons through the regional economy, as servicing sectors increase their own output and demand for local goods and services in response to the direct change to the economy.

The increases in direct and indirect output would typically correspond to the creation of jobs in the economy (see below). Corresponding to this change in employment would be an increase in the total of wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local (Snowy Valleys) economy. These consumption-induced effects are estimated at \$24.53 million.

**From an investment of \$123.6 million to upgrade Brindabella Road, total output in the Snowy Valleys regional economy, including all direct, supply-chain and consumption effects is estimated to increase by up to \$205.41 million.** This represents a Type 2 Output multiplier of 1.662.

## 5.4 Construction-related Impacts on Value-added

From a direct increase in output of \$123.6 million, the corresponding increase in direct value-added is estimated at \$46.54 million. From this direct expansion in the economy, flow-on supply-chain effects in terms of local purchases of goods and services are anticipated, and it is estimated that these indirect impacts would result in a further increase to value-added of \$21.37 million. This represents a Type 1 Value-added multiplier of 1.459. Consumption effects are expected to further boost value-added by \$15.08 million.

**From an investment of \$123.6 million to upgrade Brindabella Road, total value-added in the Snowy Valleys, including all direct, supply-chain and consumption effects is estimated to increase by up to \$82.99 million.** This represents a Type 2 Value-added multiplier of 1.783.

## 5.5 Construction-related Impacts on Wages and Salaries

From a direct increase in output of \$123.6 million it is estimated that direct wages and salaries would increase by \$23.98 million. From this direct expansion in the economy, flow-on supply-chain effects in terms of local purchases of goods and services would result in the gain of a further 161 jobs and a further increase in wages and salaries of \$12.67 million. This represents a Type 1 Wages and Salaries multiplier of 1.529. The increase in direct and indirect output and the corresponding creation of jobs in the economy would result in an increase in the wages and salaries paid to employees serving to further boost employment in sectors such as retail trade, increasing wages and salaries by \$5.48 million.

**Total wages and salaries, including all direct, supply-chain and consumption effects is estimated to increase by up to \$42.13 million.** This represents a Type 2 Wages and Salaries multiplier of 1.757.

## 5.6 Construction-related Impacts on Employment

From a direct increase in output of \$123.6 million to construct an upgraded Brindabella Road, the corresponding direct employment impact is estimated at 129 jobs. From this direct expansion in the regional economy, flow-on supply-chain effects in terms of local purchases of goods and services would result in the gain of a further 161 jobs. This represents a Type 1 Employment multiplier of 2.248.

The increase in direct and indirect output and the corresponding creation of jobs in the regional economy are expected to result in an increase in the wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local (Snowy Valleys) economy. The consumption effects are estimated to further boost employment by 88 jobs.

**Total construction-related employment, including all direct, supply-chain and consumption effects is estimated to increase by up to 378 jobs.** This represents a Type 2 Employment multiplier of 2.930.

## 5.7 Operational Phase Regional Economic Impacts

Upgrading Brindabella Road will deliver significant regional economic benefits to the Snowy Valleys and beyond including:

- **Liveability for residents** - This will have direct benefits for existing residents and will make the Snowy Valleys and surrounding region more attractive to new residents. This in turn will create demand for new housing and for local goods and services. The jobs that are created as a result of this increased demand will attract more residents with a ripple effect through the regional economy. This will be reflected in investment in businesses, with a multiplier effect.
- **Business productivity improvements** - Businesses in the Snowy Valleys region will benefit from more efficient supply chains and delivery times and from access to an expanded labour pool. Productivity will also be enhanced by efficiencies in moving goods and services out of the region - to the Canberra market and beyond, including exports of produce via Canberra Airport. The uplift in business productivity will in turn attract investment in business expansion and new business establishments, again with a multiplier effect.
- **Visitation (tourism) uplift** - There will be an uplift in the numbers of domestic and international visitors staying in and moving through the region. This will increase spending in retail, hospitality and accommodation businesses as well as in businesses providing services directly to visitors. The uplift in visitor spending will in turn attract investment in 'visitor economy' business expansion and new business establishments, again with a multiplier effect.

It is the visitor economy impacts where the sealing of Brindabella Road will demonstrate the most significant direct and indirect economic benefits. Tourism employs local residents across a diversity of sectors including accommodation and food services, arts and recreation services, retail trade and transport. As shown in Chapter 3, the Snowy Valleys' tourism industry is a key sector of employment in the region accounting for 663 local jobs or 10.8% of total employment.

Tourism's contribution to employment and its potential to capture new visitor markets with investment in critical infrastructure and attractions offers significant potential for growth. Importantly, the tourism industry displays strong backward linkages into the local economy. The importance of tourism and its potential to diversify and grow the Snowy Valleys (and wider regional) economy is highlighted in a number of key strategic documents. Sealing Brindabella Road is a priority project in Snowy Valleys Council's economic development strategy, which highlights the importance of road transport infrastructure as a critical enabler of the region's economic development and its fundamental role in underpinning a prosperous economy.

The Brindabella Road upgrade and development of a new touring route to Canberra is also identified as a 'game-changer' project in the *Snowy Valleys Destination Management Plan*, while the *Riverina Murray Destination Management Plan* prioritises the upgrading of Brindabella Road as a 'Tier 1' project. The NSW Government's *Snowy Valleys Regional Economic Development Strategy 2018-2022* recommends upgrading Brindabella Road as a priority to support the continued development of the tourism sector to diversify the Snowy Valleys' economy.

## 5.8 Tourism Expenditure, Output and Employment Uplift

Sealing Brindabella Road will have long-term and sustaining economic benefits for the Snowy Valleys region and beyond. The operational / on-going regional economic impacts will result from facilitated tourism visitation uplift enabled by the sealing of 45 kilometres of Brindabella Road. These operational impacts include the project's contribution to employment throughout all sectors of the regional economy and its contribution to gross regional product.

It has been estimated that by 2025 after full 'ramp-up', there will be approximately an extra \$27.0 million per annum visitor spending in the region and this will increase to an additional \$50.2 million by 2050. According to REMPLAN this can be distributed to various industry sectors as per Table 12.

**Table 12. Distribution of Tourism Expenditure Uplift to Industry Sectors in the Snowy Valleys Region**

Distribution of Tourism Dollar	Per cent	Uplift (\$ million)
Accommodation & Food Services	63.16%	\$17.05
Transport, Postal & Warehousing	8.89%	\$2.40
Ownership of Dwellings	7.48%	\$2.02
Retail Trade	7.11%	\$1.92
Manufacturing	4.33%	\$1.17
Agriculture, Forestry & Fishing	2.39%	\$0.64
Arts & Recreation Services	2.11%	\$0.57
Education & Training	1.32%	\$0.36
Administrative & Support Services	0.97%	\$0.26
Wholesale Trade	0.80%	\$0.22
Rental, Hiring & Real Estate Services	0.66%	\$0.18
Other Services	0.32%	\$0.09
Health Care & Social Assistance	0.29%	\$0.08
Information Media & Telecommunications	0.19%	\$0.05
<b>Total</b>	<b>100%</b>	<b>\$27.0</b>

Source: SC Lennon & Associates using REMPLAN (December 2017)

## 5.9 Business Productivity Improvements

As explained in Chapter 1, accepting that the principal purpose of building roads is the wider economic benefits they generate, it follows that the emphasis of evaluations of road projects in remote, rural and regional areas should be on estimating the value of the productivity dividend delivered to the regional economy.

As documented in Chapter 3, the industries that currently drive and support economic activity in the Snowy Valleys are agriculture and softwood timber production. Based on the region's comparative and competitive advantages, emerging industry opportunities include apple cider, premium cool climate viticulture and horticulture, biomass energy using plantation timber residues, hydro-electricity generation, aged care and tourism. The Federal Government's announcement of a \$2 billion expansion of the Snowy Hydro Scheme and the associated upgrade of transmission lines will provide a significant economic boost to the region's economic activity. The Brindabella Road connection is a key piece of facilitating infrastructure for these key projects.

*Brindabella Road Upgrade Business Case*

Sealing Brindabella Road would facilitate productivity uplifts in the Snowy Valleys' principal industry drivers of agriculture and timber production as well as utilities. Businesses in the region will benefit from more efficient supply chains and delivery times and from access to an expanded labour pool. Productivity will also be enhanced by efficiencies in moving goods and services out of the region - to the Canberra market and beyond, including exports of produce throughout Australia and around the world via Canberra Airport. The uplift in business productivity will in turn attract investment in business expansion and new business establishments, again with a multiplier effect.

While it is not possible to empirically forecast the uplift in output to flow from the Brindabella Road upgrade for these industry sectors, a reasonable estimate can be made about the productivity enhancements that the project can deliver. On this basis it is conservatively estimated that, following completion of the road upgrade in 2020, there will be a 2.5% uplift in output in the key industry sectors of agriculture / horticulture, utilities and timber production by the year 2025. Table 13 shows the output uplifts for all industry sectors relative to current levels of output.

**Table 13. Estimated Regional Economic Impacts, Brindabella Road Upgrade**

Industry Sector	Current (Dec. 2017) Output (\$m)	Output Uplift (2025)				
		Tourism	Agriculture/ Horticulture	Timber Production	Utilities	Totals
Manufacturing	\$593.590	\$1.17		\$14.84		\$16.01
Agriculture, Forestry & Fishing	\$426.107	\$0.64	\$10.65			\$11.29
Electricity, Gas, Water & Waste Services	\$221.111				\$5.53	\$5.53
Construction	\$201.592					\$0.00
Ownership of Dwellings	\$134.910					\$0.00
Tourism	\$106.071					\$0.00
Public Administration & Safety	\$74.682					\$0.00
Health Care & Social Assistance	\$74.179	\$0.08				\$0.08
Transport, Postal & Warehousing	\$72.391	\$2.40				\$2.40
Retail Trade	\$55.510	\$1.92				\$1.92
Education & Training	\$47.362	\$0.36				\$0.36
Financial & Insurance Services	\$39.361					\$0.00
Administrative & Support Services	\$31.441	\$0.26				\$0.26
Professional, Scientific & Technical Services	\$31.002					\$0.00
Wholesale Trade	\$27.500	\$0.22				\$0.22
Other Services	\$23.120	\$0.09				\$0.09
Accommodation & Food Services	\$20.066	\$17.05				\$17.05
Rental, Hiring & Real Estate Services	\$16.628	\$2.19				\$2.19
Mining	\$11.217					\$0.00
Information Media & Telecommunications	\$8.550	\$0.05				\$0.05
Arts & Recreation Services	\$6.343	\$0.57				\$0.57
<b>Total</b>	<b>\$2,222.73</b>	<b>\$27.00</b>	<b>\$10.65</b>	<b>\$14.84</b>	<b>\$5.53</b>	<b>\$58.02</b>

Source: SC Lennon & Associates using REMPLAN (December 2017)

*Brindabella Road Upgrade Business Case*

It can be seen from Table 13 above that the total output uplift across the Snowy Valleys regional economy is approximately \$58 million per annum. The estimates of output uplifts have been provided as input to the REMPLAN impact assessment model of the Snowy Valleys economy with the results shown in Table 14 below.

**Table 14. Summary of Estimated Regional Economic Impacts, Brindabella Road Upgrade**

Impact Summary	Direct Effect	Supply-Chain Effect	Consumption Effect	Total Effect
Output (\$M)	\$58.02	\$16.96	\$9.64	<b>\$84.61</b>
Employment (Jobs)	203	48	35	<b>286</b>
Wages and Salaries (\$M)	\$10.72	\$3.68	\$2.15	<b>\$16.55</b>
Value-added (\$M)	\$22.60	\$7.45	\$5.93	<b>\$35.98</b>

Source: SC Lennon & Associates using REMPLAN (December 2017)

### 5.10 Impact on Output

According to the REMPLAN model of the Snowy Valleys regional economy, from a direct increase in output of \$58 million per annum as a result of productivity uplifts due to the Brindabella Road upgrade, it is estimated that the demand for intermediate goods and services would rise by \$16.96 million. This represents a Type 1 Output multiplier of 1.292. These supply-chain effects include multiple rounds of flow-ons, as servicing sectors increase their own output and demand for local goods and services in response to the direct change to the regional economy.

The increases in direct and indirect output would typically correspond to the creation of jobs in the Snowy Valleys economy. Corresponding to this change in employment would be an increase in the total of wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured locally. These consumption effects are estimated at \$9.64 million.

**Total output, including all direct, supply-chain and consumption effects is estimated to increase by up to \$84.61 million.** This represents a Type 2 Output multiplier of 1.458.

### 5.11 Impact on Value-added

From a direct increase in output of \$58 million from productivity uplifts stemming from the Brindabella Road upgrade, the corresponding increase in direct value-added is estimated at \$22.60 million. From this direct expansion in the regional economy, flow-on supply-chain effects would result in a further increase to value-added of \$7.45 million. This represents a Type 1 Value-added multiplier of 1.330. The increase in direct and indirect output and the corresponding boost to jobs in the Snowy Valleys economy are expected to result in an increase in the wages and salaries paid to employees. The resulting consumption effects will further boost value-added by an estimated \$5.93 million.

**Total value-added, including all direct, supply-chain and consumption effects is estimated to increase by up to \$35.98 million.** This represents a Type 2 Value-added multiplier of 1.592

## 5.12 Impact on Wages and Salaries

From the direct increase in output of \$58 million, it is estimated that direct wages and salaries would increase by \$10.72 million. From this direct expansion in the economy, flow-on supply-chain effects in terms of local purchases of goods and services would result in the gain of a further 48 jobs (see below) and a further increase in wages and salaries of \$3.68 million. This represents a Type 1 Wages and Salaries multiplier of 1.344. The resulting consumption effects are expected to further boost employment in sectors such as retail trade, further increasing wages and salaries by \$2.15 million.

**Total wages and salaries, including all direct, supply-chain and consumption effects is estimated to increase by up to \$16.55 million.** This represents a Type 2 Wages and Salaries multiplier of 1.544.

## 5.13 Impact on Employment

From a direct increase in output of \$58 million, the corresponding direct employment impact is estimated at 203 jobs. From this direct expansion in the economy, flow-on supply-chain effects in terms of local purchases of goods and services would result in the gain of a further 48 jobs. This represents a Type 1 Employment multiplier of 1.236.

The increase in direct and indirect output and the corresponding creation of jobs in the regional economy will have a consumption-induced expenditure effect that is captured locally, estimated to further boost employment in the Snowy Valleys by 35 jobs. **Total employment, including all direct, supply-chain and consumption effects is estimated to increase by up to 286 jobs.** This represents a Type 2 Employment multiplier of 1.409.

## 5.14 Inclusion of Value Uplift in CBA

It has been argued above that there is a case for considering 'value-added' in the economy as a benefit in a cost-benefit analysis. Generally, this is reported separately. Adding the value-added estimate of \$35.98 million is added to the benefits stream of the cost-benefit analysis, the results are shown in Table 15.

**Table 15. Cost-Benefit Analysis Results Including Value-added**

	Capital Cost	Maintenance Saving	Visitor Benefits plus Value Add	Travel Time Savings	Vehicle Kilometres Savings	Total Benefits	
<b>Total 2020 to 2050</b>	<b>\$123,630,750</b>	\$418,500	\$2,247,849,355	\$43,187,465	\$30,075,924	<b>\$2,321,531,244</b>	<b>NPV</b>
<b>PV 4%</b>	<b>\$123,630,750</b>	\$371,011	\$1,846,207,181	\$35,470,797	\$24,702,006	<b>\$1,906,750,994</b>	<b>\$1,783,120,244</b>
<b>PV 7%</b>	<b>\$123,630,750</b>	\$232,403	\$1,076,134,341	\$20,675,546	\$14,398,534	<b>\$1,111,440,824</b>	<b>\$987,810,074</b>
<b>PV 10%</b>	<b>\$123,630,750</b>	\$162,567	\$699,916,461	\$13,447,350	\$9,364,789	<b>\$722,891,167</b>	<b>\$599,260,417</b>
	<b>BCR 4%</b>	0.003	14.93	0.29	0.20	<b>15.42</b>	
	<b>BCR 7%</b>	0.002	8.70	0.17	0.12	<b>8.99</b>	
	<b>BCR 10%</b>	0.001	5.66	0.11	0.08	<b>5.85</b>	
					<b>IRR</b>	<b>33.22%</b>	

Source: SC Lennon & Associates

It can be seen that when value-added to the economy is considered, the benefit-cost ratio (at 7% discount rate) is increased from 4.18:1 to **8.99:1**, meaning the project delivers \$8.99 of value for every dollar spent.

*Brindabella Road Upgrade Business Case*

In summary, the regional economic and employment benefits analysis shows that, from the direct investment of \$123.6 million, there will be:

- An uplift in total economic output of \$205.41 million;
- An uplift in value-added to the Snowy Valleys economy of \$82.99 million;
- An increase in wages and salaries of \$42.13 million; and
- The creation of 378 jobs.

When the Brindabella Road upgrade project is complete and operational, and allowing for a five-year ramp-up period, it is estimated there will be, on an ongoing basis and with a 2% growth factor:

- An uplift in the Snowy Valleys' total output of \$84.61 million;
- An uplift in value-added to the Snowy Valleys economy of \$35.98 million;
- An increase in wages and salaries of \$16.55 million; and
- The creation of 286 jobs throughout the Snowy Valleys economy.

The project's benefit-cost ratio and the estimated regional economic and employment benefits demonstrate a strong and robust business case for upgrading Brindabella Road.

## 6. Conclusion

There is a clear lack of connectivity between areas west of the Brindabella Ranges and Canberra and this is reflected in a low share of visitation from the major centres of population and particularly from the ACT. With improved connectivity resulting from an upgrade to the Brindabella Road, there is significant scope to improve market penetration, estimated to be in the order of 123,032 visitors per annum (in 2025 after ramp-up from 2020).

This level of visitation can generate an additional spend in the order of \$27 million per annum (in 2025 after ramp up from 2020) potentially growing to \$50 million per annum in 2050. Note that this estimate does not include an 'investment effect', that is, the new spending created by new business investment taking advantage of the visitation uplift and as a result of implementation of the initiatives and projects contained in the new destination management and branding plans. An estimate of traffic volumes on the road is 903 vehicles per day (average).

The cost of the Brindabella Road upgrade project has been estimated to be in the order of \$124 million. On the benefits side estimates have been made of: visitor benefits as measured by willingness to pay for their experience (spend); maintenance cost savings; travel time savings (for non-visitors); and vehicle operating cost savings (for non-visitors).

Other benefits include: better health outcomes from improved access to health services; better social outcomes with better access to support services and recreational and entertainment opportunities; better education outcomes with improved access to education services; and higher incomes and improved lifestyle from better access to jobs and improved business investment opportunities. These and other benefits are difficult to quantify and to value, but they are nevertheless very important.

The cost benefits analysis maps the cost and benefits to 2050 and calculates at a 7% discount rate a BCR of 4.18:1, a net present value (NPV) of \$393 million and an internal rate of return (IRR) of 18.52%. Sensitivity analysis has been carried out on the key variables confirming a robust and conservative result. When value-added to the economy is considered the benefit-cost ratio is increased from 4.18:1 to **8.99:1**, meaning the project delivers \$8.99 of value for every dollar spent.

The regional economic and employment benefits analysis shows that, from the direct investment of \$123.6 million, it is estimated there will be:

- An uplift in total economic output of \$205.41 million;
- An uplift in value-added to the Snowy Valleys economy of \$82.99 million;
- An increase in wages and salaries of \$42.13 million; and
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When the Brindabella Road upgrade project is complete and operational, and allowing for a five-year ramp-up period, it is estimated there will be, on an ongoing basis and with a 2% growth factor:

- An uplift in the Snowy Valleys' total output of \$84.61 million;
- An uplift in value-added to the Snowy Valleys economy of \$35.98 million;
- An increase in wages and salaries of \$16.55 million; and
- The creation of 286 jobs throughout the Snowy Valleys economy.

The project's benefit-cost ratio and the estimated regional economic and employment benefits demonstrate a strong and robust business case for upgrading Brindabella Road.

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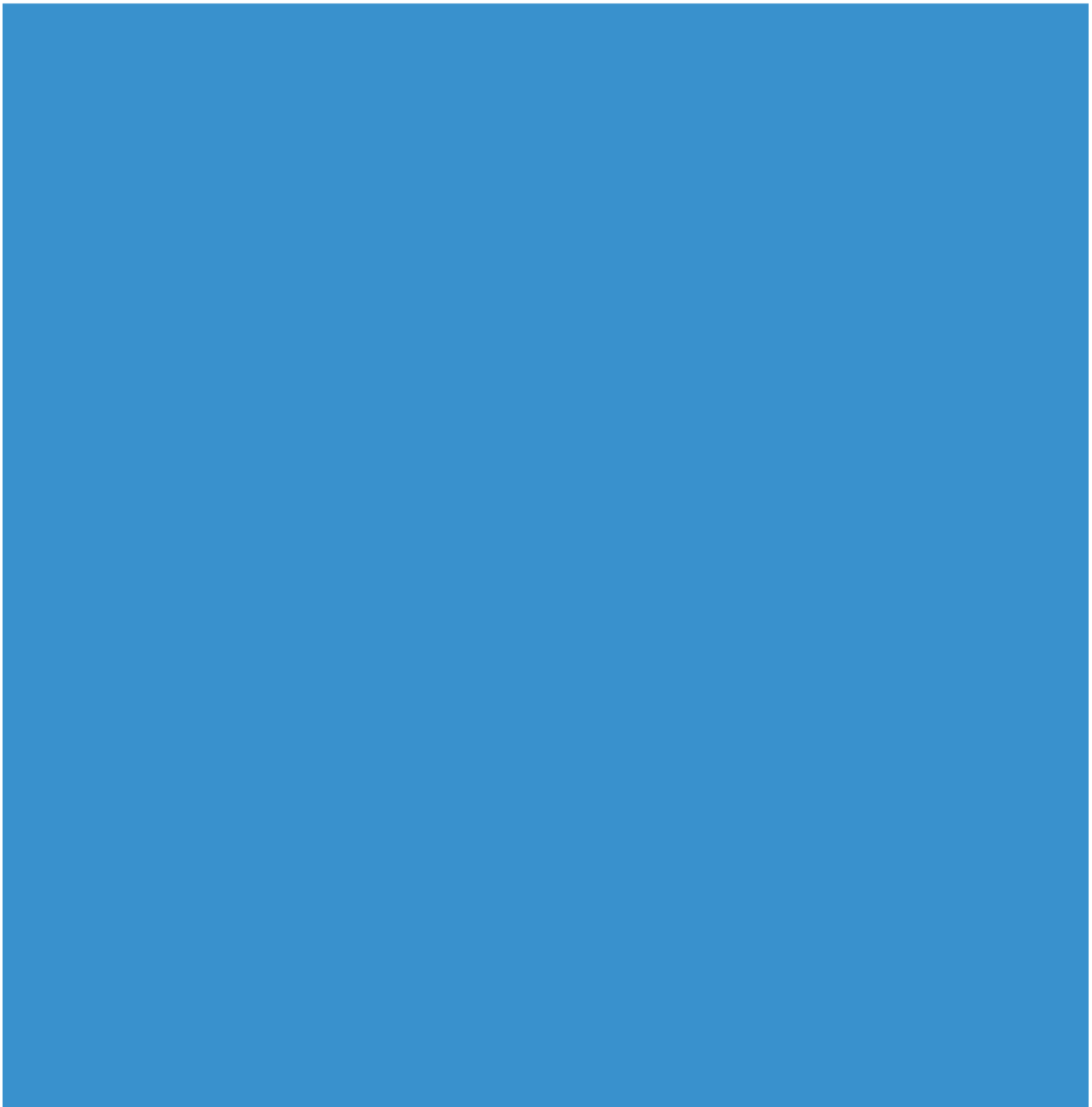
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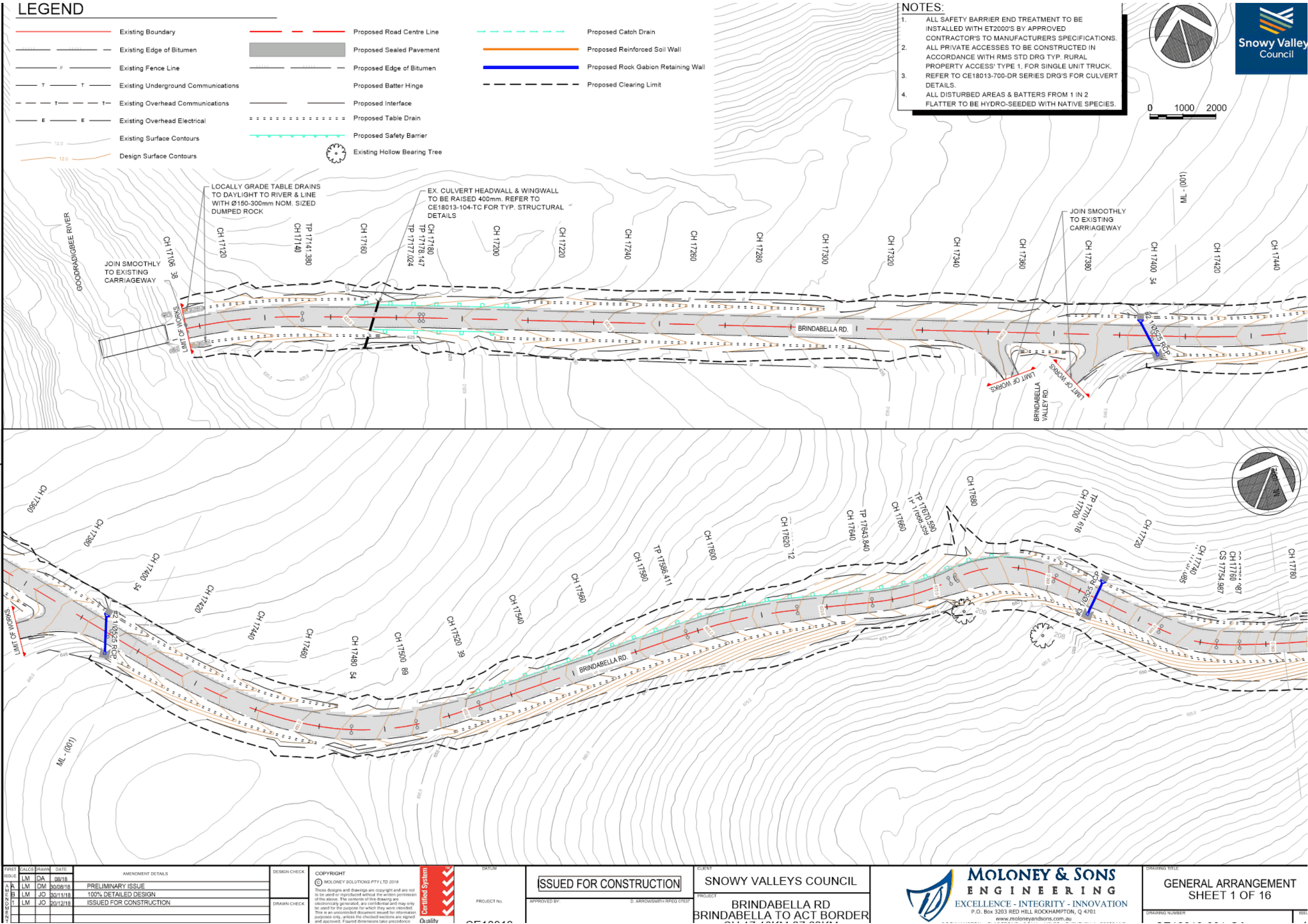


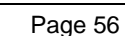
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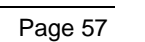
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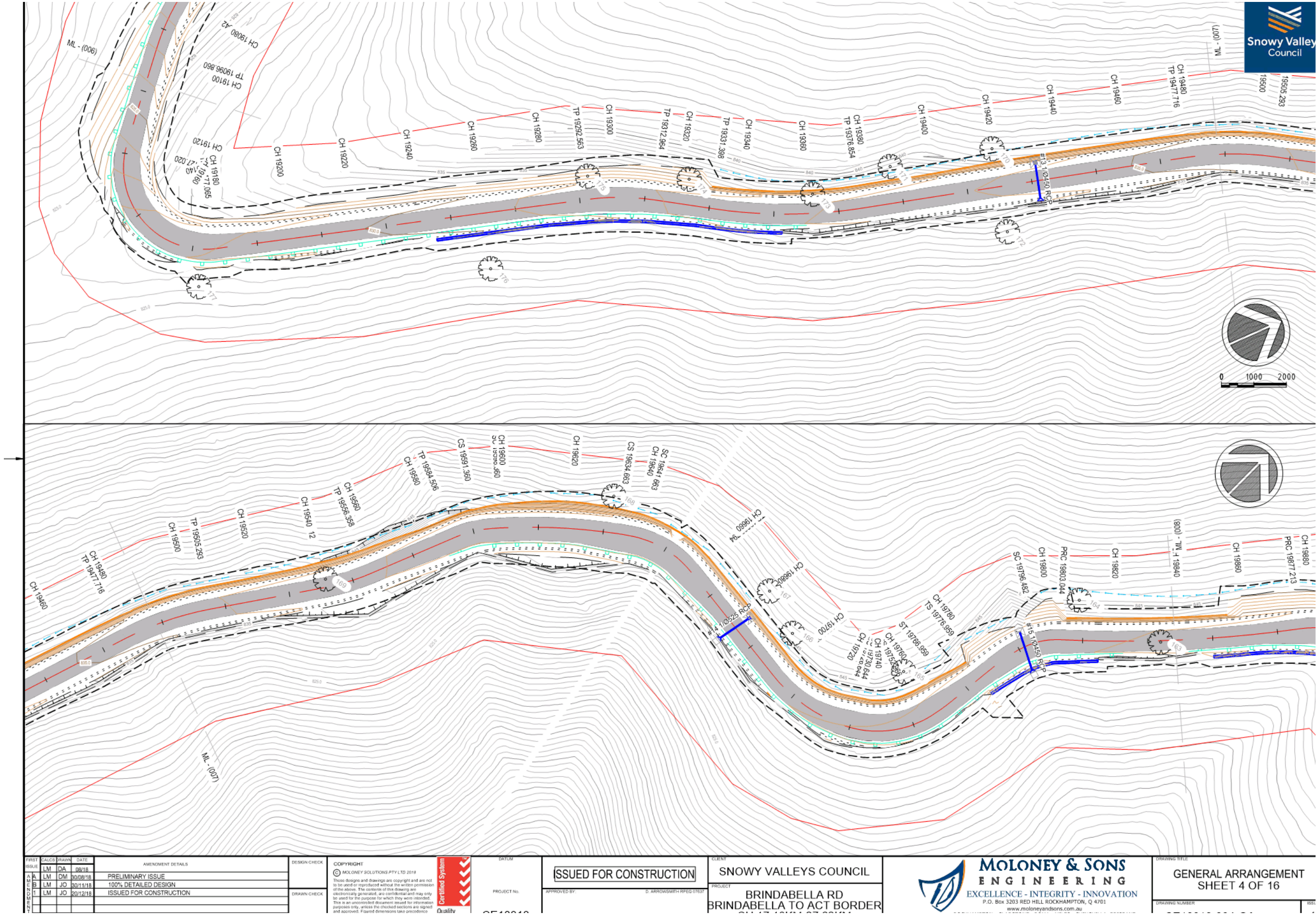
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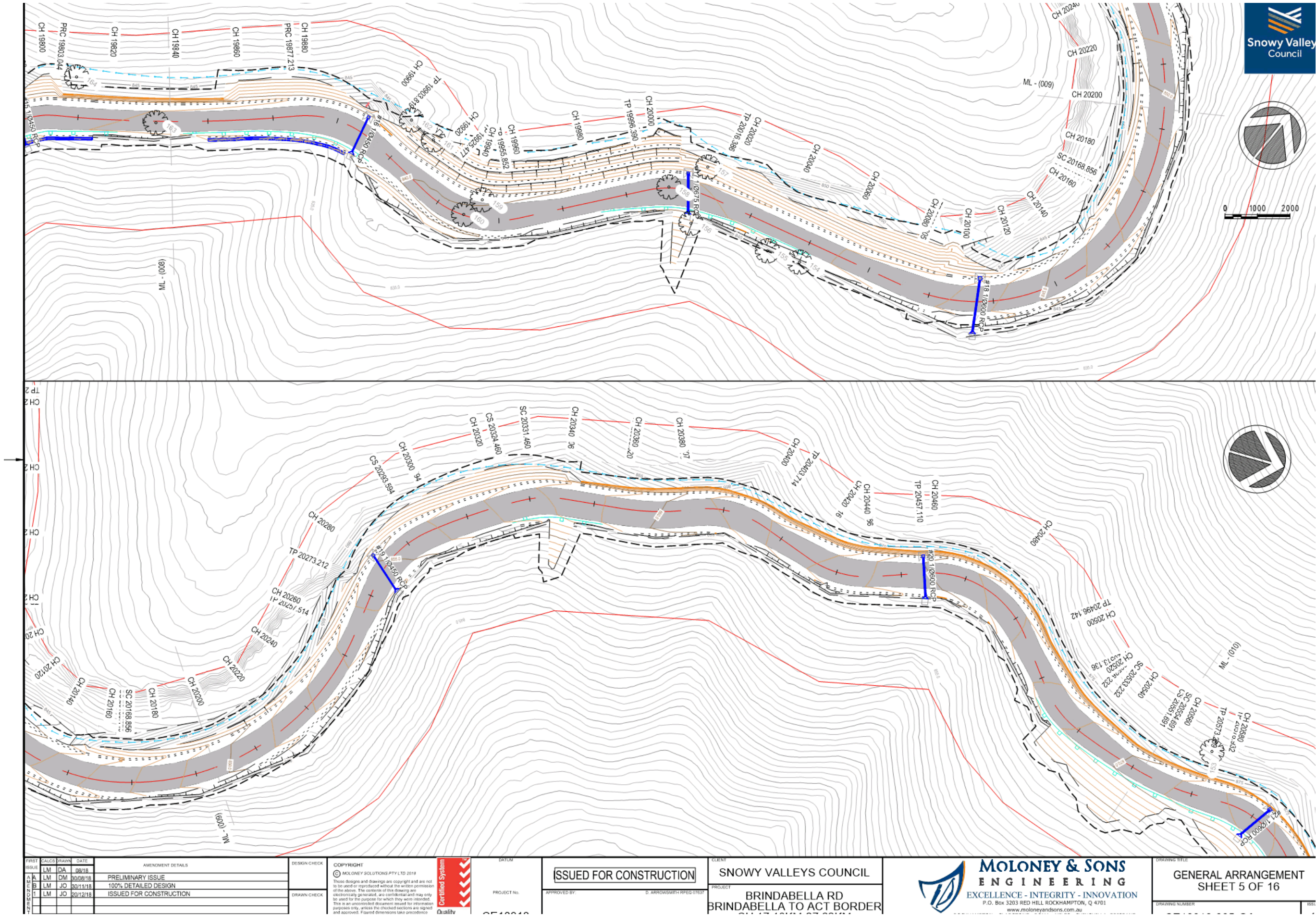
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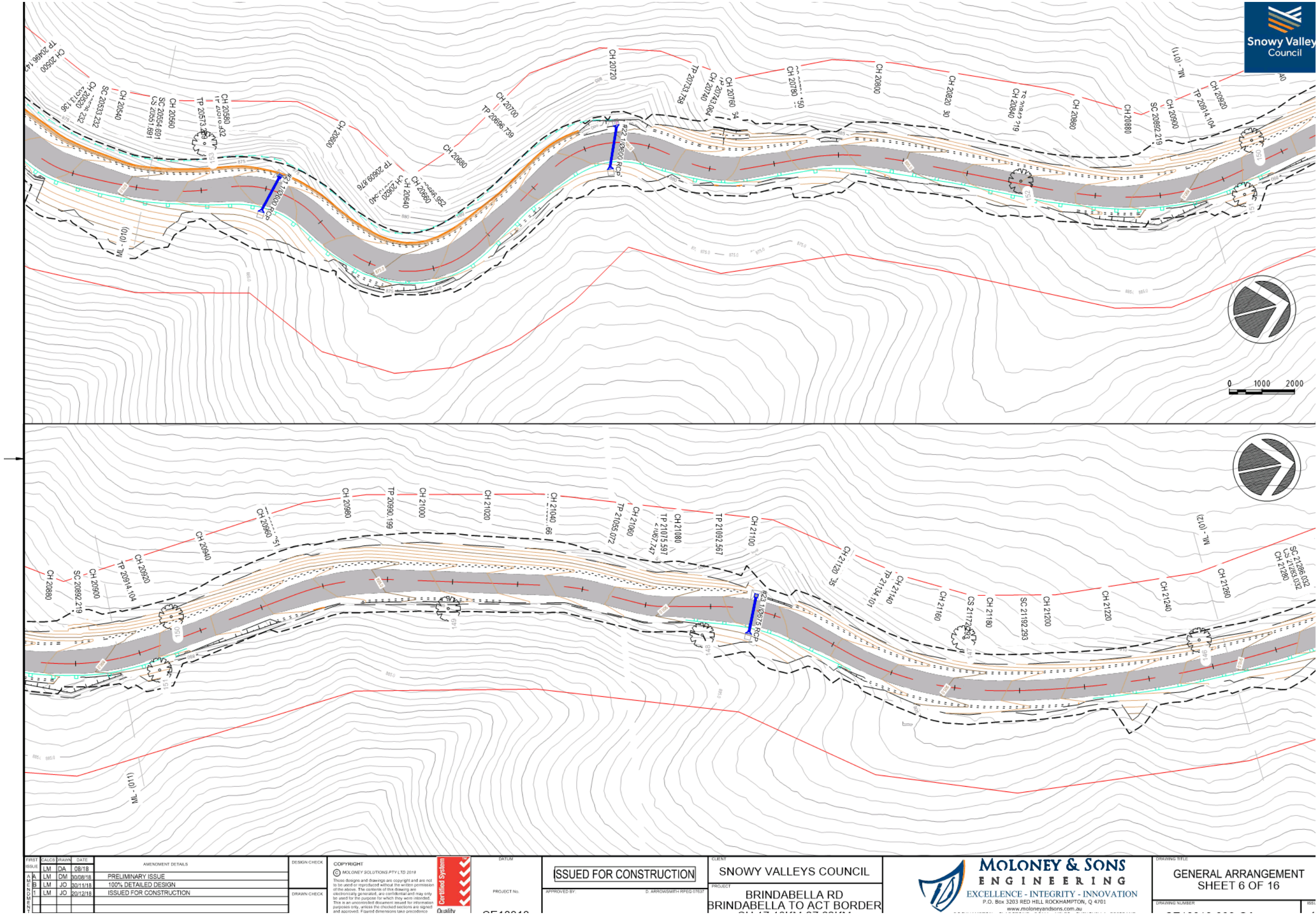


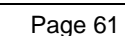


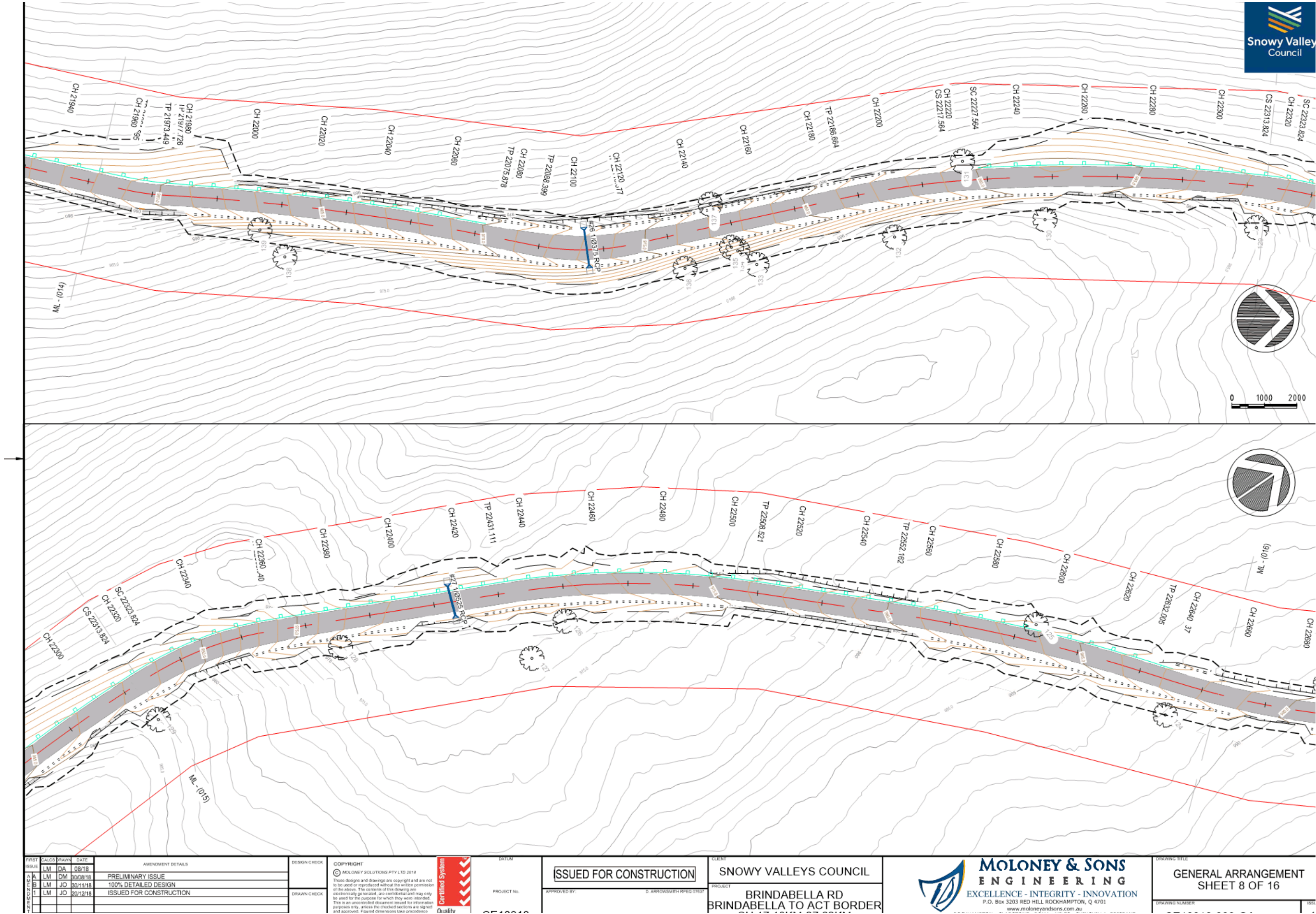


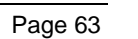


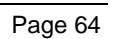


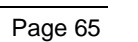


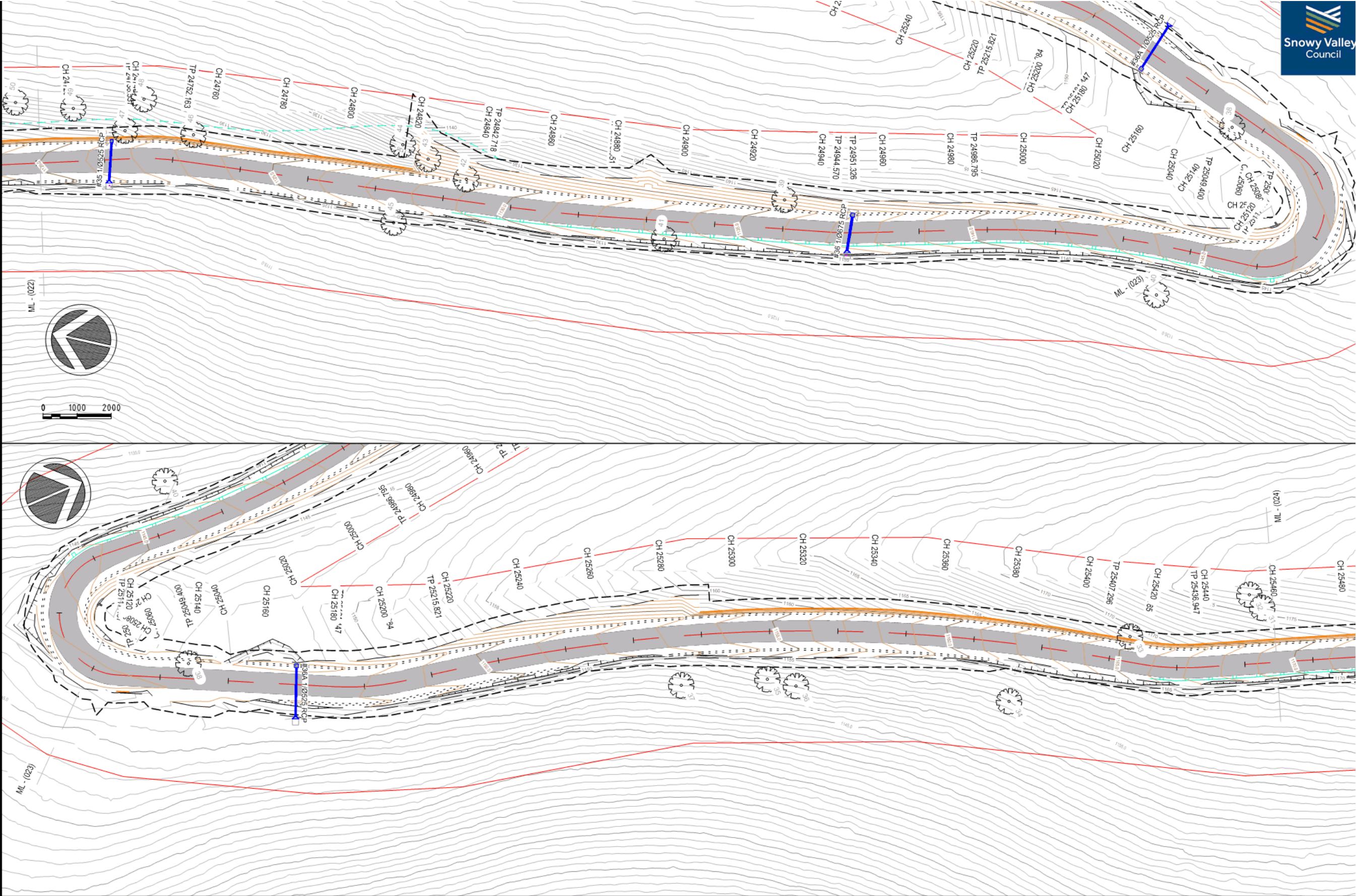












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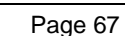
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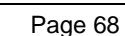
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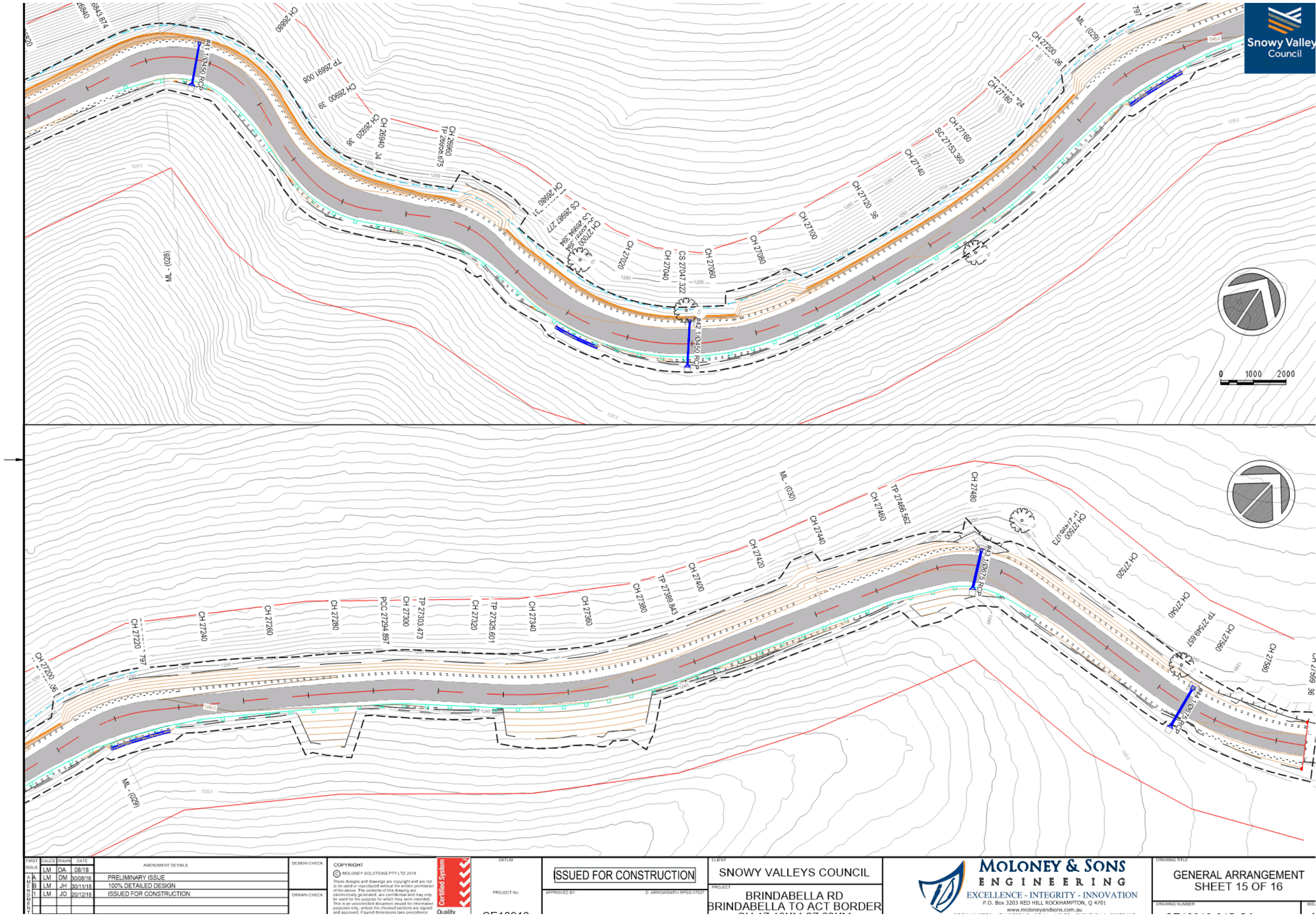
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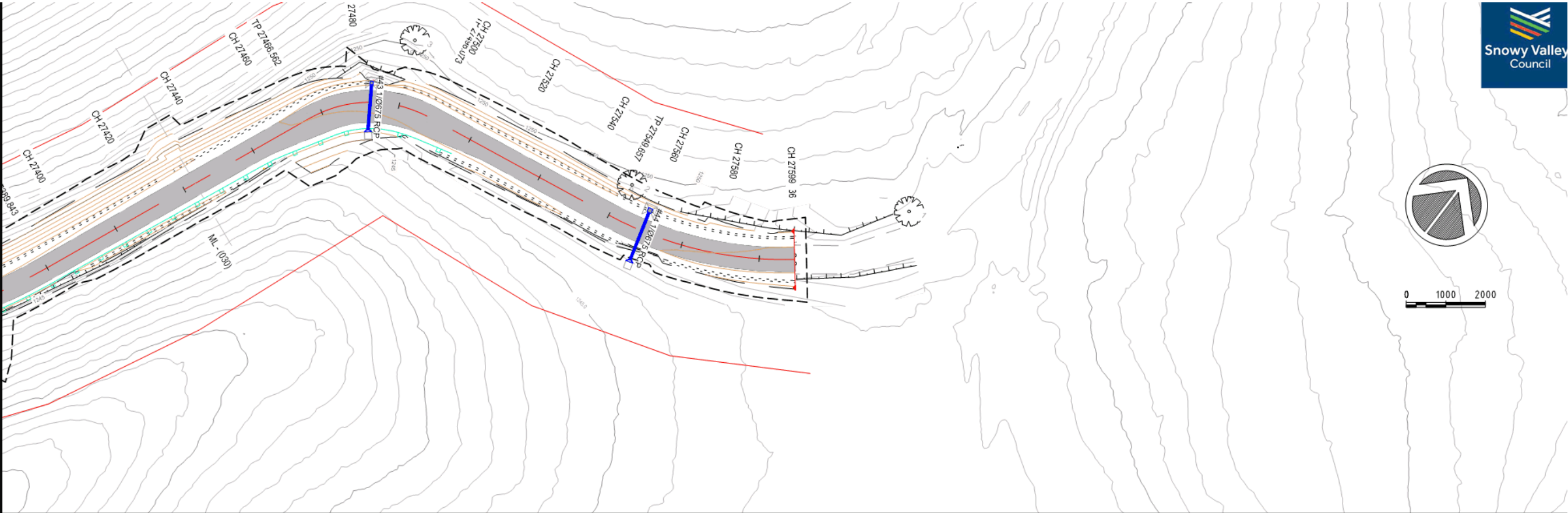
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## 12. CONFIDENTIAL

The Local Government Act provides that Council may close to the public that part of the meeting that deals with matters of a confidential nature. Section 10(2) lists such matters.

The grounds on which a meeting is closed to the public must be specified in the decision to close the meeting and recorded in the minutes of the meeting.

### **Recommendation:**

That Council move into Confidential to consider the matters listed in the confidential section of the agenda in accordance with Section 10(2) of the Local Government Act 1993 for the reasons specified.

#### 12.4 TUMBARUMBA SHOWGROUND RESURFACING PROJECT

*Item 12.4 is confidential under the Local Government Act 1993 Section 10A 2 (d)ii as it relates to information that would, if disclosed, confer a commercial advantage on a competitor of the council and Council considers that discussion of the matter in an open meeting would be, on balance, contrary to the public interest.*