TUMUT TO HUME HIGHWAY
(Snowy Mountains Highway and Gocup Road)
CORRIDOR STRATEGY

July 2016

Transport MASTER PLAN

Tumut to Hume DRAFT CORRIDOR STRATEGY

NSW GOVERNMENT

The road runs through the ranges on the western side of the Great Dividing Range

The road pavement on very steep grades, particularly on Gocup Road, often fails to support traction for fully loaded trucks

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Cover image: Looking north across the bridge over Gilmore Creek on Gocup Road, Tumut

1 INTRODUCTION

Agriculture, forestry and manufacturing timber products are important local industries

1.1 Why a corridor strategy?

Transport for NSW and Roads and Maritime Services are progressively preparing corridor strategies for every State Road in NSW to create consistency and transparency in how the State Road Network is managed and planned. Corridor strategies set a 20 year framework, which brings together road safety, traffic efficiency and asset management activities with policy regarding freight access.

This corridor strategy briefly outlines the objectives and vision for the Tumut to Hume Highway corridor, identifies the road deficiencies against Roads and Maritime Services Network Planning Targets[1], and outlines a management strategy to prioritise actions required to address these deficiencies over the next 20 years. This corridor strategy is in line with the *NSW Long Term Transport Master Plan*, the NSW Freight and Ports Strategy, Regional Transport Plans and other State planning frameworks.

Both Gocup Road and Snowy Mountains Highway are State Roads. They provide connections between rural communities, provide timber haulage routes from forests to timber mills and connected industries, and enable agricultural distribution. Both routes provide alternative connections between Tumut and the Hume Highway.

Gocup Road has been directly identified in the *NSW Long Term Transport Master Plan* and both the Murray-Murrumbidgee and Southern Regional Transport Plans for investigation of upgrades to accommodate modern freight demands and address vehicle safety requirements in the medium term. The NSW Freight and Ports Strategy highlights Gocup Road as an important freight link to connect local forestry and the timber industry to the ports of Sydney and Melbourne. It also highlights efficiency restrictions through the inability of industry to use higher productivity vehicles in this freight task. The Snowy Mountains Highway is identified as a State Highway link between the South Coast and Murray-Murrumbidgee regions. The need for road safety improvements on the Snowy Mountains Highway is also mentioned in the Southern Regional Transport Plan.

1.2 Corridor function

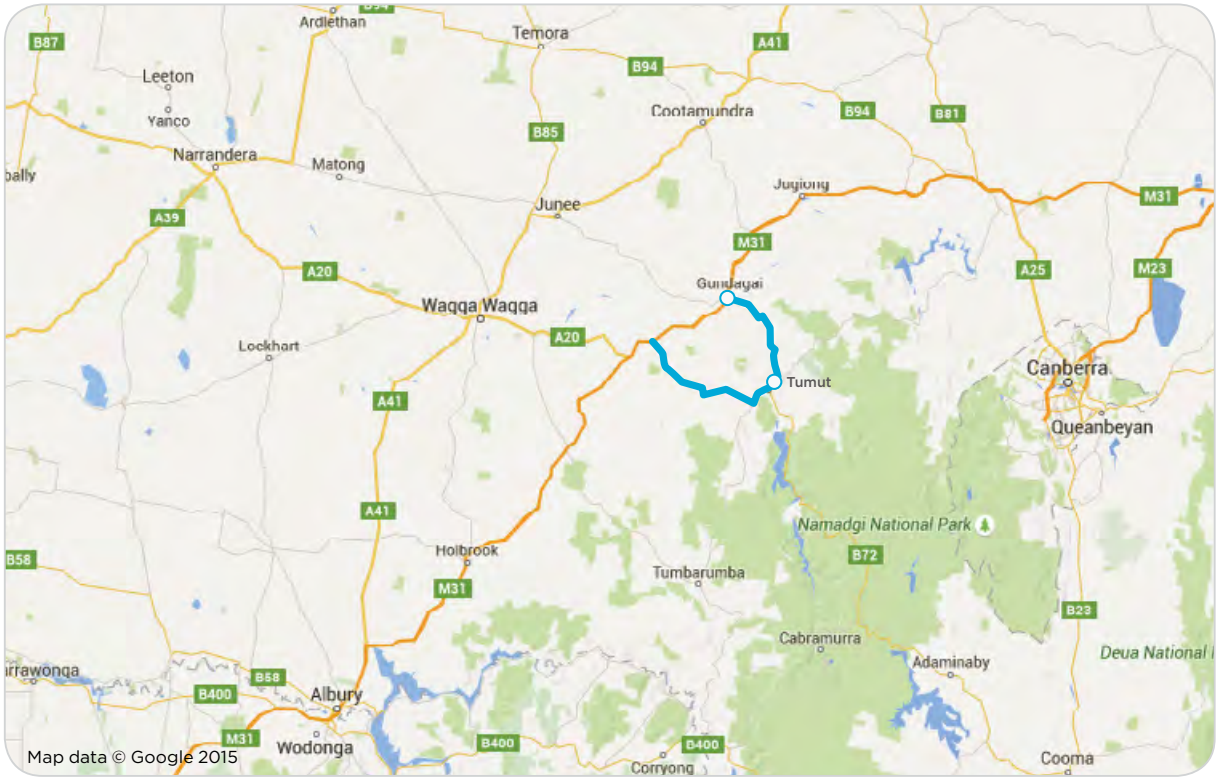
The Tumut to Hume Highway corridor is 76 kilometres long and extends for 46 kilometres along Snowy Mountains Highway from the Hume Highway interchange, via Tumut, then 30 kilometres along Gocup Road to the Hume Highway interchange at Gundagai.

For strategic planning purposes, the Road Network Management Hierarchy is used to classify all roads across the State Road Network according to their relative importance, with Class 6 routes (6R) of the highest strategic importance and Class 1 routes (1R) of the lowest strategic importance. The Tumut to Hume Highway corridor is classified as a Class 3R road for the section on Gocup Road and a Class 2R road for the section on the Snowy Mountains Highway. This hierarchy is directly linked to the Infrastructure Maintenance ranking system used for asset management within Roads and Maritime Services. Both hierarchies are consistent in order to meet the objectives of providing an integrated road management framework.

> “This corridor strategy is in line with the NSW Long Term Transport Master Plan, the NSW Freight and Ports Strategy, Regional Transport Plans and other State planning frameworks.”

1. Some variations to this document have been adopted for this strategy as shown in Appendix 3.

Figure 1-1 Gocup Road and Snowy Mountains Highway from Tumut to the Hume Highway



The corridor passes through the Tumut and Gundagai local government areas and is located in the Southern and Murray-Murrumbidgee planning regions. This corridor links to the Hume Highway, an important national corridor for freight movement (see Figure 1-1).

The Tumut to Hume Highway corridor provides:

- Access for timber and agricultural distribution.
- Connectivity to regional centres.
- A public transport route for school buses and interstate train connections.
- Incident management links for incidents on the Snowy Mountains Highway, Gocup Road and the Hume Highway.
- A tourist and commuter route linking the Hume Highway, Tumut, National Parks and the Snowy Mountains to the east.

1.3 Current population and employment

An estimated 15,000 people live along the Tumut to Hume Highway corridor, with 61 per cent of the population in the major regional towns and centres of Tumut, Gundagai and Adelong (2011 ABS Census).

Population and employment figures for each town in the corridor vary depending on the demographic and community characteristics of each local government area as shown in Table 1-1.

Table 1-1 Population and urban centre demographics by local government area (LGA)

LGA	2011 LGA population	Urban centres	2011 urban population	% Aged over 65 years	% Aged 0–14 years	Median age	% labour force employed full time	Main employment by industry
Tumut	10,934	Tumut	6086	18.7%	20.2%	41	61%	Agriculture (5.2%); School Education (4.9%); Log sawmilling and timber dressing (4.2%)
		Adelong	885	14.7%	9.2%	40	63.2%	
Gundagai	3662	Gundagai	1926	18.9%	21.5%	42	58.9%	Agriculture (19.1%); Food service industry (6.5%); Meat and meat product manufacturing (6.3%)
Total	14,596		8897					
NSW State average				14.7%	19.2%	38	60.2%	

The Snowy Mountains Highway travels through the main commercial centre of Adelong

1.4 Economic development and land use changes

The corridor plays a key role in connecting farming areas and regional towns. It provides access from timber forests to mills near Tumut, as well as a freight link with corridors such as the Hume Highway and Snowy Mountains Highway for the resulting timber products. The industry is important to the State economy with Tumut Shire Council estimating the value of forestry product at $620 million per year from the South West Slopes in 2010, 25 per cent of which is exported. The Visy mill located between Tumut and Adelong is a major hub for the majority of this freight. In these towns the corridor forms part of the access to local industry including timber mills and abattoirs.

The population is forecast to remain stable in this area, however economic pressures for increased productivity historically result in a push for larger machinery. As a consequence, supporting businesses need to develop the ability to work with this equipment. Along with this, there will be associated pressures for businesses to move to larger properties.

The Tumut urban area that the Snowy Mountains Highway passes through is restricted by the mountainous terrain and the Tumut River. There is ribbon development on the outskirts of Tumut, with reduced speed zones on the Snowy Mountains Highway from Whatmans Lane (the start of the Gilmore Industrial Area 4.8 kilometres west of the Tumut CBD), to Gocup Road (one kilometre west of the Tumut CBD). Based on past development applications the area on the western side of Tumut is the only area within the corridor with any development pressure to expand the urban area (see Figure 1-2).

Figure 1-2 Ribbon development along Snowy Mountains Highway, west of Tumut

1.5 Rail freight

The freight rail network in the vicinity of the Tumut to Hume Highway corridor consists of a non-operational Cootamundra to Tumut rail line, a branch of the Main South Line (as shown in figure 1-3). Transport for NSW has released a Request for Tender (RFT) to ascertain the private sector interest in restoring, operating and maintaining the 104 kilometres Cootamundra to Tumut branch line on a commercially sustainable basis without State funding. The benefits of reinstating the railway line for the freight industry in the area will be further investigated by the private sector through the RFT process.

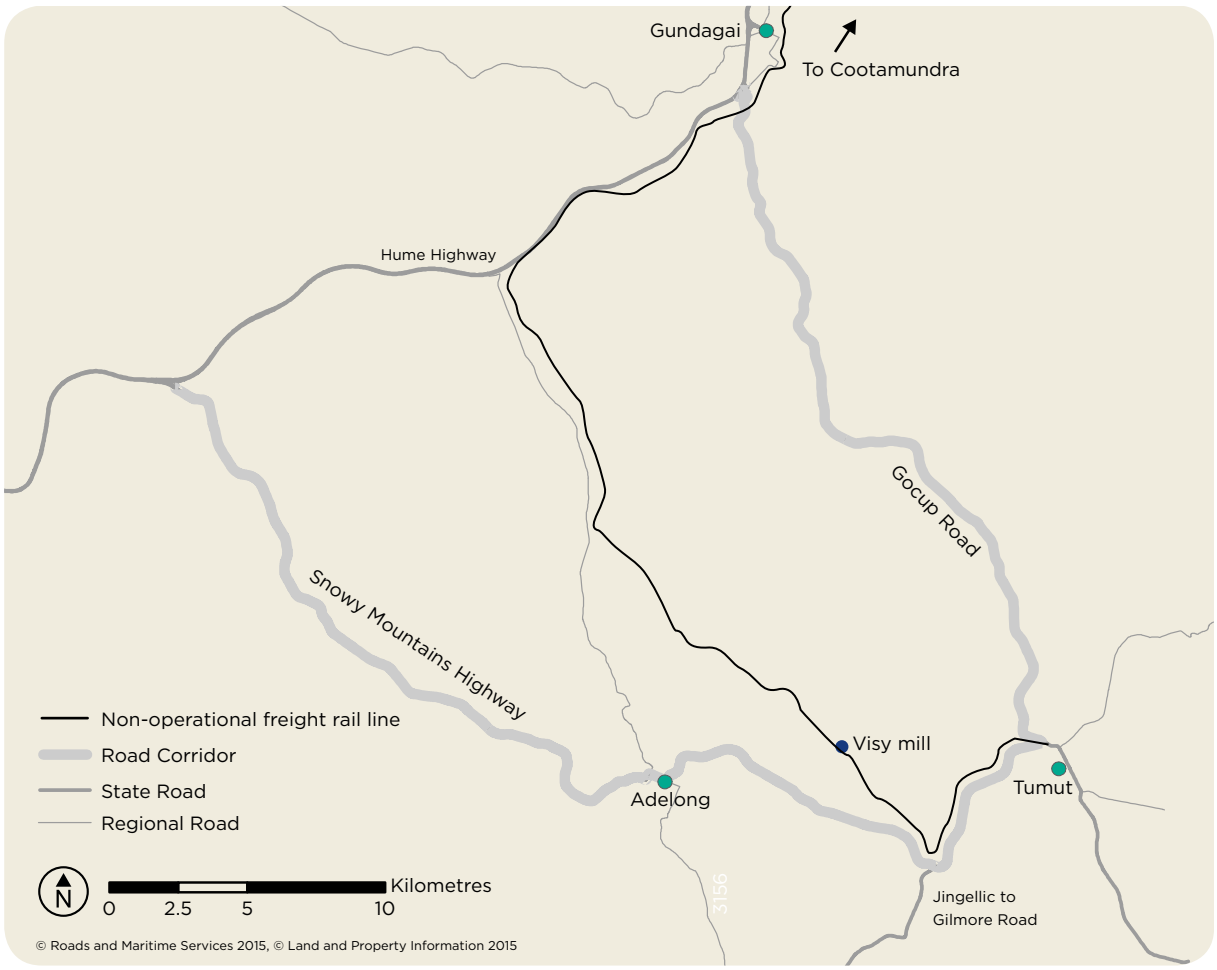
In the interim, the NSW Government has made a commitment to improve road safety and traffic efficiency along the Gocup Road under the $70 million program of works funded by the Regional Freight Pinch Point and Safety Program under Restart NSW.

The proposed road improvements anticipate progressive upgrade of the corridor to ensure that all road customers can use the road safely and to accommodate modern freight demands in the short to medium term. The principal containerised freight task in the area is the movement of timber and waste paper to/from Visy's mill.

However, there are also significant other commodities produced and transported in the region. It is important to note, that the road corridor improvements on Gocup Road will provide road safety and traffic efficiency benefits not only to the timber industry, but also to a wider range of other industries transporting agriculture and horticulture in the region, as well as local and regional commuters and tourist traffic.

These benefits will be realised in short to medium term through the NSW Government funding commitment for improvements on Gocup Road.

Figure 1-3 Non-operational freight rail line



1.6 Traffic volumes and heavy vehicles

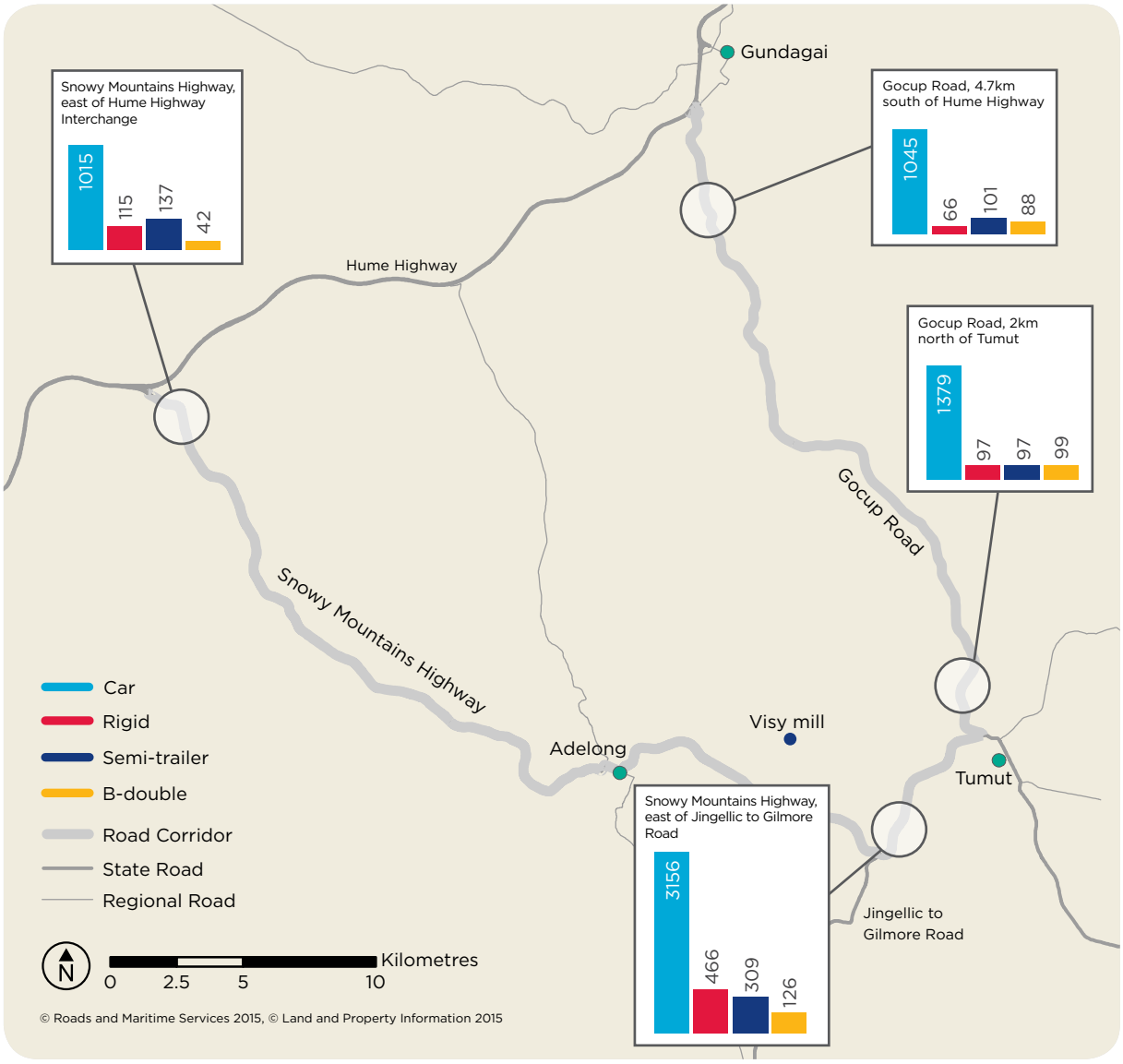
The average daily traffic volumes from 2012 and 2013 traffic surveys on the Snowy Mountains Highway and Gocup Road near the Hume Highway were approximately 1300 vehicles per day (as shown in Figure 1-4). The volume increases near Tumut to 4057 vehicles (Snowy Mountains Highway, east of Jingellic to Gilmore Road), which is around three times the general volume along each route.

The heavy vehicle fleet (Appendix 1) is characterised by larger vehicles used to move bulk freight efficiently.

The ratio of rigid trucks to semi-trailers to B-doubles on the Snowy Mountains Highway near the Hume Highway is 39:47:14. The ratio of these vehicles between Adelong and Tumut is 52:34:14 and on Gocup Road near the Hume Highway is 26:40:34.

The higher proportion of semi-trailers on the Snowy Mountains Highway near the Hume Highway can be largely explained by the majority of the freight task from the Visy Mill occurring through Adelong as containers on semi-trailers. The curfew restriction prevents Visy trucks on the Snowy Mountains Highway through Adelong between 10pm and 7am.

Figure 1-4 Average daily traffic volume



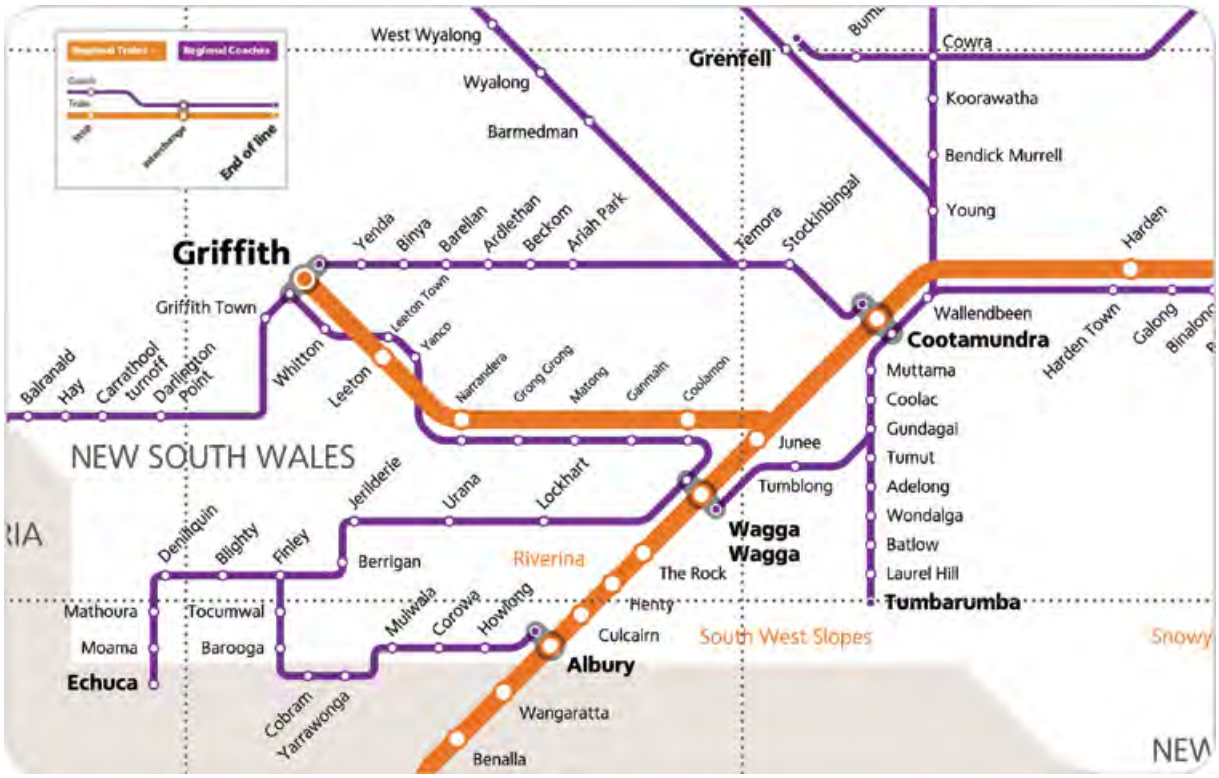
1.7 Public and active transport

Public transport is used for local, regional and interstate travel. Tumut and Gundagai are serviced by the Tumbarumba NSW TrainLink regional coach service which connects with the Sydney–Melbourne XPT at Wagga Wagga on Monday, Wednesday and Friday and at Cootamundra on Tuesday, Thursday and Sunday (see Figure 1-5). Services are limited due to low demand. The services generally arrive and depart regional centres in the middle of the day. Consultation with local government identified that limited capacity could be an issue at certain times. In addition to NSW TrainLink, Gundagai is also serviced by de-regulated long distance coach operators; Greyhound and Firefly on Melbourne to Canberra/Sydney route, and VLine that operates to Canberra. Gundagai, Tumut and Adelong are serviced by community transport which is generally only available weekdays during business hours although it is expanded occasionally. The community transport services do out of town work and connect regularly to either Canberra or Wagga Wagga.

There are regional school bus services along the route. Tourist buses also stop outside of the Tourist Information Centre on the Snowy Mountains Highway near Gocup Road but there are no stopping facilities for the buses or pedestrian facilities to cross the road. Tumut has a number of taxi operators and Gundagai a single taxi operator.

Active transport is important in rural towns and Tumut, Adelong and Gundagai have pedestrian and cycling facilities within the towns which have been planned and delivered under Pedestrian and Bicycle Plans since 2000. The long distance between towns, steep grades, fast moving traffic and extensive sections of narrow shoulder width are not conducive to bicycle travel along the corridor, yet bicycles could provide a good transport option for workers at the Gundagai Abattoirs located a short distance from the town.

Figure 1-5 Regional Trains and Coaches network



2 A VISION FOR THE FUTURE AND CORRIDOR OBJECTIVES

Widening shoulders on the outside of curves increase the chance of drivers returning to the travel lanes. Hazards removed from clear zones reduce the severity of crashes.

2.1 Corridor vision

The vision for the Tumut to Hume Highway corridor over the next 20 years is:

- To provide safe and efficient access for; Performance Based Standards (PBS) Class 2A vehicles on the Snowy Mountains Highway between the Hume Highway and Visy mill, and PBS Class 2B vehicles on the Snowy Mountains Highway between Visy mill and Tumut, and on Gocup Road (see Appendix 2).
- Manage the corridor using the Safe System approach to road design, construction and management with road safety improved over the life of the strategy.
- Provide reliable travel times for local and regional road users and an improved customer experience.

Table 2-1 NSW Long Term Transport Master Plan objectives and corridor objectives

NSW Long Term Transport Master Plan objectives	Tumut to Hume Highway corridor objectives
Improve liveability / reduce social disadvantage	• Improve travel efficiency for all road users between Tumut and the Hume Highway by providing overtaking opportunities, and facilitating more reliable travel and access between Tumut and Gundagai, and Tumut and the Hume Highway/Snowy Mountains Highway interchange. • Work in partnership with local government and the community to provide initiatives for cycling, walking and public transport within the town centres of Tumut, Adelong and Gundagai.
Economic growth / productivity	• Improve freight productivity and connectivity by upgrading the road standard from the Visy mill to the Hume Highway via Tumut, to provide access for more efficient higher productivity vehicles (PBS Class 2B). • Maintain and improve the road by continuously upgrading lane and shoulders widths and alignments to meet network planning targets. This will continue to provide safe freight access for 26 metre B-double vehicles on the Snowy Mountains Highway between the Hume Highway and the Visy mill, and PBS Class 2B vehicles on the Snowy Mountains Highway between Visy mill and Tumut and on Gocup Road.
Regional development / accessibility	• Better manage the road network so that it provides a reliable alternative route for Hume Highway traffic during incidents. • Ensure the road pavement and wearing surface meet the needs of freight traffic on steep grades during wet and very hot weather.
Improve sustainability	• Maintain the corridor's current high environmental conservation value and minimise impacts on the natural, built and community environments along the corridor. • Balance the need to provide five metre roadside clear zones on the rural sections of the corridor and 10 metre clear zones on the outside of substandard curves, against any impact on existing conservation measures in the road reserve.

NSW Long Term Transport Master Plan objectives	Tumut to Hume Highway corridor objectives
Safety and security	• Implement the Safe System approach and campaigns to reduce the number and severity of crashes along the corridor, in particular related to run-off-road crashes. • Improve the road safety outcomes for all road users by widening sections of the corridor with narrow lanes and narrow or unsealed shoulders, and addressing sections of the corridor with steep grades and tight curves.
Improve transport integration process	• Plan for road infrastructure while considering rail planning activities to support present and future land use development, changes in movements to port, and potential future growth in the forestry and timber industry in the South West Slopes of NSW. • Work with Gundagai and Tumut shire councils to support transport planning processes by responding to current and future transport needs.

The Visy mill located between Tumut and Adelong is a major hub for much of the forestry freight

3 CURRENT CORRIDOR PERFORMANCE

Limited opportunity to overtake slower vehicles, particularly loaded trucks

Transport for NSW and Roads and Maritime Services measure and monitor road performance against network performance measures and targets. Network measures allow current and future performance to be assessed. Network planning targets are either:

- Network wide targets – cumulative condition targets that apply to the entire network, unless otherwise specified.
- Rural planning targets – apply to regional NSW, not including Wollongong, Newcastle and Sydney.

To assess the Tumut to Hume Highway's current corridor performance, the following sources have been used:

- Network Performance Measures and Network Planning Targets[2]
- Network and Corridor Planning Practice Notes[3]
- Variations as identified in Section 3.3 Road Geometry

To assess the route's minimum requirements to provide access for higher productivity vehicles, the National Transport Commission (2007) PBS Scheme – Network Classification Guidelines have also been used (see Appendix 3).

The following summary presents an assessment of the current corridor performance and is grouped into four sections:

1. Road safety
2. Traffic
3. Road geometry
4. Pavement condition

3.1 Road safety

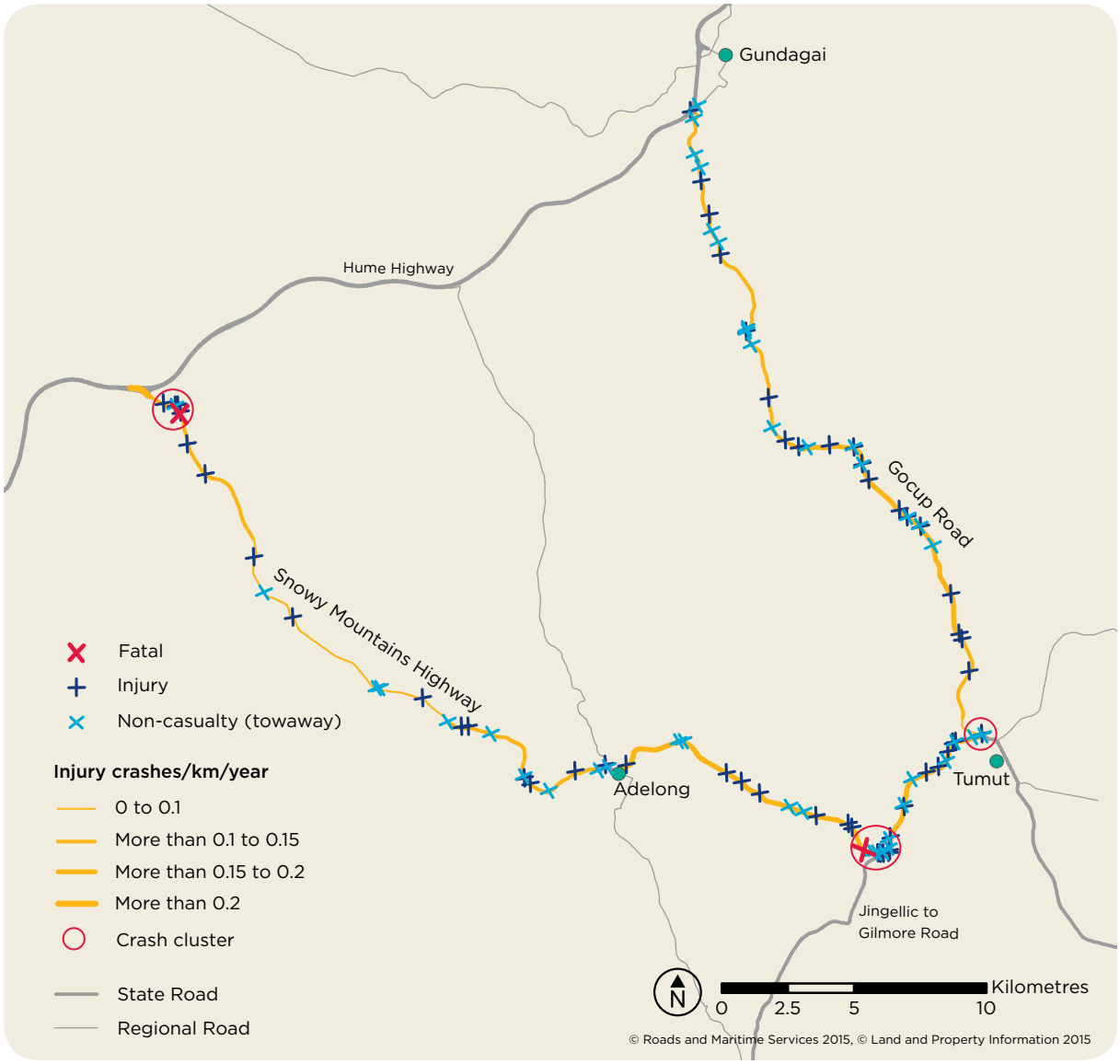
There were 128 crashes along the corridor from January 2009 to December 2013 (as shown in Figure 3-1), which resulted in 91 injuries and two fatalities. This is a crash rate of 0.18 casualty crashes/per kilometre/per year which is similar to the average of 0.19 casualty crashes/per kilometre/per year on other comparable roads across the State. Three crash clusters were identified: the Snowy Mountains Highway one kilometre east of the Hume Highway interchange; the curve east of the intersection with Jingellic to Gilmore Road; and the intersection of the Snowy Mountains Highway and Gocup Road at Tumut which is near a bridge on a curved alignment with no safety barrier on the approaches.

Hazards in the clear zone are dangerous for errant drivers

2 Roads and Maritime Services 2010, *Network Performance Measures and Network Planning Targets*, RMS Sydney

3 Roads and Maritime Services 2008, Network and Corridor Planning Practice Notes, RMS, Sydney

Figure 3-1 Crash rate and crash locations from January 2009 to December 2013

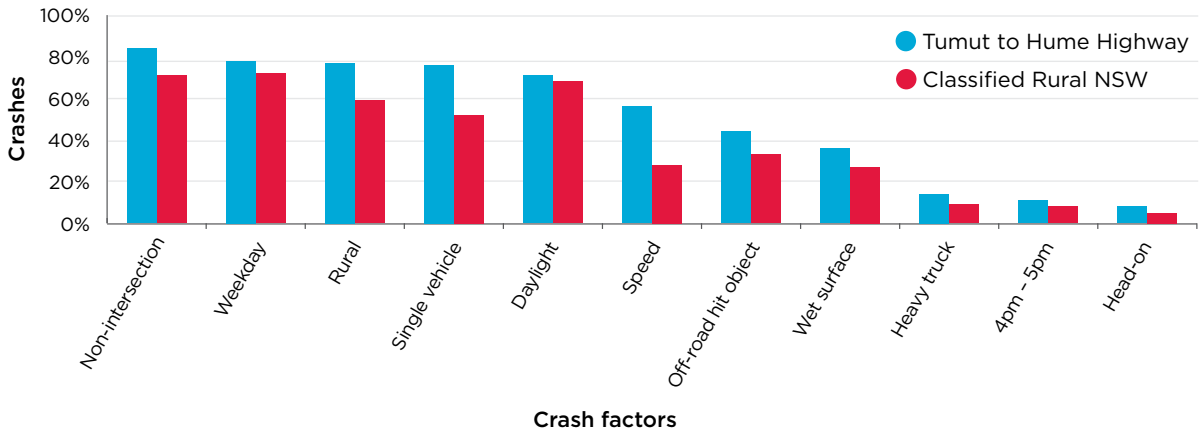


The main crash factors are shown in Figure 3-2 but they were typically single vehicle rural off-path crashes occurring during the day. Speed was a major factor in 56 per cent of the crashes with: off-road hitting an object; wet surface; crashes between 4pm and 5pm; and head-on crashes occurring more often than the State average for classified rural roads. Fatigue and alcohol were less of a factor compared to other similar roads.

Heavy vehicles are represented in 14 per cent of crashes, which is higher than the State average of nine per cent for rural areas. This is consistent with other roads in the region and can be attributed to the relatively high proportion of heavy vehicles on the roads transporting freight.

“Heavy vehicles are represented in 14 per cent of crashes, which is higher than the State average of nine per cent for rural areas.”

Figure 3-2 Main crash factors on the Tumut to Hume Highway corridor compared to the average for rural roads in NSW 2009 to 2013



3.2 Traffic

Traffic was modelled with TRARR (Traffic on Rural Roads) software to assess current and potential future overall levels of service based on average travel speeds during the peak day, non-peak day and night travel periods. For the assessment, the traffic volume was doubled over the next 30 years, based on trends in traffic changes in recent decades. The model demonstrated an overall Level of Service 'C' for Gocup Road, indicating good travel conditions throughout the corridor for all travel times and years. Despite the generally good Level of Service more detailed modelling shows that cost-effective overtaking lanes could be built on the steeper grades of Gocup Road where there is a significant difference in travel speeds between loaded trucks and cars. The community has also raised concerns about the difficulty to overtake on the Snowy Mountains Highway, particularly west of Adelong.

A curfew restricts operation of trucks through Adelong between 10pm and 7am serving the Visy mill. If truck drivers are caught by the curfew then they may need to find a rest area to break their journey.

Speed zones were assessed across the region in 2014 and this corridor was considered to have appropriate speed zones, with the exception of part of Gocup Road near the abattoirs which was consequently reduced to 80 km/h.

The ribbon development along the Snowy Mountains Highway through the Tumut urban area has many access points which increase conflict between vehicles, reduce traffic efficiency by lowering travel speeds, and increase the risk of crashes.

There are 19 rural 'at grade' intersections in the corridor and two 'grade separated' interchanges with the Hume Highway. Roads generally are widened at intersections to allow vehicles to pass right turning vehicles. However, only three intersections along this corridor have left and right turn provisions that meet planning targets. Truck queuing outside Carter Holt mill at Tumut also causes vehicle conflict and linemarking between Gilmore and Tumut does not clearly guide the travel path.

This corridor and the Hume Highway are B-double routes, with the Tumut to Hume Highway corridor forming part of the incident response route for incidents that occur on the Hume Highway, and the Hume Highway performing a similar function for this corridor. There is no B-double access on the Snowy Mountains Highway east of Talbingo due to the steep terrain and narrow road formation. The steep descent through the curves on either side of Adelong is challenging for trucks. In addition, several right turns along Snowy Mountains Highway through Adelong cause difficulty for truck movements through the town. The use of the alternative route along Lynch Street is undesirable due to the steep hills which may result in higher travel speeds as well as the presence of a school zone.

Bypasses

There are two towns within this corridor – Tumut and Adelong. The Snowy Mountains Highway travels through the main commercial centre of Adelong, but does not travel through the centre of Tumut. The *NSW Long Term Transport Master Plan* sets out a framework to assess town bypasses on State Roads where the road travels through the main commercial centre of the town. Bypasses are only targeted in the Network Planning Targets for roads graded higher than the rural road Classes 2 and 3 in this corridor. The bypass framework requires current and future volumes of traffic to be considered when assessing the need and economic viability of a bypass solution. As such, a bypass of Adelong is considered not viable because the current and future traffic volumes would not be high enough to provide sufficient benefit.

3.3 Road geometry

Road geometry includes anything which describes the road formation including the grade (steepness), curvature, lane and shoulder widths and the clear zones (removal of roadside hazards such as trees and culverts five metres from the road). These characteristics contribute to the road safety, traffic efficiency and freight performance of a road.

Grade

This corridor runs through the ranges on the western side of the Great Dividing Range with the route passing through two large ranges, one on both approaches to Adelong and the other between Tumut and Gundagai. These ranges are associated with long steep sections of road with grades of up to 10 per cent that are difficult for loaded trucks to negotiate and not cost-effective to flatten (Figure 3-3).

Figure 3-3 Elevation and grade along the corridor

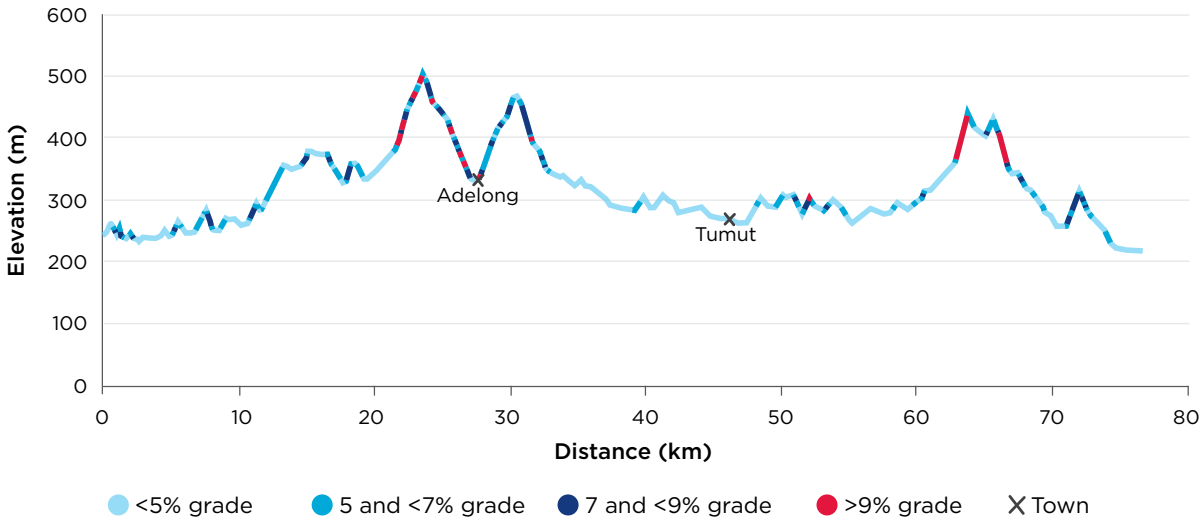
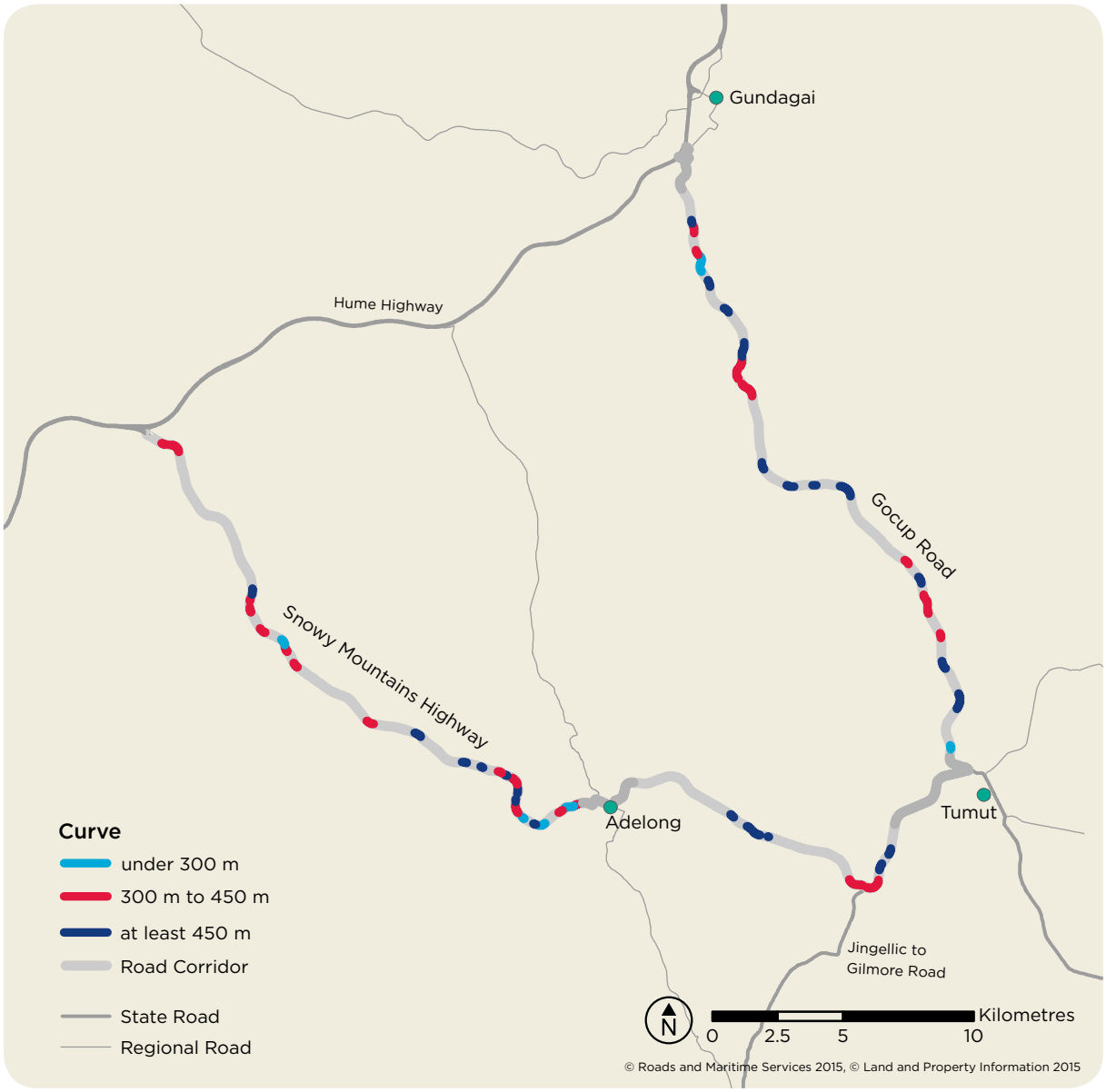


Figure 3-4 Curves on rural sections of the road



Curves

The road through the hills is curved and undulating, which restricts sight distance due to the adjacent cuttings and vegetation. Most of the very tight curves with a radius of less than 300 metres are located in the urban speed zones of 80 km/h or less, where traffic should be travelling at a speed that would enable these curves to be negotiated safely. The major issue are the curves with a radius of between 300 metres and 450 metres occurring in 100 km/h speed zones where drivers do not realise the difficulty in driving through these curves.

These sharp curves are located on the Snowy Mountains Highway one kilometre from the Hume Highway west of Tumut, over the steep range seven kilometres west of Adelong to the Adelong main street and in the vicinity of the intersection with Jingellic to Gilmore Road. On Gocup Road the main location is on the northern side of the steepest range, about 21 kilometres north of Tumut (Figure 3-4).

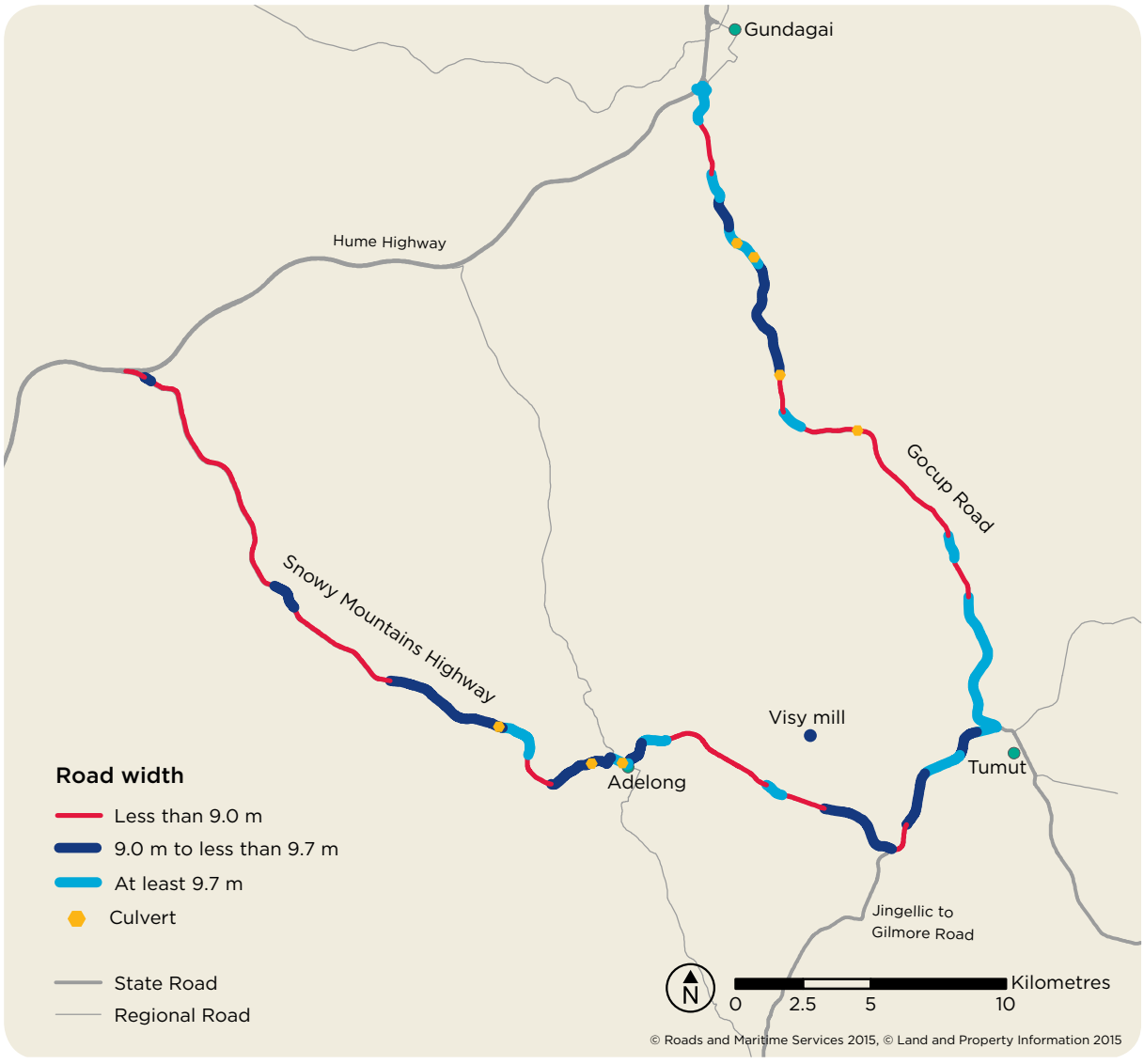
Road width

The roads in the corridor are built on narrow formations that have been widened over time with narrow clear zones. The target width for these roads is nine metres with 3.5 metre travel lanes and one metre sealed shoulders, which is wide enough for B-doubles. Despite the incremental widening, 43 per cent of the corridor is narrower than the target width, including over half of the Snowy Mountains Highway where most of the narrow road is west of the Visy mill. To allow enough width for the tracking of PBS Class 2B vehicles a target pavement width of 9.7 metres (3.5 metre wide travel lanes and 1.35 metre wide shoulders) will be adopted (as shown in Appendix 3).

Structures

If culvert, bridge or slope risk ratings move into higher classes they are monitored more closely and the issues fixed so that no incidents occur. The main structural deficiencies are seven culverts that are considered high risk of joint failure or collapse in the next five years; these are being monitored and will be repaired or replaced before a risk to motorists occurs (Figure 3-5). Fifteen culverts are also considered medium risk. All bridges and bridge sized culverts in the corridor are in good condition and meet planned load requirements. There are currently no high risk slopes in this corridor although two have been assessed as medium risk. These are 16 and 42 kilometres west of Tumut.

Figure 3-5 Road width and deficient bridges, culverts and slopes



Network Planning Targets

This corridor strategy requires the following changes to the Network Planning Targets to be adopted for works on the corridor and as shown in Appendix 3:

1. A 100 km/h design speed will need to be adopted for this corridor due to the steep terrain.
2. A 9.7 metre road pavement width (lane and sealed shoulders) will need to be adopted from the Visy mill intersection on the Snowy Mountains Highway to Gundagai, to allow for more efficient High Productivity Vehicles.

3.4 Road pavement condition

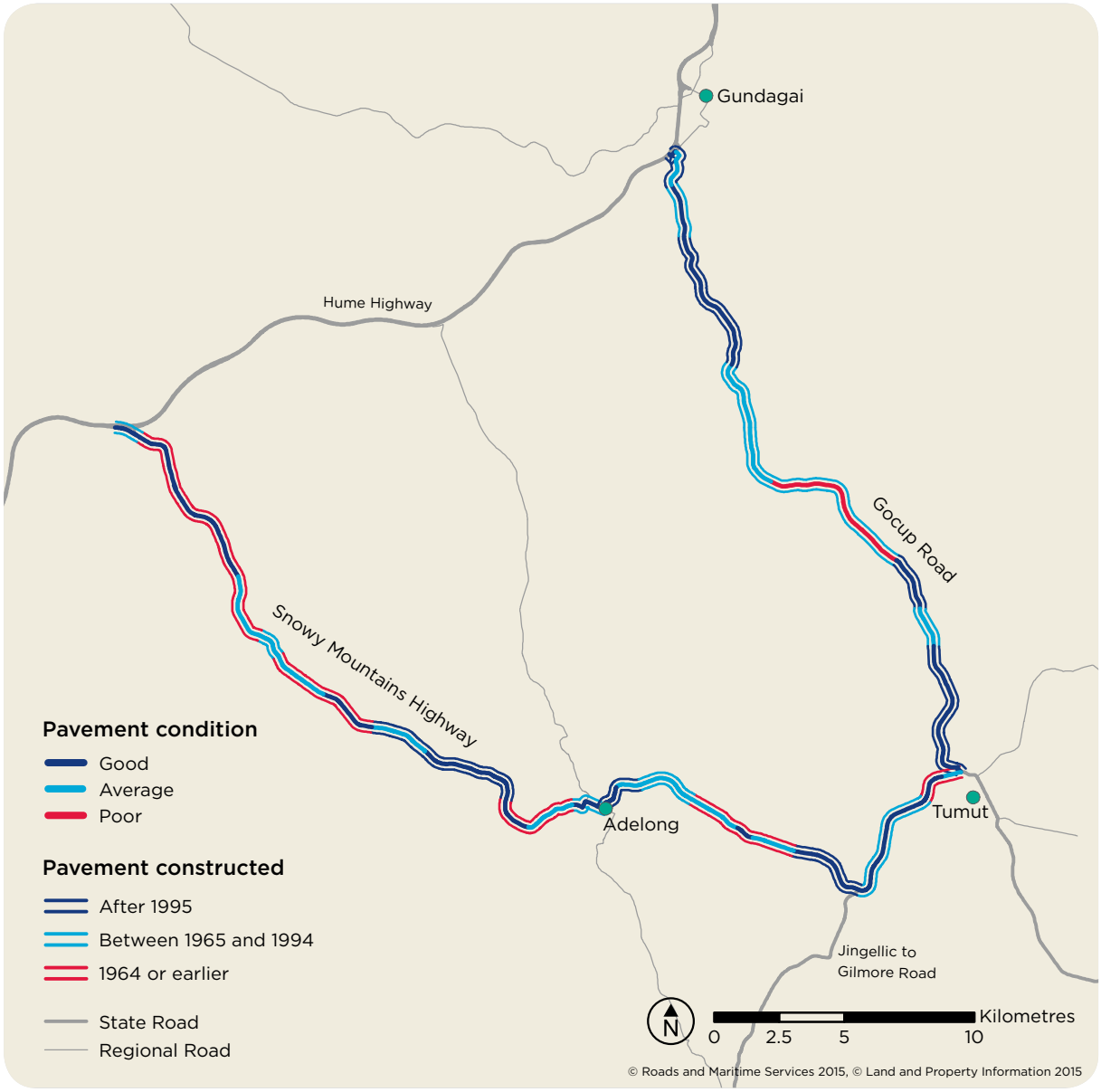
Roads deteriorate over time due to wear from traffic and environmental effects. Timely road maintenance prevents defects from escalating into bigger problems that are more expensive to repair. The main characteristics of pavement condition that are assessed are roughness, uneven surface, cracking and skid resistance. Using these characteristics the pavement condition (shown in Figure 3-6) has been divided into three classes with good being better than average and poor worse than average. Rough roads have higher travel costs and vehicle maintenance costs, particularly for trucks. When road maintenance work is done there is an opportunity for other cost-effective changes to be made to the road.

Forty five per cent of the pavement is rated as 'good', with 55 per cent of the Snowy Mountains Highway and one third of Gocup Road rated in this category. Only four kilometres (six per cent) of the pavement was rated as 'poor', this is on Gocup Road in the Tumut Shire Council area. The pavement age is very different between the two roads in the corridor; more than half of the pavement on the Snowy Mountains Highway was constructed at least 50 years ago and 95 per cent of the pavement on the Gocup Road has been constructed within the past twenty years. The surface is spray seal with the exception of the Adelong main street which has an asphalt wearing surface and is in very good condition.

Most of the pavement in the corridor has passed its design life and is showing signs of distress with many outer wheel path failures and full width pavement failures. Much of Gocup Road was widened before it was classified as a State Road in 2010 but the road foundation was thin and lower strength with a shorter design life compared to the planning targets now used for planned freight needs. Since 2012 more heavy duty pavements with higher quality materials and a 20 year design life have been used. Some road rehabilitation and widening work has been completed on Gocup Road but there are still long lengths of poor pavement and some of it has failed in the Tumut Shire Council area.

The current strategy is to reseal the roads regularly, fixing defects by heavy patching prior to sealing. Due to the road being narrow along much of the corridor, it's necessary to stop traffic during maintenance works while heavy machinery accesses the road, causing delays to road users.

Figure 3-6 Age and condition of road pavement



4 CORRIDOR CHALLENGES AND PRIORITIES

Section of Gocup Road to be widened and road pavement strengthened

The NSW Government has committed $70 million to upgrade Gocup Road, funded from the Regional Freight Pinch Point and Safety program. This corridor strategy supports this government funding commitment.

Works completed to date on Gocup Road as part of the Regional Freight Pinch Point and Safety program include road widening south of Gocup, improvement of road shoulders and alignment near Minjary and road widening, realignment and intersection improvements south of Gundagai. Works currently underway include road widening, drainage works, minor curve improvements and replacing the road surface along road sections south of Minjary and north of Tumut.

Corridor challenges are the main issues that need to be overcome to maintain or improve transport roles and services that the Tumut to Hume Highway corridor provides for the community. They include challenges already evident and others that are expected to emerge as the result of future changes in land use and demographics. These challenges have been mapped below.

NSW Government priorities for responding to these challenges are also outlined below. The priorities are divided into short, medium and long term actions to be delivered over the next 20 years. Implementing these actions will improve road safety, traffic efficiency and reliability, offer whole-of-life economic benefits and increase the productivity of the Tumut to Hume Highway corridor.

Regular monitoring of this corridor strategy will be carried out, with progress reviewed every three years to identify any issues. Monitoring will also help to identify new actions or tasks that may be required to ensure ongoing opportunities along the Tumut to Hume Highway corridor are considered.

The corridor strategy will be targeted for review every five years. Implementation of the final strategy will be a shared responsibility with the NSW Government and councils, in collaboration with other State agencies.

Corridor planning section

The following corridor planning sections are used in the tables below:

1. Snowy Mountains Highway from Hume Highway to Visy mill
2. Snowy Mountains Highway from Visy mill to Tumut
3. Gocup Road, Tumut to Gundagai

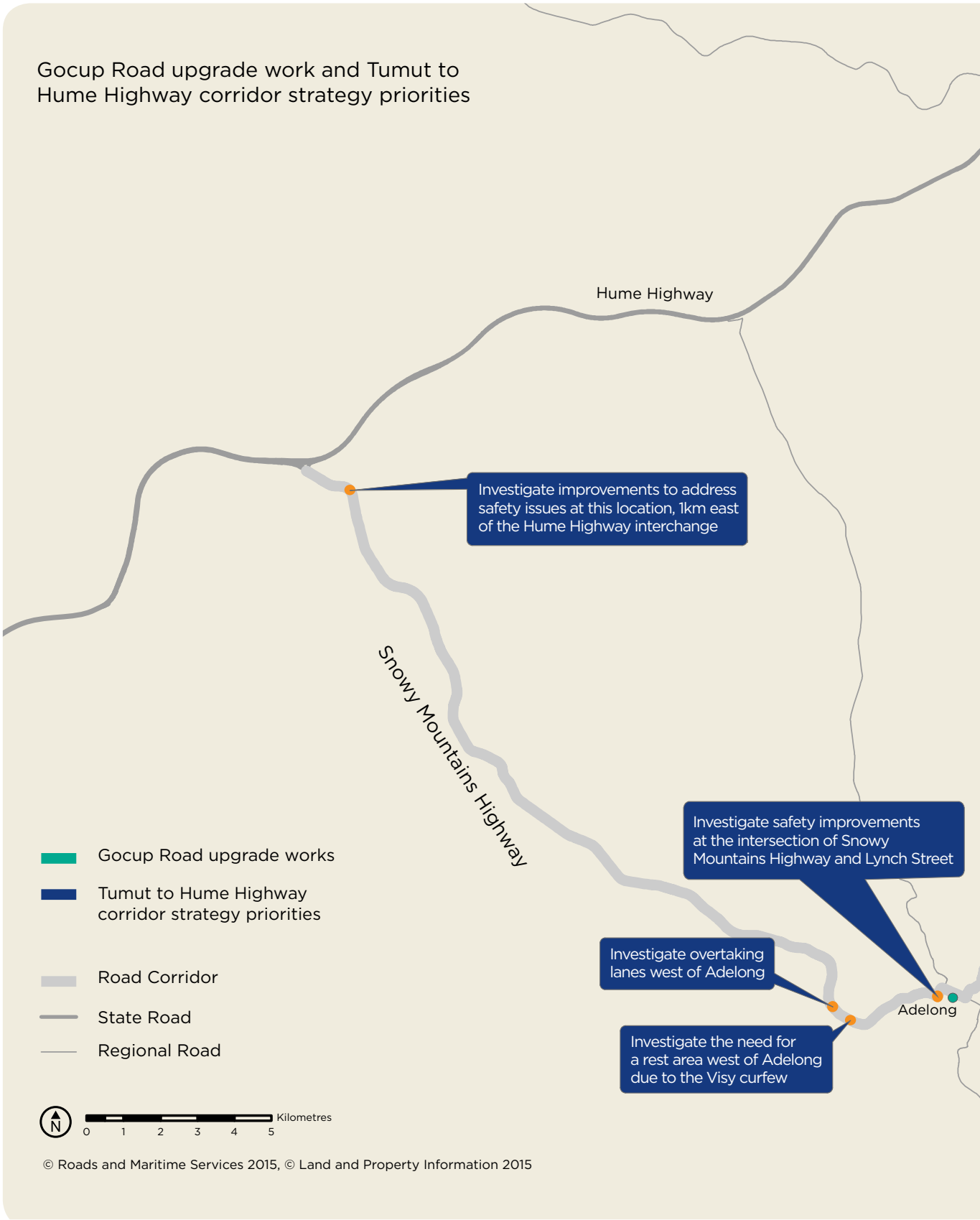
4.1 Short term

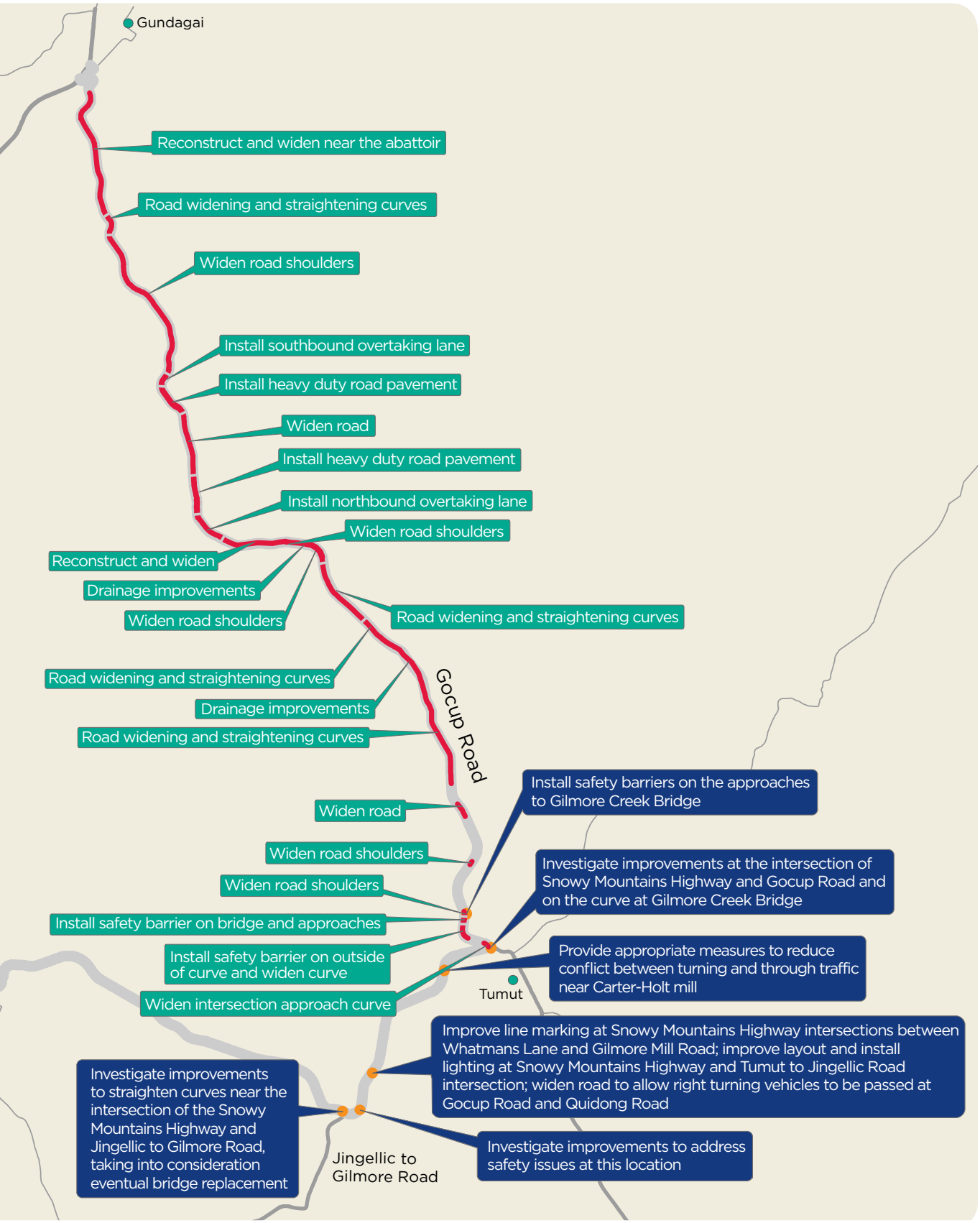
Table 4-2 Key challenges and short term priorities

Corridor planning section	Key challenges	Priorities	Strategic response reference
2, 3	Efficiency for freight on the corridor is limited by the capacity of the vehicles which can operate on the corridor	Implement an upgrade of Gocup Road that improves road pavement width and alignment suitable for High Productivity Vehicles PBS Class 2B	3.3 Road geometry
1, 2, 3	Some sections of the corridor are too narrow for heavy vehicles	Widen travel lanes to network target of 3.5 metres, with priority being Gocup Road, then Snowy Mountains Highway from Visy mill to Gocup Road intersection	3.3 Road geometry
2, 3	Shoulder width does not meet the needs of PBS Class 2B vehicles, restricts the run-out width for straying vehicles and provides limited moisture protection to the road base	Widen sealed road shoulders to 1.35 metres with extra widening on the outside of curves, with priority being Gocup Road then Snowy Mountains Highway from Visy mill to Gocup Road intersection	3.3 Road geometry
2, 3	Pavement is not strong enough for expected freight demands	Reconstruct pavement in poor condition on Gocup Road to accommodate vehicles with greater mass	3.4 Pavement condition
1, 2, 3	Trucks require extra tracking width on curves	Minor realignment of Gocup Road to reduce the number of curves with a radius of 300 to 450 metres	3.3 Road geometry
1, 3	Road pavement on very steep grades, particularly on Gocup Road, often fails to support traction for fully loaded trucks	Place heavy duty pavement on 10 per cent grades on Gocup Road	3.3 Road geometry
1	There is a need for truck drivers on the Snowy Mountains Highway to break their journey if they are affected by the Visy curfew. There are no specific rest areas for heavy or light vehicles along the corridor, meaning rest area facilities on other parts of the adjacent network are used, particularly the Hume Highway	Investigate the need for a rest area west of Adelong due to the Visy curfew	3.2 Traffic / 3.1 Road safety
1, 2, 3	Ensure that safety performance of the corridor remains at an acceptable level	Continue to implement road safety initiatives to address identified and emerging crash types and locations	3.1 Road safety
1, 2, 3	The hazardous roadside increases the severity of crashes with hazards including steep batters, trees, and safety barriers, bridge approaches and bridge barriers which do not meet current minimum standards	Investigate opportunities to implement a five metre traversable clear zone along the length of the 100 km/h sections of the corridor. Where this cannot be provided, investigate the implementation of appropriate barriers	3.1 Road safety

Corridor planning section	Key challenges	Priorities	Strategic response reference
1	There is a crash cluster on the Snowy Mountains Highway one kilometre east of the Hume Highway interchange	Investigate improvements to address safety issues at this location	3.1 Road safety
1	The right angle movement at Snowy Mountains Highway and Lynch Street is a challenge for heavy vehicles	Investigate improvements to address safety issues at this location	3.2 Traffic
2	Truck queuing outside Carter-Holt mill at Tumut causes vehicle conflict	Provide appropriate measures to reduce conflict between turning and through traffic	3.2 Traffic
2, 3	The intersection of the Snowy Mountains Highway and Gocup Road has a high number of crashes and the Gilmore Creek Bridge on Gocup Road is narrow on a curved alignment with no safety barrier on the approaches	Investigate improvements at the intersection and on the curve at Gilmore Creek Bridge. Install safety barriers on the approaches to Gilmore Creek Bridge	3.1 Road safety
2	The alignment of the Snowy Mountains Highway in the vicinity of the intersection with Jingellic to Gilmore Road and Gilmore Creek Bridge has a high crash risk	Investigate improvements to straighten curves, taking into consideration eventual bridge replacement	3.1 Road safety
1, 2, 3	Unplanned incidents cause delays and the need to use incident response routes	Reduce the number of incidents on the corridor by implementing the improvements outlined in this strategy, which include improving pavement, improving alignment and upgrading the road geometry	3.2 Traffic
3	There is little opportunity for vehicles to overtake slower moving vehicles, particularly loaded trucks on steep grades of up to 10 per cent at two locations on Gocup Road	Build overtaking lanes on the 10 per cent grades on Gocup Road	3.2 Traffic
1	There is little opportunity for vehicles to overtake slower moving vehicles, particularly loaded trucks on steep grades of up to 10 per cent on the Snowy Mountains Highway west of Adelong	Investigate overtaking lanes on 10 per cent grade west of Adelong	3.2 Traffic
2	Intended travel paths are not clear between Gilmore and Tumut and most rural intersections do not have enough road width to pass right turning vehicles	Improve line marking at Snowy Mountains Highway intersections between Whatmans Lane and Gilmore Mill Road; improve layout and install lighting at Snowy Mountains Highway and Tumut to Jingellic Road; widen road to allow right turning vehicles to be passed at Gocup Road and Quidong Road	3.2 Traffic
1, 2, 3	Occasional capacity issues on NSW TrainLink buses	Work with Transport for NSW to investigate potential solutions for any capacity issues on NSW TrainLink Buses	1.7 Public and active transport

Figure 4-1 Short term priorities including Regional Freight Pinch Point Program – Gocup Road (MR279) Program of works




Gundagai
Reconstruct and widen near the abattoir
Road widening and straightening curves
Widen road shoulders
Install southbound overtaking lane
Install heavy duty road pavement
Widen road
Install heavy duty road pavement
Install northbound overtaking lane
Widen road shoulders
Reconstruct and widen
Drainage improvements
Widen road shoulders
Road widening and straightening curves
Road widening and straightening curves
Drainage improvements
Road widening and straightening curves
Gocup Road
Install safety barriers on the approaches to Gilmore Creek Bridge
Widen road
Widen road shoulders
Widen road shoulders
Investigate improvements at the intersection of Snowy Mountains Highway and Gocup Road and on the curve at Gilmore Creek Bridge
Install safety barrier on bridge and approaches
Install safety barrier on outside of curve and widen curve
Provide appropriate measures to reduce conflict between turning and through traffic near Carter-Holt mill
Tumut
Widen intersection approach curve
Improve line marking at Snowy Mountains Highway intersections between Whatmans Lane and Gilmore Mill Road; improve layout and install lighting at Snowy Mountains Highway and Tumut to Jingellic Road intersection; widen road to allow right turning vehicles to be passed at Gocup Road and Quidong Road
Investigate improvements to straighten curves near the intersection of the Snowy Mountains Highway and Jingellic to Gilmore Road, taking into consideration eventual bridge replacement
Jingellic to Gilmore Road
Investigate improvements to address safety issues at this location

Coalition MPs Katrina Hodgkinson and Daryl Maguire, Gundagai mayor Abb McAlister and Tumut mayor Trina Thomson at the $70 Million Gocup Road funding announcement on Saturday 21 February 2015. Picture: Laura Hardwick, The Daily Advertiser

4.2 Medium term

Table 4-3 Key challenges and medium term priorities

Corridor planning section	Key challenges	Priorities	Strategic response reference
1, 2, 3	Poor road geometry from tight curves and narrow road on an old road pavement 35 to 40 kilometres west of Tumut	Reconstruct and realign curves	3.3 Road geometry / 3.4 Pavement condition
1, 2, 3	The hazardous roadside in high speed zone increases the severity of crashes with the hazards including steep batters, trees, and safety barriers, bridge approaches and bridge barriers which do not meet current minimum standards	Implement five metre traversable clear zones along the 100 km/h sections of the corridor	3.1 Road safety
1, 2, 3	Not enough road width for vehicles to pass right turning vehicles	Widen road to allow right turning vehicles to be passed at Snowy Mountains Highway and the intersections at Sandy Gully Road, Black Creek Road, and Bangadang Road; and also at Gocup Road and Gocup Farms Road	3.2 Traffic
1, 2, 3	Limited opportunity for vehicles to overtake slower moving vehicles	Continue to assess the corridor for the need to improve overtaking opportunities	3.2 Traffic
1, 2, 3	As sites with high crash rates are treated other sites occur with the highest crash rates	Continue to implement road safety initiatives to address identified and emerging crash types and locations	3.1 Road safety
1, 2, 3	If small pavement condition issues are not treated early when it is cost-effective to do so they will become larger problems to fix	Carry out cost-effective repairs to the road and structures	3.4 Pavement condition
3	Limited transport opportunities to Gundagai Abattoir	Construct an off-road cycleway from South Gundagai to the abattoir	1.7 Public and active transport
2	Limited opportunity for coaches to stop at Tumut Region Visitor Information Centre	Construct bus bay and pedestrian refuge	1.7 Public and active transport
1, 2, 3	Safe school bus facilities along the corridor	New requests for school bus stops will be assessed with work delivered on a priority basis	1.7 Public and active transport

4.3 Long Term

Table 4-4 Key challenges and long term priorities

Corridor planning section	Key challenges	Priorities	Strategic response reference
1	Some sections of the corridor are too narrow for heavy vehicles	Progressively widen travel lanes with associated works on Snowy Mountains Highway to the network target of 3.5 metres	3.3 Road geometry
1, 2, 3	Increasing freight loads will reduce the remaining life of bridges	Continue to assess the adequacy of bridges to ensure ongoing safety and freight efficiency	3.3 Road geometry
1, 2, 3	Inadequate rest area facilities for heavy vehicle operators	Continue to monitor the effectiveness of heavy vehicle rest areas including frequency, accessibility and adequacy of facilities	3.1 Road safety
1, 3	Lack of right turn lanes at intersections to allow vehicles to pass right turning vehicles	Widen the highest priority substandard intersections to ensure they meet the network planning targets	3.2 Traffic
1, 2, 3	Inadequate opportunities for vehicles to overtake slower moving vehicles	Continue to assess the need for improvements to overtaking opportunities	3.2 Traffic

Winding sections of road at Gilmore have a relatively high crash history

5 COMMUNITY CONSULTATION

Feedback from the community was invaluable in completing the final strategy, ensuring the needs of the local communities and other road customers are met

During development of the Tumut to Hume Highway Draft Corridor Strategy, local councils and other government agencies were consulted and feedback was included in the strategy.

Issues raised were:

- Conflicting vehicle movements between local and through traffic
- Future freight needs
- Insufficient overtaking opportunities
- Improving the road surface
- Fixing locations where there is a higher incidence of crashes
- The involvement of speed in crashes along the corridor
- The need to inform road users about delays from road works
- Occasional capacity issues on NSW TrainLink buses
- Safety improvements required for bus and coach facilities
- Limited transport opportunities to Gundagai abattoir.

The Tumut to Hume Highway Draft Corridor Strategy was released for community comment between Monday 1 February and Friday 26 February 2016. This feedback was sought to better inform the final strategy document.

The draft report was published on the Transport for NSW and Roads and Maritime websites.

Relevant stakeholders were written to and invited to provide comment on the strategy. The list of community stakeholders who were contacted are as follows:

- Local government members of parliament
- Local shire councils
- Government Agencies
- Aboriginal Land Councils
- Local interest groups
- Chamber of Commerce
- Local industry
- Transport operators including freight, bus and taxi
- Visitor information centres
- Schools
- Emergency services

Community members and stakeholders were encouraged to send submissions via the Roads and Maritime website, email, mail or phone.

Four submissions were received including one submission from Tumut Shire Council.

The following table lists the issues raised from the three submissions and how those issues have been addressed to update the final Tumut to Hume Highway Corridor Strategy.

Community feedback has been incorporated into the final corridor strategy

Table 5-1 Community issues raised and responses to feedback

Issue	Submission numbers	Summary of issues	Issue response
Overtaking Lanes	3	There is a need for overtaking lanes around Adelong with the emphasis being to the west of Adelong, particularly out of Adelong and they should be delivered in the short term.	The strategy recognises the need for more overtaking opportunities west of Adelong, particularly on the steep grade sections. In the short term, the priority is to investigate the location of any future overtaking lanes west of Adelong. Developing projects such as overtaking lanes can be a lengthy process. A range of factors, including cost, environmental and community impacts are assessed to develop the best project before a final design is prepared and funding sought. For example, overtaking lanes is a high priority on Gocup Road but will take nearly five years to deliver (this includes planning and construction). Development of potential overtaking lanes in the short term and construction of the lanes in the medium term is a realistic and typical timeframe for this process.

Issue	Submission numbers	Summary of issues	Issue response
Recent Road Works	2	Safety improvements at the intersection of Snowy Mountains Highway and Jingellic to Gilmore Road have not fixed the problems – concerns regarding sight distance, no passing lane at Snowy Mountains Highway and Jingellic to Gilmore Road, incorrect camber on road for right turning vehicles into Jingellic to Gilmore road.	Roads and Maritime has completed a $1.9 million upgrade at the Snowy Mountains Highway and Batlow Road (Jingellic to Gilmore Road) intersection, near Tumut. The work was carried out as part of the Safer Road State Blackspot Treatment Program with the aim of reducing crashes on a 650 metre, high crash section of the highway at the intersection and the curve immediately east. A post-completion Road Safety Audit was completed in March 2016. Roads and Maritime is reviewing the findings to determine if any further work is required. This location has a number of constraints with the bridge over Gilmore Creek reducing sight distance for vehicles turning out of Batlow Road and being too close to the intersection to allow a right turn lane to be built on the Snowy Mountains Highway at the approach. The requirement to provide superelevation on the curve towards Tumut means that it is not possible to design camber for a right turn at this intersection. The strategy recognises the constraints at this location and investigation of improvements which will consider a new road alignment is a short term priority.
Rail transport	1	Rail is very efficient at moving freight. Why spend the money on the road when the rail could be reopened?	Please refer to section 1.5 Rail freight, which has been created in response to the issue.
Traffic	1	Majority of freight task from Visy Mill via Adelong is container export on semi-trailer vehicles increasing proportion of semi-trailers near Hume Highway.	Agreed, explanation changed on page 8.
Freight	1	Trucks require extra tracking width on curves on Snowy Mountains Highway too.	Agreed, and will be considered for work on the Snowy Mountains Highway.
Pavement	1	Sections of the Snowy Mountains Highway in Tumut have kerb and gutter.	Agreed, wording changed to explain the issue about road surface on page 20.

Issue	Submission numbers	Summary of issues	Issue response
Pavement	1	Queried need for heavy duty road pavement after grades flattened.	Despite the proposed works to flatten some steep grades along the corridor, grades along other sections of the corridor will remain steeper than eight per cent and will require placement of heavy duty road pavement to provide sufficient traction for heavy vehicles.
Rest Area	1	Investigate the need for a rest area west of Adelong due to Visy curfew not supported as a priority.	There is a need to understand the rest area opportunities and deficiencies along the corridor to better support the freight industry in the region. Once the need is better identified through further consultation with the freight industry, options and costs will be investigated, and the priority of this initiative will be part of the review process.
Road Safety	1	Questioned the consideration of an arrester bed at intersection of Snowy Mountains Highway and Lynch Street, Adelong.	Agreed, wording changed on page 25 because solution has to be found.
Road Safety	1	Crashes at intersection of Snowy Mountains Highway and Gocup road are not related to alignment and bridge to the north. A roundabout would be more cost effective at the intersection of Snowy Mountains Highway and Gocup Road.	The corridor strategy recognises the need for further location specific investigation in the short term to find an appropriate solution to improve the intersection of Snowy Mountains Highway and Gocup Road. This investigation will include the road to the bridge over the Gilmore Creek which has a number of safety hazards. There will be further consultation with local government to understand the road safety issues on the curve and bridge approaches and assess all possible options for a solution.
Public transport	1	Investigation of occasional capacity issues on NSW TrainLink buses medium term priority is too low.	Agreed – moved to short term on page 25.

Thank you to those community members and Tumut Shire Council for providing feedback on the Tumut to Hume Highway Draft Corridor Strategy. Local knowledge is always invaluable in the process of developing corridor strategies so that they accurately represent the needs of the road customers and the community.

The NSW Government recognises the need to plan for the future. This final strategy provides a blueprint for the Tumut to Hume Highway corridor - identifying projects to deliver benefits to our road customers and also ensuring the road continues to meet the needs and demands of its customers for years to come.

REFERENCES

Note: All documents and references to the Roads and Traffic Authority (RTA) have been replaced with Roads and Maritime Services.

Census Statistics: **www.censusdata.abs.gov.au/census_services/getproduct/census/2011/quickstat/LGA14300?opendocument&navpos=220**

NSW Train Link – NSW Regional Trains and Coaches network: **www.nswtrainlink.info/__data/assets/pdf_file/0020/18353/Regional_network_map.pdf**

Tumut Shire Council (2010), Gocup Road Reconstruction 2011–2014: Business case, Tumut, p.5.

RMS 2008, *Network and Corridor Planning Practice Notes*, RMS, Sydney

RMS 2010, *Network Performance Measures and Network Planning Targets*, RMS, Sydney

Transport for NSW 2013, *NSW Freight and Ports Strategy*, Sydney

Transport for NSW 2012, *NSW Long Term Transport Master Plan*, Sydney

Transport for NSW 2013, Regional Transport Plans Murray-Murrumbidgee and Southern, Sydney

APPENDICES

Appendix 1 – Austroads vehicle classification system

VEHICLE CLASSIFICATION SYSTEM

AUSTROADS

CLASS	LIGHT VEHICLES
1	SHORT Car, Van, Wagon, 4WD, Utility, Bicycle, Motorcycle
2	SHORT - TOWING Trailer, Caravan, Boat
	HEAVY VEHICLES
3	TWO AXLE TRUCK OR BUS *2 axles
4	THREE AXLE TRUCK OR BUS *3 axles, 2 axle groups
5	FOUR (or FIVE) AXLE TRUCK *4 (5) axles, 2 axle groups
6	THREE AXLE ARTICULATED *3 axles, 3 axle groups
7	FOUR AXLE ARTICULATED *4 axles, 3 or 4 axle groups
8	FIVE AXLE ARTICULATED *5 axles, 3+ axle groups
9	SIX AXLE ARTICULATED *6 axles, 3+ axle groups or 7+ axles, 3 axle groups
	LONG VEHICLES AND ROAD TRAINS
10	B DOUBLE or HEAVY TRUCK and TRAILER *7+ axles, 4 axle groups
11	DOUBLE ROAD TRAIN *7+ axles, 5 or 6 axle groups
12	TRIPLE ROAD TRAIN *7+ axles, 7+ axle groups

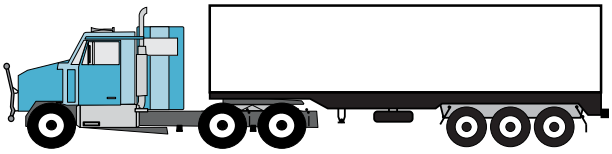
Appendix 2 – About Performance-Based Standards

The Performance-Based Standards (PBS) Scheme offers the heavy vehicle industry the potential to achieve higher productivity and safety through innovative and optimised vehicle design.

PBS vehicles are designed to perform their tasks as productively, safely and sustainably as possible, and to operate on networks that are appropriate for their level of performance. The basic principle of PBS is matching the right vehicles to the right tasks.

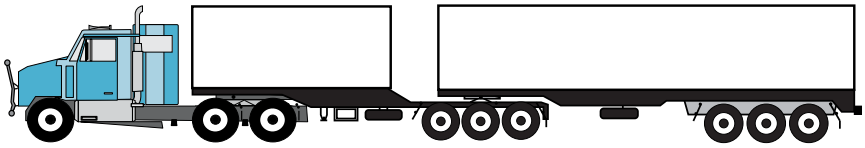
PBS vehicles are tested against 16 stringent safety standards and four infrastructure standards to ensure they fit the existing road network and are safe. The scheme has been in operation since October 2007.

Example vehicles with typical lengths



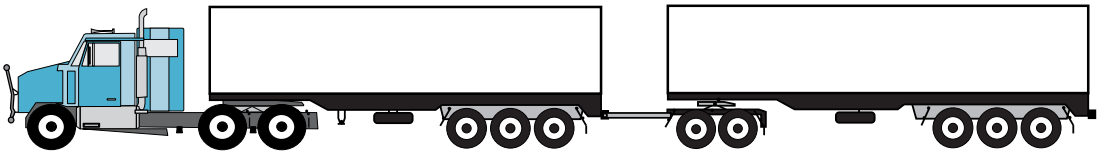
6 axle articulated combination

General access semi-trailer, 19.0 metres



9 axle B-double combination

PBS Class 2A, e.g. B-double, 26.0 metres



PBS A-double combination

PBS Class 2B, e.g. A-double, 30.0 metres

Further details:
www.nhvr.gov.au/road-access/performance-based-standards/about-performance-based-standards

Appendix 3 – Network Planning Targets to be adopted

Based on the Roads and Maritime Services 2010, *Network Performance Measures and Network Planning Targets and/or National Transport Commission (2007) PBS Scheme* – Network Classification Guidelines

Priority Road Characteristic	Tumut to Hume Highway corridor	Visy mill via Tumut to Hume Highway at Gundagai
	Planning target	Varied planning target
Grade	Maximum of 10 per cent[1]	
Curve radius	A design speed of 100 km/h will be adopted1 as steep terrain has an absolute minimum curve radius of 440 metres	
Slope risk rating	Risk rating 3 or lower	
Culvert risk rating	Risk rating 3 or lower	
Bridge health condition	Good	
Sealed road shoulder width	One metre	1.35 metres which will accommodate the additional tracking width of long vehicles, to meet National Transport Commission Guidelines
Lane width	3.5 metres	
Skid resistance	Poor skid resistance will be treated under the SCRIM procedure	
Number of through lanes	One each way	
Overtaking lanes	Provide overtaking opportunities to ensure Level of Service C	Provide overtaking opportunities every 5–10 kilometres based on National Transport Commission Guidelines (Table 9, p11). This will allow longer vehicles to be passed
Minimum intersection treatment	Minimum treatments as outlined in the Network Planning Targets	
Clear zones	Five metres	
Roadside barrier	Install barrier where five metre clear zones cannot be provided	

Variations to target

1. Adopted due to reasonable costs when considering terrain

NSW GOVERNMENT

Tumut to Hume Highway (Snowy Mountains Highway and Gocup Road) Corridor Strategy

July 2016
ISBN: 978-1-925421-77-4

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